

City of Houston, Texas, Ordinance No. 2021- 1037

AN ORDINANCE RELATING TO THE ADOPTION OF CONSTRUCTION CODES FOR THE PROTECTION AND PRESERVATION OF LIVES AND PROPERTY FROM FIRE AND OTHER PERILS; AMENDING THE CITY OF HOUSTON CONSTRUCTION CODE BY ADOPTING NEW VOLUMES AND REVISED VERSIONS OF SOME EXISTING VOLUMES, AS WELL AS ADOPTING LOCAL AMENDMENTS OR ADMINISTRATIVE PROVISIONS FOR THOSE VOLUMES, AND ADOPTING CONFORMING AMENDMENTS TO THE CODE OF ORDINANCES, HOUSTON, TEXAS, CONTAINING OTHER PROVISIONS RELATING TO THE FOREGOING SUBJECTS; CONTAINING A REPEALER; CONTAINING A SAVINGS CLAUSE; PROVIDING FOR SEVERABILITY; ESTABLISHING AN EFFECTIVE DATE; AND DECLARING AN EMERGENCY.

* * * * *

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF HOUSTON, TEXAS:

Section 1. That the *City of Houston Construction Code* is comprised of the following:

City of Houston Building Code, including as Chapter 46, the *Houston Sign Code*

City of Houston Energy Conservation Code

City of Houston Electrical Code

City of Houston Existing Building Code

City of Houston Fire Code

City of Houston Mechanical Code

City of Houston Plumbing Code

City of Houston Residential Code

City of Houston Swimming Pool and Spa Code

Chapter 10, Article IX, of the *Code of Ordinances, Houston, Texas*, also known as the *Houston Building Standards Code*

Houston Public Works Infrastructure Design Manual, also known as the *Infrastructure Design Manual* or *IDM*.

Section 2. That the volume of the *City of Houston Construction Code* known as the *City of Houston Building Code*, consisting of the 2012 Edition of the *International*

Building Code and the *Houston Amendments to 2015 International Building Code Modifications*, which regulates and governs the conditions and maintenance of all property, buildings and structures, as adopted by Ordinance No. 2015-1108, and amended by Ordinances Nos. 2016-1289, 2015-1316, 2016-718, 2016-865, 2018-11, 2018-691, and 2020- 669, is hereby replaced with the *International Building Code*, 2015 Edition, as published by the International Code Council, 500 New Jersey Avenue, NW, 6th Floor, Washington, D.C. 20001, on file with the City Secretary's Office and incorporated by reference herein as **Exhibit A**, and is adopted as modified by the document entitled *Houston Amendments to the 2015 International Building Code*, which is incorporated by reference herein as **Exhibit A-1**.

Without limitation of other documents that are adopted by reference, the *City of Houston Building Code* includes Chapter 46, the *Houston Sign Code*, which is separately published by the Public Works and Engineering Department.

Section 3. That the volume of the *City of Houston Construction Code* known as the *City of Houston Energy Conservation Code*, consisting of the *City of Houston Residential Energy Conservation Code* and the *City of Houston Commercial Energy Conservation Code*, remains as adopted by Ordinance No. 2016-0718 and 2016-0865 and amended by Ordinance No. 2018-0011.

Section 4. That the volume of the *City of Houston Construction Code* known as the *City of Houston Electrical Code*, consisting of the 2014 Edition of the *National Electrical Code* and the 2014 Administrative Code Provisions, as adopted by Ordinance No. 2014-876, effective September 24, 2014, and amended by Ordinance No. 2018-0011, is hereby replaced with the *National Electrical Code*, 2020 Edition, as published by the

National Fire Protection Association, One Batterymarch Park, Quincy, Massachusetts 02169-7471, on file with the City Secretary's Office and incorporated by reference herein as **Exhibit B**, and is adopted as modified by the document entitled *Administrative Code Provisions for the 2020 National Electrical Code*, which is incorporated by reference herein as **Exhibit B-1**. Within 180 days of the passage of this ordinance, Houston Public Works will work with all stakeholders to review requirements associated with *National Electrical Code* Class 2 and Class 3 permitting.

Section 5. That the volume of the *City of Houston Construction Code* known as the *City of Houston Existing Building Code*, consisting of the *2015 International Existing Building Code*, as published by the International Code Council, which is incorporated by reference herein as **Exhibit C**, as modified by the document entitled *Houston Amendments to the 2015 International Existing Building Code*, which is incorporated by reference herein as **Exhibit C-1**, is hereby adopted as part of the *City of Houston Construction Code*.

Section 6. That the volume of the *City of Houston Construction Code* known as the *City of Houston Fire Code*, consisting of the 2012 Edition of the *International Fire Code* and the *Houston Fire Code Modifications 2015*, as adopted by Ordinance No. 2015-1108, and amended by Ordinance Nos. 2015-1289, 2015-1316, and 2018-0011 is hereby replaced with the *International Fire Code*, 2015 Edition, as published by the International Code Council, on file with the City Secretary's Office and incorporated by reference herein as **Exhibit D**, and is adopted as modified by the document entitled *Houston Amendments to the 2015 International Fire Code*, which is incorporated by reference herein as **Exhibit D-1**, and is hereby adopted as part of the *City of Houston Construction Code*.

Section 7. That the City Council hereby authenticates the copies of the various revised Houston Fire Department LSB Standards as adopted by the Fire Marshal, on file with the City Secretary's Office. New standards may be added and current standards amended from time to time.

Section 8. That the volume of the *City of Houston Construction Code* known as the *City of Houston Mechanical Code*, consisting of the *2012 Uniform Mechanical Code* and the *Houston Mechanical Code Modifications 2015*, which provide complete requirements for the installation and maintenance of heating, ventilating, cooling, and refrigeration systems, as adopted by Ordinance No. 2015-1108, and amended by Ordinance Nos. 2015-1289 and 2018-0011, is hereby replaced with the *Uniform Mechanical Code*, 2015 Edition, as published by the International Association of Plumbing and Mechanical Officials, 4755 E. Philadelphia St., Ontario, CA 91761-2816, on file with the City Secretary's Office and incorporated by reference herein as **Exhibit E**, and is adopted as modified by the document entitled *Houston Amendments to the 2015 Uniform Mechanical Code*, which is incorporated by reference herein as **Exhibit E-1**.

Section 9. That the volume of the *City of Houston Construction Code* known as the *City of Houston Plumbing Code*, consisting of the *2012 Uniform Plumbing Code* and the *Houston Plumbing Code Modifications 2015*, providing basic, uniform plumbing standards among the various practices and diverse local codes, as adopted by Ordinance No. 2015-1108, and amended by Ordinance Nos. 2015-1289 and 2018-0011, is hereby replaced with the *Uniform Plumbing Code*, 2015 Edition, as published by the International Association of Plumbing and Mechanical Officials, on file with the City Secretary's Office and incorporated by reference herein as **Exhibit F**, and is adopted as modified by the

document entitled *Houston Amendments to the 2015 Uniform Plumbing Code*, which is incorporated by reference herein as **Exhibit F-1**.

Section 10. That the volume of the *City of Houston Construction Code* known as the *City of Houston Residential Code*, consisting of the 2012 Edition of the *International Residential Code for One- and Two-Family Dwellings* and the *Houston Residential Code Modifications 2015*, which regulate and control the design, construction, quality of materials, erection, installation, alteration, repair, location, relocation, replacement, addition to, use or maintenance of one- and two-family dwellings, as adopted by Ordinance No. 2016-1108, and amended by Ordinances Nos. 2015-1289, 2015-1316, and 2018-11, is hereby replaced with the *International Residential Code for One- and Two-Family Dwellings*, 2015 Edition, as published by the International Code Council, on file with the City Secretary's Office and incorporated by reference herein as **Exhibit G**, and is adopted as modified by the document entitled *Houston Amendments to the 2015 International Residential Code for One- and Two-Family Dwellings*, which is incorporated by reference herein as **Exhibit G-1**.

Section 11. That the volume of the *City of Houston Construction Code* known as the *City of Houston Swimming Pool and Spa Code*, consisting of the 2018 *International Swimming Pool and Spa Code*, as published by the International Code Council, which is incorporated by reference herein as **Exhibit H**, as modified by the document entitled *Houston Amendments to the 2018 International Swimming Pool and Spa Code*, which is incorporated by reference herein as **Exhibit H-1**, is hereby adopted as part of the *City of Houston Construction Code*.

Section 12. That Chapter 10, Article IX, of the *Code of Ordinances, Houston, Texas*, also known as the *Houston Building Standards Code*, as may be amended from time to time, is hereby adopted as part of the *City of Houston Construction Code*.

Section 13. That the *Houston Public Works Infrastructure Design Manual* promulgated by the Houston Public Works Director, as may be amended from time to time, is hereby adopted as part of the *City of Houston Construction Code*.

Section 12. That, for the sake of clarity, the various "Houston Amendments" documents described above have been prepared in a legislative format that depicts certain amendments to the 2015 or 2018 international or uniform codes by underlining added text and striking through deleted text. The stricken portions are for illustration of text that is not adopted by the City of Houston, and the underlining is for illustration of text added by the City of Houston. In some instances, the changes are described by an Editorial Note, with terms such as "**DELETE**" a certain section or "**REPLACE**" a certain table.

Section 13. That some volumes of *City of Houston Construction Code* as adopted herein are based upon uniform codes promulgated by recognized national code organizations, which have been identified above. Local modifications have been made to various provisions of the uniform codes solely to address imminent threats of destruction of property or injury to persons. However, to the extent that any such local modification provision is determined to be unenforceable for purposes of Chapter 245 of the Texas Local Government Code, then it is the intent of the City Council that the corresponding provision of the corresponding uniform national or international code be enforced in its place. For that limited purpose, the uniform national or international codes are also

adopted in their entireties without Houston modifications. However, to the extent that any such local modification provision is determined to be unenforceable because of a conflicting state or federal law, then it is the intent of the City Council that the corresponding state or federal law be enforced in its place.

Section 14. That the volumes of the *City of Houston Construction Code* may be amended from time to time, in the same manner provided in Section 1-4 of the Code of Ordinances, City of Houston, Texas, provided that the amendment shall refer to the *City of Houston Construction Code* and the particular volume thereof that is to be amended. The provisions of Section 1-5 of the Code of Ordinances shall be applicable in the event of the repeal of any portion of the *City of Houston Construction Code*, as adopted herein.

Section 15. That copies of the *City of Houston Construction Code* shall be retained in the care, custody, and control of the Office of the City Secretary and preserved in such form as the City Secretary may consider to be the most expedient.

Section 16. That the adoption of this amendment to the *City of Houston Construction Code* shall not be construed to remove from office any member of any City Board created under the provisions of Ordinance Nos. 2010-847, 2010-871 and 2014-876, as amended. Each member of any board created under those ordinances shall continue to serve for the duration of his or her term of office in the corresponding position on the corresponding board as recreated in the *City of Houston Construction Code*, as amended by this Ordinance.

Section 17. That the provisions of the former Construction Code and Fire Code of the City of Houston, Texas, as adopted pursuant to Ordinance Nos. 2014-876, 2015-1108, 2016-865 and 2016-718, as amended, shall remain in full force and effect for the

trial and punishment of all criminal violations thereof occurring before the effective date of this Ordinance and for the recovery of penalties and forfeitures incurred thereunder, and for the preservation of rights, privileges, obligations, liabilities and remedies established, accrued, accorded or incurred thereunder before the effective date of this Ordinance. All technical provisions thereof relating to the manner and methods of design, equipment and construction of any building or structure for which a completed building permit application is received in the Building Official's Office before the effective date of this Ordinance shall continue to apply to the construction work performed pursuant to the building permit, regardless of whether the building permit is issued before or after the effective date of this Ordinance.

Section 18. That whenever in the *City of Houston Construction Code* an act or omission is prohibited or declared to be unlawful or an offense or a misdemeanor, or whenever in the *City of Houston Construction Code* the doing or performance of any act or duty is required or the failure to do any act is prohibited or declared to be unlawful, and no specific penalty is provided therefor, the violation thereof shall be punishable by a fine of not less than \$250 nor more than \$2000, provided, however, that no penalty shall be greater or lesser than the penalty provided for the same offense under the laws of the state. Each day that any violation continues shall constitute and be punishable as a separate offense. In prosecutions, the various provisions of the *City of Houston Construction Code* that are designated as an "exception" or as "exceptions" shall not be treated as exceptions within the meaning of Section 2.02 of the Texas Penal Code, and instead, it is the intent of the City Council in adopting this Ordinance that they shall

constitute "defenses to prosecution" within the meaning of Section 2.03 of the Texas Penal Code.

Pursuant to the provisions of Section 54.001 of the Texas Local Government Code, the City Council hereby finds, and adopts such finding, that each and every regulation enumerated in the *City of Houston Construction Code* that is punishable, upon violation, by a fine in excess of \$500 governs fire safety and/or public health and sanitation.

Section 19. That the provisions of this Ordinance shall not be construed to repeal Ordinance No. 78-2672 (the Annexation Ordinance), passed and approved on December 30, 1978, the provisions of which shall continue to apply to the operation of the *City of Houston Construction Code*, as amended by this Ordinance.

Section 20. That the Code of Ordinances, Houston Texas, is hereby amended as described in **Exhibit I**, attached hereto and incorporated herein. For the sake of clarity, Exhibit I has been prepared in a legislative format that depicts the amendments by underlining added text and striking through deleted text. The stricken portions are for illustration of text that is being deleted by the City of Houston, and the underlining is for illustration of text that is being added by the City of Houston. In some instances, the changes are described in instructions in the introduction phrase, with terms such as "deleting," "replace" or "replacing."

Section 21. That the City Council hereby approves a revised fee structure applicable to one- and two-family residential dwellings and townhouses and their detached accessory structures, with fees in the amounts set forth in the schedule attached hereto as **Exhibit J**, which fees will take effect on January 1, 2022, provided however, the fees in the attached schedule shall also be increased by and subject to the

annual fee increase pursuant to Section 1-13 of the Code of Ordinances, Houston, Texas, including the increase that will take effect on January 1, 2022. Effective upon the passage and approval of this Ordinance, the Director of Finance shall add the fees set forth in the schedule attached as **Exhibit J** to the City Fee Schedule.

Section 22. That all other ordinances and parts of ordinances in conflict herewith are hereby repealed to the extent of such conflict only.


Section 23. That, if any provision, section, subsection, sentence, clause, or phrase of this Ordinance, or the application of same to any person or set of circumstances, is for any reason held to be unconstitutional, void or invalid, the validity of the remaining portions of this Ordinance or their application to other persons or sets of circumstances shall not be affected thereby, it being the intent of the City Council in adopting this Ordinance that no portion hereof or provision or regulation contained herein shall become inoperative or fail by reason of any unconstitutionality, voidness or invalidity of any other portion hereof, and all provisions of this Ordinance are declared to be severable for that purpose.

Section 24. That the City Attorney is hereby authorized to direct the publishers of the codes amended by this Ordinance to make such nonsubstantive changes to the Codes as are necessary to conform to the provisions adopted in this Ordinance, and also to make such changes to the provisions adopted in this Ordinance to conform them to the provisions and conventions of the published Codes.


Section 25. That there exists a public emergency requiring that this Ordinance be passed finally on the date of its introduction as requested in writing by the Mayor;

therefore, this Ordinance shall be passed finally on such date and shall take effect at
12:01 a.m. on April 1, 2022.

PASSED AND APPROVED this 1st day of December, 2021.



Mayor of the City of Houston

Prepared by Legal Dept. 
EG/AT/gd/asw 10/12/2021 Assistant City Attorney
Requested by Carol Haddock, Director, Houston Public Works
L.D. File No. 040-2000001-001

Meeting 12/01/2021

Aye	No	
✓		Mayor Turner
....	Council Members
✓		Peck
✓		Jackson
✓		Kamin
✓		Evans-Shabazz
Absent		Martin
✓		Thomas
Absent on personal business		Travis
✓		Cisneros
✓		Gallegos
✓		Pollard
✓		Castex-Tatum
	✓	Knox
✓		Robinson
	✓	Kubosh
	✓	Plummer
✓		Alcorn
Caption	Adopted	

Captions Published in DAILY COURT REVIEW
Date: 12/7/2021

EXHIBIT I

AMENDMENTS TO THE CODE OF ORDINANCES, HOUSTON, TEXAS:

1. Amend Section 1-1 to read as follows:

Sec. 1-1. How Code designated and cited.

The ordinances embraced in the following chapters and sections shall constitute and be designated the "Code of Ordinances, City of Houston, Texas," and may be so cited.

The ~~City's Construction Code, and including the Fire Code, both constitutes~~ a part of this Code and each is adopted herein by reference. ~~The said two portions of this Construction Code are each is published by separate promulgation and they are is not set forth in this two-volume edition of the Code. Interested persons may contact the city secretary for purchase information.~~

2 Amend the definitions of "building official," "Construction Code," and "Fire Code," in Section 1-2 to read as follows:

Building official means the Director of Houston Public Works or such other person as the said director may designate to act as the chief *Construction Code* enforcement official of the city and the said official's designee. ~~The term relates primarily to these Houston Public Works employees who are engaged in the administration and enforcement of the City of Houston Construction Code and related laws.~~

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Construction Code means the *City of Houston Construction Code*, as amended from time to time by the city council, which code consists of various texts setting forth requirements relating to building construction and safety, namely:

City of Houston Building Code, also known as the *Building Code*

City of Houston Electrical Code, also known as the *Electrical Code*

City of Houston Energy Conservation Code, also known as the *Energy Conservation Code*

City of Houston Existing Building Code, also known as the *Existing Building Code*

City of Houston Fire Code, also known as the *Fire Code*

City of Houston Mechanical Code, also known as the *Mechanical Code*

City of Houston Plumbing Code, also known as the *Plumbing Code*

City of Houston Residential Code, also known as the *Residential Code*

City of Houston Swimming Pool and Spa Code, also known as the *Swimming Pool and Spa Code*

Chapter 10, Article IX, also known as the *Houston Building Standards Code*

and

Houston Public Works Infrastructure Design Manual, also known as the *Infrastructure Design Manual* or *IDM*.

In particular instances this Code may refer to individual portions ~~volumes~~ of the *Construction Code*, such as the *Building Code*, the *Plumbing Code*, the *Electrical Code*, or the ~~*Mechanical Code*~~, and any such specific reference shall be construed to mean the identified portion of the *Construction Code*. ~~Although they do not constitute a part of the Construction Code for other purposes, the International Residential Code and the International Energy Conservation Code, both as adopted by state law and amended by the city, shall be considered to be included within the term "Construction Code."~~

**

Fire Code means the City of Houston Fire Code of the City of Houston, as adopted and amended from time to time by the city council.

3. Amend Section 1-2 further to add, in the appropriate alphabetical order positions, the following new definitions:

**

Building Code means the City of Houston Building Code, as adopted and amended by the city council.

**

Electrical Code means the City of Houston Electrical Code as adopted and amended by the city council.

**

Energy Conservation Code means the City of Houston Residential Energy Conservation Code or the City of Houston Commercial Energy Conservation Code, both as adopted and amended by the city council.

**

Existing Building Code means the City of Houston Existing Building Code, as adopted and amended by the city council.

**

Mechanical Code means the City of Houston Mechanical Code, as adopted and amended by the city council.

**

Plumbing Code means the City of Houston Plumbing Code, as adopted and amended by the city council.

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Residential Code means the City of Houston Residential Code, as adopted and amended by the city council.

**

Swimming Pool and Spa Code means the City of Houston Swimming Pool and Spa Code, as adopted and amended by the city council.

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4. Amend the row for “Dry Cleaning Plant” in the table in Section 1-10(b)(8) to read as follows:

Dry Cleaning Plant	21-166(a)(3); <i>Fire Code</i> § 105.6.1342
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5. Amend Section 2-278(a)(6) to read as follows:

- (6) Administration and enforcement of the city's *Construction Code* and related laws.

6. Replace the definition of the term “building inspection division” in Section 5-116 with the definition of the revised term “Building Code Enforcement,” which reads as follows:

Building Code Enforcement ~~inspection division~~ means that division within the Houston Public Works that is assigned the responsibility of enforcement of the *Construction Code*.

7. Replace the term “the building inspection division” in Sections 5-118(a), 5-121(b), and 5-136 with the revised term “Building Code Enforcement,” as shown below:

Sec. 5-118. General regulations.

- (a) No skeet or shooting gallery shall be constructed or operated within the city unless the plans for such are submitted to ~~the building inspection division~~ Building Code Enforcement. The skeet club or shooting gallery shall comply with all provisions of the Construction Code. The approval of the chief of police shall be required as to the location of any skeet club or shooting gallery.

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Sec. 5-121. Special shooting gallery permit.

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- (b) The applicant shall advise ~~the building inspection division~~ Building Code Enforcement and the chief of police that he desires a special permit and shall designate the maximum caliber and the most powerful standard pistol cartridge proposed to be fired at the shooting gallery.

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Sec. 5-136. Required.

It shall be unlawful for a person to establish, maintain or operate, within the corporate limits of the city, a skeet club or shooting gallery without having first secured a license to do so from the chief of police. Such license shall not be issued by the chief of police unless the person applying therefor has secured a certificate of occupancy from ~~the building inspection division~~ Building Code Enforcement authorizing the occupancy of the premises for purposes of operating a skeet club or shooting gallery. Provided, however, this article governing the construction, licensing, use and occupancy of skeet clubs and shooting galleries shall not be applicable to any such installations which are constructed, operated and supervised in accordance with U. S. Army or Reserve Officers Training Corps regulations by school districts, colleges or universities.

8. Amend Section 5-173(b) to read as follows:

- (b) Any signage required by this section shall be in conformance with the *Sign Code* (Chapter 46 of the City of Houston ~~Building Code~~).

9. Amend Section 9-801(c)(2) to read as follows:

- (2) At the time a stop work order is issued, the person performing the work and the permit holder shall be given notice of a right to a hearing on the matter pursuant to section 9-757 of this article. Any stop work order that has been issued shall remain in effect pending any hearing that has been requested unless the stop work order is withdrawn by the director.

10. Amend Section 10-1(b) to read as follows:

- (b) The *Construction Code* was formerly known as the *Building Code*. Any reference in city ordinances, contracts, or other documents to the *Building Code* shall be construed to mean the document now known as the *Construction Code*, unless the reference is clearly intended by its context to mean that document called the *City of Houston Building Code*, which is now one of several documents that constitute the *Construction Code*.

11. Amend Section 10-3(a)(3) to read as follows:

- (3) The interior remodeling of a building, provided that the remodeling will not change the building's "use and occupancy classification" within the meaning of Chapter 3 of the *City of Houston Building Code*.

12. Amend Section 10-155(1) to read as follows:

- (1) An owner of an MFRB violates this article if the MFRB does not comply with:
 - a. All applicable provisions of the *Fire Code*;
 - b. Sections ~~LD~~102 through ~~LD~~108 of ~~appendix L~~ Appendix D (Life-Safety Requirements for Existing Buildings) of the *Existing Building Code* ~~(which provisions are part of the Building Code's "Life Safety Appendix")~~;
 - c. Sections 10-211 through 10-~~218~~ 215 of this Code (which provisions pertain to the numbering of buildings);
 - d. The provisions of chapter 41 of this Code (which provisions pertain to street names and site addresses);
 - ~~ed.~~ The provisions of ~~C~~chapter 43 of this Code (which provisions pertain to swimming pools); and
 - ~~fe.~~ Sections 92.153 through 92.162 of the Texas Property Code (which provisions pertain to security devices).

13. Amend Section 10-216(e) to read as follows:

- (e) Provisions of this section shall not be construed to authorize the erection or maintenance of any sign or marker in contravention of any applicable provisions of the *Sign Code* ~~chapter 46 of the Building Code~~.

14. Amend Section 10-256 to read as follows:

Sec. 10-256. Conformance to uniform codes.

Any industrialized building or industrialized housing erected or installed in the city shall be constructed in accordance with the requirements, ~~and standards and rules as determined by the Texas Industrialized Building Code Council, pursuant to Chapter 1202 of the Texas Occupations Code of the Uniform Building Code, the Uniform Plumbing Code and the Uniform Mechanical Code as published by the International Conference of Building Officials and the International Association of Plumbing and Mechanical Officials and as these codes existed on January 1, 1985; provided, however, this provision shall only be applicable to the extent that the Construction Code is not enforceable in regard to the construction of such structures due to the provisions of Article 5221f-1, Texas Revised Civil Statutes.~~

15. Amend Items (4) and (7) of Section 10-298 to read as follows:

- (4) Any building of wooden frame construction wherein any cafe or restaurant business is operated, unless the walls and ceilings of that portion of the building in which the cafe or restaurant is operated are separated from the remainder of the building by one-hour fire-resistive materials ~~as defined in the Building Code.~~

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- (7) Any lodging house being operated in a two-story building of wooden frame construction; provided, however, that no such lodging house shall constitute a fire hazard if:
- a. The ceiling of the first floor is separated from the floor of the second by one-hour fire-resistive materials ~~as defined in the Building Code;~~ and
 - b. The walls between the rooms are insulated by one-hour fire-resistive materials ~~as defined in the Building Code~~ that extend from ceiling to floor; and
 - c. The stairways, including the doors, platforms, landings, railings and corridors or passageways constructed in connection therewith, in all ways conform to the provisions of the *Building Code*; and

16. Amend the definition of “building standards official” in Section 10-317 to read as follows:

Building standards official means the neighborhood protection official or the building official or the fire code official (as defined in the *Fire Code*), according to their respective enforcement responsibilities as provided in this article or in the *Fire Code*.

17. Amend Section 10-363(e)(5) to read as follows:

- (5) Provide each non-vacant dwelling unit, congregate living facility, and sleeping unit with means of egress as required by the *Construction Code* in effect at the time of construction and as required by Appendix D L to the *Existing Building Code*; and

18. Amend the Title of Article XVII of Chapter 10 to read as follows:

ARTICLE XVII. ABATEMENT OF OFF-PREMISE SIGNS CONSTRUCTED OR MAINTAINED IN VIOLATION OF THE SIGN CODE SECTION 4612(b) OF THE CITY OF HOUSTON BUILDING CODE

19. Amend Section 10-651 by deleting the definition of the term “Sign Code.”

~~*Sign Code* means Chapter 46 of that volume of the Construction Code known as the City of Houston Building Code~~

20. Amend the definition of “member of the executive branch” in Section 18-71 by replacing the term “Fire Board of Appeals” with the revised term “Fire Code Board of Appeals,” as shown below:

Member of the executive branch means the mayor, city controller, mayor-elect, city controller-elect, candidate for mayor or controller, or member of the Archaeological and Historical Commission, Airport Land Use Regulations Board of Adjustment, Automotive Board, Board of Public Trusts, Boiler Code Review and Licensing Board, Building and Standards Commission, Civil Service Commission, Electrical Board, Fire Code Board of Appeals, General Appeals Board, Helicopter Facilities Licensing and Appeals Board, *Mechanical Code* Review Board, Municipal Board on Sign Control, Planning Commission, Plumbing Code Review Board, Tower Permit Commission, or Wastewater Capacity Reservation Review Board.

21. Amend Section 19-23(a) to read as follows:

- (a) In addition to the remedies provided in section 19-91 of this Code, whenever the city engineer finds that there are grounds for revocation of a floodplain development permit, he shall give written notice to the permittee by personal service or by certified mail, return receipt requested, addressed to the applicant at the address set forth in the floodplain development permit application. That notice may require that any work on the property currently underway is required to stop immediately, that a stop work order is being issued, and shall set forth:

22. Amend Section 19-91(c)(2) to read as follows:

- (2) At the time a stop work order is issued, the person performing the work and the permittee shall be given notice of a right to a hearing on the matter pursuant to Section 117.2 of the Construction Code for permits authorized by that Code. Upon request, such a hearing shall be held within three business days unless the permittee or person who was performing the work requests an extension of time. Any stop work order that has been issued shall remain in effect pending any hearing that has been requested unless the stop work order is withdrawn by the city engineer.

23. Amend Section 28-37 to read as follows:

Sec. 28-37. Attention-getting devices.

- (a) As used in this section, attention-getting devices shall mean devices erected, placed or maintained outdoors so as to attract attention to any commercial business, or any goods, products or services available on the premises of a commercial business, including but not limited to the following devices: banners; cut out figures; discs; festooning, including tinsel, strings of ribbons, and pinwheels; inflatable objects, including balloons; non-governmental flags; pennants; propellers; steam- or smoke-producing devices; streamers; whirligigs; wind devices; blinking, rotating, moving, chasing, flashing, glaring, strobe, scintillating, search, flood or spot lights; or similar devices, any of which are located or employed in connection with the conduct of a commercial business. Attention-getting devices shall not include any structure or device that is permitted under the ~~Houston Sign Code, Chapter 46 of the Building Code.~~
- (b) It shall be unlawful for any person to place, erect, maintain, or display any attention-getting device on any private or public property within the city. No attention-getting device shall be eligible for a permit under the ~~Houston Sign Code.~~

24. Amend Items (2) and (3) of Section 28-43(a) to read as follows:

- (2) *Political advertising material* means any advertising material relating to any election which might, with reasonable foreseeability, be placed, posted or erected within the city by any person in violation of sections 28-38 and 28-39 of this Code or ~~of the Sign Code Chapter 46 of the city's Building Code;~~ and
- (3) *The warning* means the following words: "Warning: Placement, posting or erection of this material within the City of Houston is regulated by sections 28-38 and 28-39 of ~~this Code the city's Code of Ordinances and the Sign Code Chapter 46 of the city's Building Code;~~ violation thereof is punishable by a fine of up to five hundred dollars (\$500.00)."

25. Amend Section 28-130(a) to read as follows:

- (a) Notwithstanding ~~the Sign Code chapter 46 of the Building code~~ or any other city ordinance, code, or regulation to the contrary, it shall be unlawful for the owner or operator of any enterprise or any other person to erect, construct, or maintain any sign for the enterprise other than one primary sign and one secondary sign, as provided herein.

26. Amend Section 28-202(b) to read as follows:

- (b) All determinations required under this section shall be based upon facts in existence on the day that the application for a building permit to construct, alter, or remodel the hotel is duly filed in the office of the building official with all plans, drawings, and other documents required for its consideration and processing under the terms of the ~~b~~B~~uilding e~~C~~ode~~. In the event that any applicant for a building permit to construct, alter, or remodel a hotel fails to initiate or prosecute the work such that the building permit expires under the terms of the ~~b~~B~~uilding~~

~~eCode~~, then a new building permit shall be required, and its issuance shall be subject to facts in existence at the time that the application is file for the new permit.

27. Amend the definitions of the terms “enterprise” and “highly toxic” in Section 28-222 to read as follows:

Enterprise means a use or activity on, or of, a tract of land or within a building or structure, in whole or in part, that includes ~~storage of, inside and also includes~~ outside storage or use of hazardous materials exceeding the ~~M~~maximum Allowable Q~~quantities limits~~ (MAQs) per control area that constitutes a Group H-1, ~~H-2~~ or ~~H-3~~ occupancy as described in ~~sSection 307 of that volume of the Construction Code known as the City of Houston Building Code~~. The term also includes any Group H-4 occupancy, in whole or in part, that includes storage (both interior and exterior) of hazardous materials exceeding the MAQs per control area as described in *Building Code* ~~sSection 307~~ if any highly toxic material is manufactured, processed, generated, stored or used. Otherwise, Group H-4 occupancies are not included. The term also does not include:

- (1) Any public water or wastewater treatment facility that is being operated under regulations promulgated by state or federal agencies, including but not limited to the United States Environmental Protection Agency and the Texas Commission on Environmental Quality;
- (2) Areas or spaces up to 500 square feet each in research labs operated under the authority of a hospital, college, or university, and classified as H-2, H-3 or H-4, with an aggregate maximum area of ten percent on each floor; or
- (3) Any area or space containing fuel storage for generators, fire pumps, above or underground fuel storage associated with vehicle motor fuel-dispensing facilities.

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Highly toxic material means any substance ~~so~~ defined as such in the *Fire Code*.

28. Amend the definition of the term “scenic area” in Section 28-521 to read as follows:

Scenic area means those areas of the city so designated by city council, as listed in ~~the Sign Code chapter 46 of the building code~~, except that, for purposes of this article, any designated scenic area that has one or more high mast light structures within its boundaries shall not be deemed a scenic area.

29. Amend Section 29-15(a)(1) to read as follows:

- (1) In a manufactured home park which the operator is licensed to operate pursuant to article III of this chapter;

30. Amend the last sentence of Section 29-15(a) to read as follows:

Provided that no manufactured home may be situated or permitted to remain in any place in violation of any valid and applicable deed restriction or covenant running with the land,

or on any site within Districts of Limitations One and Two as those districts are ~~defined~~ established in the *Fire Code*.

31. Amend Section 29-25(c) to read as follows:

- (c) The burden of proof at such hearing shall be upon the building official. If the general appeals board determines that grounds for revocation exist, it shall order the hardship permit revoked by written decision. A copy thereof shall be furnished to the hardship permittee, and appeal thereof may be made to the city council by complying with the appeal procedure in the *Building Code*.

32. Amend Section 29-37(b)(2) to read as follows:

- (2) A permit has been obtained for reconnection of any electrical utilities and the building official has found, upon inspection, that the exterior wiring service on the manufactured home is in such condition that it may be safely connected to the electrical utility services. The fee specified in the Construction ~~Building~~-Code for a reconnection fee shall be imposed for the issuance of a permit under this item.

33. Amend Section 29-74 to read as follows:

Sec. 29-74. Fee to be paid.

All applications shall be accompanied by the deposit of the applicable fees as specified in the Construction ~~Building~~-Code. The fees set out in chapters 41 and 42 of the this Code of Ordinances shall also be applicable to plans for manufactured home parks as though a manufactured home park were a subdivision.

34. Amend Section 29-109 to read as follows:

Sec. 29-109. Gas distribution system; general requirements.

Gas equipment and installation within a manufactured home park shall be designed and constructed in accordance with the ~~City of Houston Plumbing Code~~, the appropriate provisions of the ~~City of Houston Fire Code~~, and the standards adopted by reference in those codes.

35. Amend Subsections (b) and (e) of Section 29-124 to read as follows:

- (b) Portable fire extinguishers rated for Classes A, B and C shall be kept in service buildings and at other locations conveniently and readily accessible for use by all occupants and shall be maintained in good operating condition. Their capacity shall not be less than the underwriters laboratory (U.L.) rating of 2A 10BC. However, standpipes may be provided as an alternative to these fire extinguishers when approved by the fire marshal pursuant to the provisions of the ~~f~~Fire eCode.

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- (e) Storage and handling of flammable liquids. In parks in which gasoline, oil, paints, or other flammable liquids are stored and/or dispensed, their handling and storage shall comply with the city ~~f~~Fire eCode.

36. Amend the last sentence of Section 29-148(a) to read as follows:

The applicant for authorization for connection of either manufactured homes or recreational vehicles, or both, to electricity shall submit with the application the annual fee for such authorization as set out in section 29-160 of this Code, and shall pay all applicable permit fees set out in the Construction Code ~~building code~~.

37. Amend Section 29-160(a) to read as follows:

- (a) In addition to the fees set forth in this section, all other applicable inspection and permit fees as set forth in this Code and in the ~~Building~~ Construction Code must be tendered to the building official with the application.

38. Amend Section 32-231(b)(5) to read as follows:

- (5) The vendor shall not load or unload the mobile food unit or any food items while the mobile food unit or a vehicle transporting the mobile food unit is parked on a roadway. In no case shall a mobile food unit be positioned on a sidewalk so as to occupy more than 40 percent of the width of that sidewalk. In addition, all mobile food units shall comply with clearances required from structures to utility lines as provided the Construction Code ~~in a nationally recognized building code~~.

39. Amend Section 33-236(j) to read as follows:

- (j) No person shall alter, rehabilitate, restore, construct, relocate or demolish any landmark, protected landmark, or any building, structure or object in an historic district or archaeological site, or excavate any archaeological site, without complying with the applicable provisions of this article. It is a defense to prosecution under this section that the Director of Houston Public Works or a deputy director or an assistant director having supervisory responsibilities over the issuance of building permits has determined (1) that the work to be performed is necessary to correct conditions that are in violation of the life safety requirements for existing buildings as set forth in ~~Chapter 34 and Appendix L of the Existing Building Code, including Appendix D thereto~~; (2) that the work to be performed is the only means for achieving compliance with the life safety requirements; and (3) that, based upon the nature of the life safety violations and the risks associated with their continuation, the provisions of this article should be waived to the extent of the life safety requirements.

40. Amend Section 40-7(b) to read as follows:

- (b) *Encroachment permit required.* A subdivision identification marker installed after December 31, 2008, in the median of a public street right-of-way or in unimproved excess public street right-of-way of a street within, abutting or adjacent to the subdivision must have an encroachment permit issued by the city engineer's office and shall not be subject to the requirements of the ~~Houston Sign Code (Chapter 46 of the City of Houston Building Code)~~.

41. Amend Section 40-10.1(b)(3) to read as follows:

- (3) *Canopy* shall mean an awning as defined by the ~~city's~~ Building Code.

42. Amend Section 40-10.1(d)(5)m to read as follows:

- m. The licensee shall not install, erect or maintain any signs not permitted by the Sign Code ~~city sign code (chapter 46 of the City of Houston Building Code)~~.

43. Amend Section 40-263(10) to read as follows:

- (10) A food vendor applicant shall state whether the mobile food unit will be fueled by liquefied petroleum gas. If so, the applicant shall provide proof that he holds a current and valid permit for the use of liquefied petroleum gas on the mobile unit issued pursuant to ~~article 82~~ Chapter 61 of the *Fire Code*.

44. Amend Section 40-483(j) to read as follows:

- (j) The applicant may appeal the denial or revocation of a permit by delivering a written request for an appeal to the director not more than fourteen days after the date the written notice of denial or revocation. Appeals of denial or revocation of a permit will be handled pursuant to the procedures set forth in ~~s~~Section 117 of the ~~city's~~ Building Code.

45. Amend Subsections (b) and (c) of Section 41-24 to read as follows:

- (b) After the recordation of a subdivision plat, the building official may change a site address if a property owner or the property owner's agent submits to the building official a written request and payment for each site address to be changed of the fee established in ~~s~~Section 118.1.13-117.1.14 of the *Building Code* for which the fee amount is stated in the city fee schedule.
- (c) For property that is not located in a recorded subdivision plat, the building official may change a site address if a property owner or the property owner's agent submits to the building official a written request and payment for each site address to be changed of the fee established in ~~s~~Section 118.1.13-117.1.14 of the *Building Code* for which the fee amount is stated in the city fee schedule.

46. Amend Section 42-145(a)(5) to read as follows:

- (5) Any parking space in a subdivision containing a shared driveway shall provide sufficient space for turning movements as depicted on the drawings of the space requirements for off street parking referenced in Section 3112.4.5 of the *Construction Code*;

47. Amend Section 42-234(b) to read as follows:

- (b) Parking space arrangements, sizes of spaces and driveway openings shall be in conformance with the ~~Building Code~~ Building Code. A parking space shall not be in tandem

unless the tandem parking space is reserved for use by occupants of the same residential unit to which the space is in tandem.

48. Amend the definitions of the terms “pool,” “residential pool or spa,” and “spa” in Section 43-2 to read as follows:

Pool means any man-made permanently installed or non-portable structure, basin, chamber, or tank containing or designed to contain a body of water to be used for human swimming, diving, aquatic sports, or other aquatic activity, including any pool that is categorized as a Class A, Class B, or Class C or Class D public pool pursuant to Section 265.182(9976) of Title 25 of the Texas Administrative Code, regardless of whether a fee is charged for use, and regardless of whether its use has been abandoned or discontinued; provided, however, that this term does not include a residential pool or spa or a pool that has been abated.

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Residential pool or spa means a pool or spa that is located on private property under the control of the property owner or the owner's tenant and that is intended for use by not more than two resident families and their guests, including a pool or a spa serving only a single-family home or duplex. ~~any man-made structure, basin, chamber, or tank containing or designed to contain a body of water to be used for human swimming, diving, aquatic sports, or other aquatic activity and that is located at a single-family home or a duplex.~~

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Spa means a body of water intended for the immersion of persons in either hot or cold water, circulated in a closed system, and not intended to be drained and refilled after each use. A spa can include a filter, a heater, a pump, a blower and water sanitizing equipment. The term includes a swim spa or exercise spa, including any spa that is categorized as a Class A, Class B or Class C spa pursuant to Section 265.182 (94) of Title 25 of the Texas Administrative Code. ~~a constructed permanent or portable structure that contains or is designed to contain hot or cold water and (i) is two feet or more in depth, (ii) has a surface area of 250 square feet or less or a volume of 3,250 gallons or less, (iii) is intended to be used for bathing or other recreational uses by human beings, (iv) is not drained and refilled after each use, and (v) includes such elements as hydrojet circulation, mineral baths, air induction bubbles, or any combination thereof; regardless of whether its use has been abandoned or discontinued; provided, however, that this term does not include a residential pool or spa or a spa that has been abated.~~

49. Amend Section 43-6 to read as follows:

Sec. 43-6.—Facilities Aquatic structures: minimum standards.

(a) Except as provided in subsection (b) of this section, the Gcity adopts minimum standards for facilities aquatic structures that are identical to or stricter than those pool safety standards contained in the following state and federal laws, all of which are incorporated herein:

- (1) The VGBA;
- (2) Chapter 757 of the Texas Health and Safety Code, as it relates to facilities; and

- (3) Subchapters L and M of Chapter 265 of Title 25 of the Texas Administrative Code, as it relates to facilities; and
- (4) That volume of the Construction Code known as the *Swimming Pool and Spa Code*.
- (b) The provisions of Section ~~265.208~~ 265.211 of Title 25 of the Texas Administrative Code shall not apply to enforcement of this chapter.
- (c) The operator of an facility-aquatic structure shall maintain the facility-aquatic structure in accordance with the pool safety standards adopted by the City pursuant to subsection (a) of this section. Any inconsistency between the requirements of this article and subsection (a) shall be resolved in favor of the more restrictive requirement.

50. Amend Subsections (g) and (h) of Section 43-9 to read as follows:

- (g) The health officer shall inspect an aquatic structure that has been constructed, remodeled or altered prior to its operation to determine compliance with the approved plans and specifications and with all other applicable requirements. A preoperational inspection fee will be assessed in conjunction with the inspection of an facility-aquatic structure. An aquatic structure that fails to pass this inspection may not be operated or used.
- (h) No permit shall be issued to or renewed for any facility-aquatic structure for which outstanding fees are owed to the city.

51. Amend Subsections (b) and (c) of Section 43-33 to read as follows:

- (b) The operator of an facility-aquatic structure that is regulated by Chapter 757 of the Texas Health and Safety Code shall at all times maintain an enclosure that complies with those provisions of that chapter adopted by reference in section 43-6(a) of this Code, and the city may remedy violations of this subsection in accordance with the provisions of Section 214.101 of the Local Government Code, including the placement of a lien against the property to recover expenses incurred pursuant to remediation.
- (c) The operator of an facility-aquatic structure that is regulated by Subchapter L of Chapter 265 of Title 25 of the Texas Administrative Code shall at all times maintain upon such property an enclosure that complies with the requirements of Section 265.203~~9~~ of that subchapter adopted by reference in section 43-6(a) of this Code.

52. Amend Sections 43-35, 43-36, and 43-37 to read as follows:

Sec. 43-35. Enforcement and closures.

- (a) The health officer is authorized to issue citations charging the violation of any of the provisions of this chapter, the *Swimming Pool and Spa Code*, and, to the extent authorized or permitted by law, any applicable state laws, rules or regulations regarding pool safety. In addition, the health officer may order an facility-aquatic structure closed if the health officer determines:
 - (1) That it is being operated without a valid permit; or

- (2) That the continued operation of the aquatic structure will constitute a hazard to the health or safety of persons using the facility-aquatic structure or those in close proximity to the facility-aquatic structure.
- (b) Written notice of a closure order shall be provided to the operator of an aquatic structure. The notice shall:
- (1) Set forth the specific conditions at the aquatic structure that constitute a hazard to public health; or
 - (2) Set forth the specific conditions at the aquatic structure that are in violation of this chapter, the *Swimming Pool and Spa Code*, federal or state laws, or rules or regulations regarding pool safety.
 - (3) Be sent by personal hand delivery, certified mail, or private delivery service, return receipt requested. If there is documented proof that these methods are not successful, the written notice of a closure order may be sent to the operator by email.
- ~~(b)~~(c) Upon closure of an facility-aquatic structure pursuant to this section, the person in charge of the facility-aquatic structure shall immediately:
- (1) Properly post and maintain signs at all entrances to the facility-aquatic structure that state: "CLOSED UNTIL FURTHER NOTICE"; and
 - (2) Lock all doorways and gates that form a part of the facility-aquatic structure enclosure, so that the facility-aquatic structure is only accessible to maintenance or authorized personnel for repairs.
- Signs required to be posted under this section shall be a minimum size of 8½ inches by 11 inches. The lettering shall be of a contrasting color to the background and not less than one inch in height. Signs shall be positioned so that they are readily visible to a person seeking entry to the facility-aquatic structure.
- ~~(c)~~(d) If the person in charge of the facility-aquatic structure is absent or fails or refuses to comply with the requirements of subsection (b), the health officer may post signs and secure the premises in accordance with this section.
- ~~(d)~~(e) A person commits an offense under this section if the person:
- (1) Removes, defaces, alters, covers or renders unreadable a closure sign posted by the health officer; or
 - (2) Uses an facility-aquatic structure subject to a closure order for swimming, diving or bathing; or
 - (3) Is a person in charge of an facility-aquatic structure subject to a closure order and knowingly allows persons to use the facility-aquatic structure for swimming, diving or bathing; or
 - (4) Is a person in charge of an facility-aquatic structure subject to a closure order and fails to comply with the requirements of this section.
- (f) The health officer shall notify the operator of a timeframe for reinspection after the health officer issues the closure order. If, upon reinspection any time before the end of the timeframe provided, it is found that the violations have been corrected, the health officer will lift the closure order. If the violations have not been corrected within the timeframe, and the operator has not received an approved extension,

the closure order shall remain in place and the health officer may issue additional citations.

- ~~(e)~~(g) An operator may appeal a closure order within three-10 days after the issuance receipt of notice of the closure order by filing a written statement with the health officer setting forth the reasons why the closure order should be rescinded. The filing of an appeal does not stay-postpone or halt the closure order.
- ~~(f)~~ A facility closed by the health officer shall not resume operation until a reinspection by the health officer establishes that the facility is in compliance with this chapter, the Swimming Pool and Spa Code, and all applicable state or federal laws and rules and regulations regarding pool safety.
- ~~(h)~~ If an appeal is not timely filed, the closure order shall remain in place pending the results of the reinspection scheduled pursuant to subsection (f) of this section. If the appeal is timely filed, a hearing shall be scheduled with written notice provided to the operator by personal hand delivery, certified mail, or private delivery service within 5 days after receipt of the appeal. If there is documented proof that these methods are not successful, the written notice may be sent to the operator by email. The notice shall set forth:

 - (1) That a hearing will be held before a hearing officer;
 - (2) The date, time, and place of the hearing; and
 - (3) That the operator may appear in person or virtually, may be represented by counsel, and may present testimony and cross-examine all witnesses. The hearing shall be held not later than 10 days after receipt of the appeal.
- ~~(i)~~ All hearings shall be conducted by a person designated by the director of the department, who shall be referred to as the hearing officer. The director of the department shall not designate any person to perform the duties of hearing officer under this section who has participated in the inspection of the aquatic structure, or has prior knowledge of the allegations or circumstances discovered in the inspection or inspections, except that the person designated as hearing officer may, prior to the hearing, receive a copy of the closure order given to the operator.
- ~~(j)~~ All hearings shall be conducted under rules consistent with the informal nature of the proceedings; provided, however, the following rules shall apply:

 - (1) Each party shall have the right to representation by a licensed attorney, although an attorney is not required.
 - (2) Each party may present witnesses on his own behalf.
 - (3) Each party has the right to cross-examine all witnesses.
 - (4) The hearing officer may consider only the evidence presented at the hearing in rendering the order.
- ~~(k)~~ If the operator fails to appear at the hearing at the time, place, and date specified, the health officer shall present sufficient evidence to establish a prima facie case showing violation of this chapter or the *Swimming Pool and Spa Code*, or conditions constituting a hazard to public health that formed the basis of the closure order.
- ~~(l)~~ If the hearing officer determines that the aquatic structure was operated in violation of this chapter, the *Swimming Pool and Spa Code*, federal or state laws, rules or

regulations regarding pool safety, or constituted a hazard to public health, the hearing officer shall make written findings of fact and shall affirm the closure order. If the hearing officer finds that the public interest will be adequately protected by a warning or other penalties authorized under this chapter, he may rescind the closure order and impose such penalties. A copy of the findings and order of the hearing officer shall be sent by personal hand delivery, certified mail, or private delivery service, return receipt requested, to the operator. If there is documented proof that these methods are not successful, the findings and order may be sent to the operator by email.

Sec. 43-36. Permit suspension.

- (a) The health officer may, upon notice to the permit holder, suspend a permit if the operator of an facility-aquatic structure does not comply with the requirements of this chapter or the *Swimming Pool and Spa Code*, or if the operation of the facility aquatic structure otherwise constitutes a hazard to public health. Suspension is effective upon service of the notice required by subsection (b) below. Upon issuance of a permit suspension, active pool operations shall immediately cease, and the permit shall be removed from the facility-aquatic structure by the health officer and retained at the department until the suspension has terminated.
- (b) Written notice of a permit suspension shall be provided to the operator of an facility aquatic structure by personal hand delivery or, certified mail, or private delivery service, return receipt requested. If there is documented proof that these methods are not successful, the written notice may be sent to the operator by email. The notice shall set forth:
 - (1) The specific conditions at the facility aquatic structure that are in violation of this chapter, the *Swimming Pool and Spa Code*, in violation of or federal or state laws, rules or regulations regarding pool safety, or that constitute a hazard to public health;
 - (2) That a hearing will be held before a hearing officer;
 - (3) The date, time and place of the hearing; and
 - (4) That the operator may appear in person or virtually, may be represented by counsel, and may present testimony and cross-examine all witnesses. The hearing shall be held not later than ten days after the date the permit is suspended.
- (c) A permit suspension hearing under this section shall be held in accordance with the procedures set forth in section 43-35 of this Code. All hearings shall be conducted by a person designated by the director, who shall be referred to as the hearing officer. The director shall not designate any person to perform the duties of hearing officer under this section who has participated in the inspection of the facility, or has prior knowledge of the allegations or circumstances discovered in the inspection or inspections, except that the person designated as hearing officer may, prior to the hearing, receive a copy of the notice given to the operator.
- (d) ~~All hearings shall be conducted under rules consistent with the informal nature of the proceedings; provided, however, the following rules shall apply:~~
 - (1) ~~Each party shall have the right to representation by a licensed attorney, although an attorney is not required.~~
 - (2) ~~Each party may present witnesses on his own behalf.~~

- (3) ~~Each party has the right to cross-examine all witnesses.~~
- (4) ~~The hearing officer may consider only the evidence presented at the hearing in rendering the order.~~
- (e)(d) If the operator fails to appear at the hearing at the time, place, and date specified, the health officer shall present sufficient evidence to establish a prima facie case showing violation of this chapter or the *Swimming Pool and Spa Code*, or conditions constituting a hazard to public health that formed the basis of the suspension of the permit.
- (f)(e) If the hearing officer determines that the ~~facility~~ aquatic structure was operated in violation of this chapter or the *Swimming Pool and Spa Code*, or constituted a hazard to public health, the hearing officer shall make written findings of fact and shall affirm the permit suspension until all violations of this chapter are corrected and any conditions constituting a hazard to public health are eliminated. If the hearing officer finds that the public interest will be adequately protected by a warning or other penalties authorized under this chapter, he may order the permit to be reinstated and impose such penalties. A copy of the findings and order of the hearing officer shall be sent by personal hand delivery, certified mail, or private delivery service, return receipt requested, to the operator. If there is documented proof that these methods are not successful, the findings and order may be sent to the operator by email.
- (g)(f) Whenever the reason for a suspension no longer exists, the operator shall notify the health officer that the conditions under which the permit was suspended have been corrected and request a reinspection. The reinspection shall be conducted as soon as possible after the request is received and, in any event, no later than three regular working days after the receipt of the request.

Sec. 43-37. Permit revocation.

- (a) A permit may be revoked for up to 180 days if:
- (1) The person in charge or his agents or employees fail or refuse to permit an inspection of the ~~facility~~ aquatic structure by a health officer; or
 - (2) The department has found three or more violations of the applicable portions of this chapter, the *Swimming Pool and Spa Code*, or of federal or state laws, rules or regulations regarding pool safety within the preceding twelve-month period.
- (b) Prior to the revocation of a permit, written notice shall be provided to the operator by ~~personal hand delivery or by~~ certified mail, or private delivery service, return receipt requested. If there is documented proof that these methods are not successful, the written notice may be sent to the operator by email. The notice shall set forth:
- (1) The grounds on which the city will seek revocation of the permit, including the specific violations of this chapter, the *Swimming Pool and Spa Code*, or of federal or state laws regulating pool safety on which the city will rely in seeking revocation of the permit;
 - (2) That a hearing will be held before a hearing officer;
 - (3) The date, time and location of the hearing; and

- (4) That the operator may appear in person or virtually, may be represented by counsel and may present testimony and cross-examine all witnesses. The hearing shall be held not later than ten days after the date the permit revocation notice is received.
- (c) A permit revocation hearing under this section shall be held in accordance with the procedures set forth in section 43-356 of this Code.
- (d) If the hearing officer determines that there are grounds for revocation of the permit, the hearing officer shall make written findings of fact and shall order the revocation of the permit for a period of not more than 180 days. A copy of the findings and order of the hearing officer shall be sent by personal hand delivery, certified mail, or private delivery service, return receipt requested, to the operator. If there is documented proof that these methods are not successful, the findings and order may be sent to the operator by email.
- (e) All operation of an facility-aquatic structure shall cease immediately upon receipt of service of written notice that the permit for that facility-aquatic structure has been revoked pursuant to subsection (d), and the health officer shall physically remove the permit from the premises.
- (f) Reinstatement of a permit that has been revoked shall require the operator to resubmit an application and payment of a ~~repay the~~ permit fee as if it were an initial application. No new permit application shall be considered for an facility-aquatic structure where the hearing officer has revoked the permit ~~has been revoked until the expiration of the revocation period.~~

53. Amend Section 47-14(d)(3) to read as follows:

- (3) In the case of sewer service, the applicant has paid the prescribed ~~p~~Plumbing e~~Code~~ inspection fees and the director has received written evidence from the appropriate plumbing official that the plumbing system at the premises to be served has been inspected by the city and is in compliance with the ~~city's p~~Plumbing e~~Code~~; and

54. Amend the second-to-last sentence of Section 47-14(d) to read as follows:

Notwithstanding the foregoing, in the case of a plumbing system which is not in existence at the time the application is considered for approval, the director may approve such application upon the express condition that the plumbing system at the premises to be served be inspected by the city and found to be in compliance with the ~~city's p~~Plumbing e~~Code~~ before any connection to city water or sewer facilities is made.

55. Amend the definition of the term "industrial waste" in Section 47-187(d) to read as follows:

Industrial waste. Any waterborne solid, liquid or gaseous waste resulting from any production, industrial, manufacturing, service, or food processing operation or from the development, recovery, or processing of any natural resource including waste that is required to be pretreated by this article or the ~~city's p~~Plumbing e~~Code~~. Included in this definition is any wastewater stream subject to pretreatment standards or requirements at 40 C.F.R. Parts 405—471.

56. Amend Section 47-513(a) to read as follows:

- (a) Commercial, institutional, and industrial facilities, including, but not limited to, restaurants, cafeterias, bars, hotels and motels, hospitals, sanitariums, manufacturing facilities, nursing homes, prisons, private and public schools, car washes, truck washes or other establishments where FOG, grit, silt or clay may be generated for which an application for a building permit is submitted after August 31, 2006, shall be required to design, install, operate and maintain an interceptor complying with the ~~City of Houston Plumbing Code~~ and install a sample well to allow access for inspection and sampling by the health officer.

57. Amend Section 47-604(b) to read as follows:

- (b) At the time a stop work order is issued, the person performing the work and the permit holder shall be given notice of a right to a hearing on the matter pursuant to ~~section 116.2~~ Section 117.2 of the *Building Code* for permits authorized by that code or pursuant to section 47-608 of this Code for all other construction permits. Upon request, such a hearing shall be held within three business days unless the permit holder or person who was performing the work requests an extension of time. Any stop work order that has been issued shall remain in effect pending any hearing that has been requested unless the stop work order is withdrawn by the building official or the city engineer.

58. Amend Section 47-613(d) to read as follows:

- (d) If the authorized city official determines that a reinspection is necessary to ascertain that the conditions responsible for a violation no longer exist, the operator shall be assessed the reinspection fee established in ~~s~~Section 118.1.5 of the *Building Code* in conjunction with that reinspection, and a hold will be placed on all permits and inspections on the site.

EXHIBIT J

**FEES FOR ONE- AND TWO-FAMILY RESIDENTIAL DWELLINGS AND
TOWNHOUSES (calculated by square feet)**

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IA Construction Tier 1: BASE CHARGE	118.2.1, 602.1, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IA Construction Tier 2: BASE CHARGE	118.2.1, 602.1, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IA Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 44.9178645 square feet	118.2.1, 602.1, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IA Construction Tier 3: BASE CHARGE	118.2.1, 602.1, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IA Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 962.5256673 square feet	118.2.1, 602.1, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IA Construction Tier 4: BASE CHARGE	118.2.1, 602.1, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IA Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 1,283.3675565 square feet	118.2.1, 602.1, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type IA Construction Tier 5: BASE CHARGE	118.2.1, 602.1, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IA Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 1,925.0513347 square feet	118.2.1, 602.1, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IA Construction Tier 6: BASE CHARGE	118.2.1, 602.1, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IA Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 3,208.4188912 square feet	118.2.1, 602.1, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IA Construction Tier 7: BASE CHARGE	118.2.1, 602.1, Table 601	\$3,917.36

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type I Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 6,416.8377823 square feet	118.2.1, 602.1, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IA Construction Tier 8: BASE CHARGE	118.2.1, 602.1, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IA Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 32,084.1889117 square feet	118.2.1, 602.1, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type IA Construction Tier 9: BASE CHARGE	118.2.1, 602.1, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IA Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 320,841.8891170 square feet	118.2.1, 602.1, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IB Construction Tier 1: BASE CHARGE	118.2.1, 602.1, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IB Construction Tier 2: BASE CHARGE	118.2.1, 602.1, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IB Construction Tier 2: —In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 46.1710969 square feet	118.2.1, 602.1, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IB Construction Tier 3: BASE CHARGE	118.2.1, 602.1, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IB Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 989.3806477 square feet	118.2.1, 602.1, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IB Construction Tier 4: BASE CHARGE	118.2.1, 602.1, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IB Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 1,319.1741970 square feet	118.2.1, 602.1, Table 601	\$4.16

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IB Construction Tier 5: BASE CHARGE	118.2.1, 602.1, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IB Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 1,978.7612954 square feet	118.2.1, 602.1, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IB Construction Tier 6: BASE CHARGE	118.2.1, 602.1, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IB Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 3,297.9354924 square feet	118.2.1, 602.1, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IB Construction Tier 7: BASE CHARGE	118.2.1, 602.1, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IB Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 6,595.8709848 square feet	118.2.1, 602.1, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IB Construction Tier 8: BASE CHARGE	118.2.1, 602.1, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IB Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 32,979.3549239 square feet	118.2.1, 602.1, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type IB Construction Tier 9: BASE CHARGE	118.2.1, 602.1, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IB Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 329,793.5492381 square feet	118.2.1, 602.1, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 1: BASE CHARGE	118.2.1, 602.2, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 2: BASE CHARGE	118.2.1, 602.2, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL	118.2.1, 602.2, Table 601	\$4.75

Name	Description	Statutory Authority	Amount
	CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 47.3516877 square feet		
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 3: BASE CHARGE	118.2.1, 602.2, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 1,014.6790232 square feet	118.2.1, 602.2, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 4: BASE CHARGE	118.2.1, 602.2, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 1,352.9053643 square feet	118.2.1, 602.2, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 5: BASE CHARGE	118.2.1, 602.2, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 2,029.3580464 square feet	118.2.1, 602.2, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 6: BASE CHARGE	118.2.1, 602.2, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 3,382.2634107 square feet	118.2.1, 602.2, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 7: BASE CHARGE	118.2.1, 602.2, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 6,764.5268213 square feet	118.2.1, 602.2, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 8: BASE CHARGE	118.2.1, 602.2, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 33,822.6341068 square feet	118.2.1, 602.2, Table 601	\$1.77

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 9: BASE CHARGE	118.2.1, 602.2, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 338,226.3406740 square feet	118.2.1, 602.3, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 1: BASE CHARGE	118.2.1, 602.2, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 2: BASE CHARGE	118.2.1, 602.2, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 48.5807481 square feet	118.2.1, 602.2, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 3: BASE CHARGE	118.2.1, 602.2, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 1,041.0160316 square feet	118.2.1, 602.2, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 4: BASE CHARGE	118.2.1, 602.2, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 1,388.0213756 square feet	118.2.1, 602.2, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 5: BASE CHARGE	118.2.1, 602.2, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 2,082.0320633 square feet	118.2.1, 602.2, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 6: BASE CHARGE	118.2.1, 602.2, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 3,470.0534388 square feet	118.2.1, 602.2, Table 601	\$3.56

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 7: BASE CHARGE	118.2.1, 602.2, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 6,910.1068776 square feet	118.2.1, 602.2, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 8: BASE CHARGE	118.2.1, 602.2, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 34,700.5343883 square feet	118.2.1, 602.2, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 9: BASE CHARGE	118.2.1, 602.2, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 347,005.3438823 square feet	118.2.1, 602.2, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 1: BASE CHARGE	118.2.1, 602.3, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 2: BASE CHARGE	118.2.1, 602.3, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 50.3814596 square feet	118.2.1, 602.3, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 3: BASE CHARGE	118.2.1, 602.3, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 1,079.6027062 square feet	118.2.1, 602.3, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 4: BASE CHARGE	118.2.1, 602.3, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL	118.2.1, 602.3, Table 601	\$4.16

Name	Description	Statutory Authority	Amount
	CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 1,439.4702750 square feet		
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 5: BASE CHARGE	118.2.1, 602.3, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 2,159.2054124 square feet	118.2.1, 602.3, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 6: BASE CHARGE	118.2.1, 602.3, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 3,598.6756873 square feet	118.2.1, 602.3, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 7: BASE CHARGE	118.2.1, 602.3, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 7,197.3513747 square feet	118.2.1, 602.3, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 8: BASE CHARGE	118.2.1, 602.3, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 35,986.7568735 square feet	118.2.1, 602.3, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 9: BASE CHARGE	118.2.1, 602.3, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 359,867.5687347 square feet	118.2.1, 602.3, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 1: BASE CHARGE	118.2.1, 602.3, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 2: BASE CHARGE	118.2.1, 602.3, Table 601	\$41.62

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 51.7483551 square feet	118.2.1, 602.3, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 3: BASE CHARGE	118.2.1, 602.3, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 1,108.8933244 square feet	118.2.1, 602.3, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 4: BASE CHARGE	118.2.1, 602.3, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 1,478.5244327 square feet	118.2.1, 602.3, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 5: BASE CHARGE	118.2.1, 602.3, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 2,217.7866489 square feet	118.2.1, 602.3, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 6: BASE CHARGE	118.2.1, 602.3, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 3,696.3110815 square feet	118.2.1, 602.3, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 7: BASE CHARGE	118.2.1, 602.3, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 7,392.6221631 square feet	118.2.1, 602.3, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 8: BASE CHARGE	118.2.1, 602.3, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or	118.2.1, 602.3, Table 601	\$1.77

Name	Description	Statutory Authority	Amount
	fraction thereof after the first 36,963.1108154 square feet		
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 9: BASE CHARGE	118.2.1, 602.3, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 369,631.1081540 square feet	118.2.1, 602.3, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 1: BASE CHARGE	118.2.1, 602.4, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 2: BASE CHARGE	118.2.1, 602.4, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 49.3931696 square feet	118.2.1, 602.4, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 3: BASE CHARGE	118.2.1, 602.4, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 1,058.4250635 square feet	118.2.1, 602.4, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 4: BASE CHARGE	118.2.1, 602.4, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 1,411.2334180 square feet	118.2.1, 602.4, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 5: BASE CHARGE	118.2.1, 602.4, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 2,116.8501270 square feet	118.2.1, 602.4, Table 601	\$3.86

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 6: BASE CHARGE	118.2.1, 602.4, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 3,528.0835450 square feet	118.2.1, 602.4, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 7: BASE CHARGE	118.2.1, 602.4, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 7,056.1670900 square feet	118.2.1, 602.4, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 8: BASE CHARGE	118.2.1, 602.4, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 35,280.8354502 square feet	118.2.1, 602.4, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 9: BASE CHARGE	118.2.1, 602.4, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 352,808.3545018 square feet	118.2.1, 602.4, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type VA Construction Tier 1: BASE CHARGE	118.2.1, 602.5, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type VA Construction Tier 2: BASE CHARGE	118.2.1, 602.5, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type VA Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 53.8295909 square feet	118.2.1, 602.5, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type VA Construction Tier 3: BASE CHARGE	118.2.1, 602.5, Table 601	\$721.75

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type VA Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 1,153.4912334 square feet	118.2.1, 602.5, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type VA Construction Tier 4: BASE CHARGE	118.2.1, 602.5, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type VA Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 1,537.9883113 square feet	118.2.1, 602.5, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type VA Construction Tier 5: BASE CHARGE	118.2.1, 602.5, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type VA Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 2,306.9824669 square feet	118.2.1, 602.5, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type VA Construction Tier 6: BASE CHARGE	118.2.1, 602.5, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type VA Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 3,844.9707782 square feet	118.2.1, 602.5, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type VA Construction Tier 7: BASE CHARGE	118.2.1, 602.5, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type VA Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 7,689.9415564 square feet	118.2.1, 602.5, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type VA Construction Tier 8: BASE CHARGE	118.2.1, 602.5, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type VA Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 38,449.7077823 square feet	118.2.1, 602.5, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type VA Construction Tier 9: BASE CHARGE	118.2.1, 602.5, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type VA Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or	118.2.1, 602.5, Table 601	\$1.19

Name	Description	Statutory Authority	Amount
	fraction thereof after the first 384,497.0778222 square feet		
Building Code - Structural	Structural Building Permit Type VB Construction Tier 1: BASE CHARGE	118.2.1, 602.5, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type VB Construction Tier 2: BASE CHARGE	118.2.1, 602.5, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type VB Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 57.1615221 square feet	118.2.1, 602.5, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type VB Construction Tier 3: BASE CHARGE	118.2.1, 602.5, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type VB Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 1,224.8897599 square feet	118.2.1, 602.5, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type VB Construction Tier 4: BASE CHARGE	118.2.1, 602.5, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type VB Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 1,633.1863466 square feet	118.2.1, 602.5, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type VB Construction Tier 5: BASE CHARGE	118.2.1, 602.5, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type VB Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 2,449.7795198 square feet	118.2.1, 602.5, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type VB Construction Tier 6: BASE CHARGE	118.2.1, 602.5, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type VB Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 4,082.9658664 square feet	118.2.1, 602.5, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type VB Construction Tier 7: BASE CHARGE	118.2.1, 602.5, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type VB Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL	118.2.1, 602.5, Table 601	\$3.26

Name	Description	Statutory Authority	Amount
	CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 8,165.9317328 square feet		
Building Code - Structural	Structural Building Permit Type VB Construction Tier 8: BASE CHARGE	118.2.1, 602.5, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type VB Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 40,829.6586641 square feet	118.2.1, 602.5, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type VB Construction Tier 9: BASE CHARGE	118.2.1, 602.5, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type VB Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 408,296.5866405 square feet	118.2.1, 602.5, Table 601	\$1.19

City of Houston, Texas, Ordinance No. 2022- 234

AN ORDINANCE AMENDING ORDINANCE NO. 2021-1037 RELATING TO THE ADOPTION OF CONSTRUCTION CODES FOR THE PROTECTION AND PRESERVATION OF LIVES AND PROPERTY FROM FIRE AND OTHER PERILS TO CORRECT ERRORS; CONTAINING FINDINGS AND OTHER PROVISIONS RELATING TO THE FOREGOING SUBJECT; PROVIDING FOR SEVERABILITY; AND DECLARING AN EMERGENCY.

* * * * *

WHEREAS, by Ordinance No. 2021-1037 adopted on December 19, 2021 (the "Original Ordinance"), the City adopted Construction Codes, made conforming amendments to the Code of Ordinances, Houston, Texas, (the "City Code"), and established a revised fee structure for certain residential buildings; and

WHEREAS, the Original Ordinance becomes effective April 1, 2022; and

WHEREAS, a drafting error has been discovered in Exhibit C-1 of the Original Ordinance such that certain Appendices would be adopted, rather than not adopted; and

WHEREAS, drafting errors have been discovered in Exhibit I of the Original Ordinance such that some existing City Code text will be deleted unintentionally upon the effective date of the Original Ordinance; and

WHEREAS, errors have been discovered in Exhibit J of the Original Ordinance such that two fees in the City Fee Schedule would be charged in the incorrect amount; and

WHEREAS, the City wishes to amend the Original Ordinance to correct these errors; **NOW, THEREFORE**,

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF HOUSTON, TEXAS:

Section 1. That the findings contained in the preamble of this Ordinance are determined to be true and correct and are hereby adopted as part of this Ordinance.

Section 2. That the second sentence of Section 101.6 of the International Existing Building Code, as shown in Exhibit C-1 of the Original Ordinance, is hereby amended to read as follows:

"Appendix D, including any amendments thereto adopted by this jurisdiction, is hereby adopted and shall be incorporated into and made part of this code."

Wherever in this code reference is made to an appendix, the provisions in the appendix shall not apply unless specifically adopted in this section."

Section 3. That **Exhibit I, Instruction 15**, of the Original Ordinance is hereby amended to read as follows:

"15. Amend Items (4) and (7) of Section 10-298 to read as follows:

- (4) Any building of wooden frame construction wherein any cafe or restaurant business is operated, unless the walls and ceilings of that portion of the building in which the cafe or restaurant is operated are separated from the remainder of the building by one-hour fire-resistive materials ~~as defined in the Building Code~~.

**

- (7) Any lodging house being operated in a two-story building of wooden frame construction; provided, however, that no such lodging house shall constitute a fire hazard if:
 - a. The ceiling of the first floor is separated from the floor of the second by one-hour fire-resistive materials ~~as defined in the Building Code~~; and
 - b. The walls between the rooms are insulated by one-hour fire-resistive materials ~~as defined in the Building Code~~ that extend from ceiling to floor; and
 - c. The stairways, including the doors, platforms, landings, railings and corridors or passageways constructed in connection therewith, in all ways conform to the provisions of the *Building Code*; and
 - d. The floors, walls, and frame of the house are in safe and sound structural condition; and
 - e. The building does not otherwise constitute a fire hazard as defined herein.

Section 4. That **Exhibit I, Instruction 21**, of the Original Ordinance is hereby amended to read as follows:

"21. Amend Section 19-23(a) to read as follows:

- (a) In addition to the remedies provided in section 19-91 of this Code, whenever the city engineer finds that there are grounds for revocation of a floodplain development permit, he shall give written notice to the permittee by personal service or by certified mail, return receipt requested, addressed to the applicant at the address set forth in the floodplain development permit application. That notice may

require that any work on the property currently underway is required to stop immediately, that a stop work order is being issued, and shall set forth:

- (1) The specific grounds upon which the floodplain development permit in question may be revoked;
- (2) The fact that there will be a hearing before the board in which the city will seek the revocation of the floodplain development permit;
- (3) The date, time and place of such hearing; and
- (4) The fact that the permittee may appear in person or be represented by an attorney. "

Section 5. That Exhibit I, Instruction 23, of the Original Ordinance is hereby amended to read as follows:

23. Amend Section 28-37 to read as follows:

"Sec. 28-37. Attention-getting devices.

- (a) As used in this section, attention-getting devices shall mean devices erected, placed or maintained outdoors so as to attract attention to any commercial business, or any goods, products or services available on the premises of a commercial business, including but not limited to the following devices: banners; cut out figures; discs; festooning, including tinsel, strings of ribbons, and pinwheels; inflatable objects, including balloons; non-governmental flags; pennants; propellers; steam- or smoke-producing devices; streamers; whirligigs; wind devices; blinking, rotating, moving, chasing, flashing, glaring, strobe, scintillating, search, flood or spot lights; or similar devices, any of which are located or employed in connection with the conduct of a commercial business. Attention-getting devices shall not include any structure or device that is permitted under the *Houston Sign Code*, ~~Chapter 46 of the *Building Code*~~.
- (b) It shall be unlawful for any person to place, erect, maintain, or display any attention-getting device on any private or public property within the city. No attention-getting device shall be eligible for a permit under the ~~*Houston Sign Code*~~.
- (c) Enforcement of this section shall be the duty of the sign administration division of the Houston Public Works or any law enforcement officer.
- (d) Any person who shall violate any provision of this section shall be guilty of a misdemeanor and shall, upon conviction

thereof, be punished by a fine of not less than \$300.00 and not more than \$500.00 for each violation. Each day in which any violation shall occur shall constitute a separate offense."

Section 6. That **Exhibit J** of City of Houston Ordinance No. 2021-1037 is hereby amended to replace the following items from the table of **FEES FOR ONE- AND TWO-FAMILY RESIDENTIAL DWELLINGS AND TOWNHOUSES** (calculated by square feet shown below:

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 338,226.3406740 square feet	118.2.1, 602.3, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 6,910.1068776 square feet	118.2.1, 602.2, Table 601	\$3.26

are hereby amended to read as follows:

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 338,226.3410674 square feet	118.2.1, 602.3, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 6,940.1068776 square feet	118.2.1, 602.2, Table 601	\$3.26

Section 7. That the City Attorney is hereby authorized to direct the publishers of the codes amended by this Ordinance to make such nonsubstantive changes to the Codes as are necessary to conform to the provisions adopted in this Ordinance, and also to make such changes to the provisions adopted in this Ordinance to conform them to the provisions and conventions of the published Codes.

Section 8. That, if any provision, section, subsection, sentence, clause, or phrase of this Ordinance, or the application of same to any person or set of circumstances, is for any reason held to be unconstitutional, void or invalid, the validity of the remaining portions of this Ordinance or their application to other persons or sets of circumstances shall not be affected thereby, it being the intent of the City Council in adopting this Ordinance that no portion hereof or provision or regulation contained herein shall become inoperative or fail by reason of any unconstitutionality, voidness or invalidity of any other portion hereof, and all provisions of this Ordinance are declared to be severable for that purpose.

Section 9. That there exists a public emergency requiring that this Ordinance be passed finally on the date of its introduction as requested in writing by the Mayor; therefore, this Ordinance shall be passed finally on such date and shall take effect immediately upon its passage and approval by the Mayor.

PASSED AND APPROVED this 30th day of March, 2022.



Mayor of the City of Houston

Prepared by Legal Dept. Deidra Perry
DJP:HNC:asw 3/22/2022 First Assistant City Attorney
Requested by Carol Haddock, Director, Houston Public Works
L.D. File No. 0632100138001

Houston Amendments to the *2015 International Building Code*



Adopted by Ord. No. 2021-1037¹

Passed December 1, 2021²

Effective April 1, 2022³

-
1. The City Secretary shall insert the number of the adopting ordinance.
 2. The City Secretary shall insert the date passage and approval of the adopting ordinance.
 3. The City Secretary shall insert the effective date of the adopting ordinance.

CHAPTER 1

SCOPE AND ADMINISTRATION

[A] 101.1 Title. These regulations shall be known as the City of Houston Building Code of [NAME OF JURISDICTION], hereinafter referred to as “this code,” and also known as the Building Code.

The Construction Code collectively includes this volume and certain other codes, pamphlets, specifications and documents that are adopted in or by reference through the adopting ordinance, City of Houston Ordinance No. 2021-1037⁴, which appears in the preamble of this code. A predecessor document to this code was known as the City of Houston Building Code—General Provisions, and any reference to the City of Houston Building Code—General Provisions in other ordinances or documents of the jurisdiction shall be construed to mean this code. In certain instances, references to the Building Code may be found in ordinances, contracts, and other documents of the jurisdiction. In any instance in which it can be determined from the context or scope of the document, that the reference was intended to include one or more of the codes that now collectively constitute the Construction Code, then it shall be so construed.

[A] 101.2 Scope. The provisions of this code shall apply to the construction, *alteration*, relocation, enlargement, replacement, *repair*, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures, except work located primarily in a public way, public utility towers and poles, mechanical equipment not specifically regulated in this code, and hydraulic flood control structures.

Exception: Except as noted in Section 101.4.8, detached Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress, and their accessory structures not more than three stories above grade plane in height, shall comply with the International Residential Code.

[A] 101.2.1 Appendices. Provisions in the appendices shall not apply unless specifically adopted. Appendices F, J, K, N, and R, including any amendments thereto adopted by this jurisdiction, are hereby adopted, and shall be incorporated into and made part of this code.

[A] 101.3 Intent. The purpose of this code is to establish the minimum requirements to provide a reasonable level of safety, public health and general welfare through structural strength, *means of egress* facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations. The provisions of this code shall not apply to any activity for which local regulation is preempted by federal or state law.

101.3.1 Landlord/tenant. The terms of this code shall not be construed to alter the terms of any lease or other agreement between landlord and tenant or others relating to property that is subject to this code; provided that no provision of any lease or other agreement shall be construed to excuse compliance with this code by any person, including the construction, maintenance, occupancy, or use of any property in violation of this code. It is the intent of this code to identify the parties this jurisdiction will hold responsible for

4. The City Secretary shall insert the number of the adopting ordinance.

compliance with and violations of this code, rather than to determine the rights and liabilities of persons under agreements to which this jurisdiction is not a party.

[A] 101.4 Referenced codes. The other codes listed in Sections 101.4.1 through 101.4.87 and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference. This code includes numerous references to the International Codes, including but not limited to, Fuel Gas, Mechanical, Plumbing, Property Maintenance, Fire, Residential, Energy Conservation, Existing Buildings, and Electrical. For the sake of convenience and cost savings to the public in the preparation of Houston Amendments pages to this code, those references have not been revised unless the text of the provision in which they appear has otherwise been revised by this jurisdiction. Any such references shall be regarded as references to the corresponding code as adopted by this jurisdiction from time to time. This jurisdiction reserves the right to adopt codes based upon promulgations of organizations other than the International Code Council, including but not limited to the Uniform Series Codes, to the extent permitted by state law. Any reference to a specific chapter, section, or provision of a code that has not been adopted by this jurisdiction shall be construed to mean the corresponding provision of the corresponding code as adopted by this jurisdiction.

[A] 101.4.1 Gas. The provisions of the International Fuel Gas Plumbing Code, as defined in Chapter 2 of this code, shall apply to the installation of gas piping from the point of delivery, gas appliances and related accessories as covered in this code. These requirements apply to gas piping systems extending from the point of delivery to inlet connections of appliances and the installation and operation of residential and commercial gas appliances and related accessories.

Exception: The installation of gas piping and gas appliances governed by the Residential Code.

[A] 101.4.2 Mechanical. The provisions of the International Mechanical Code, as defined in Chapter 2 of this code, shall apply to the installation, *alterations, repairs* and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators and other energy-related systems.

Exception: The installation, alterations, repairs and replacement of mechanical systems governed by the Residential Code.

[A] 101.4.3 Plumbing. The provisions of the International Plumbing Code, as defined in Chapter 2 of this code, shall apply to the installation, *alteration, repair* and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances, ~~and where connected to a water or sewage system, and to~~ all aspects of a medical gas system. ~~The provisions of the International Private Sewage Disposal Code shall apply to private sewage disposal systems.~~

Exception: Work governed by the Residential Code.

[A] 101.4.4 Property maintenance. Buildings, structures, premises and the equipment and systems installed therein shall be maintained in accordance with the provisions of the code of record under which the building, structure, premise and equipment and system was installed and ~~the provisions of the International Property Maintenance Code, as defined in Chapter 2 of this code, shall apply to existing structures and premises; equipment and facilities; light, ventilation, space heating, sanitation, life and fire safety hazards; responsibilities of owners, operators and occupants; and occupancy of existing premises and structures.~~

[A] 101.4.5 Fire prevention. The provisions of the *International Fire Code*, as defined in Chapter 2 of this code, shall apply to matters affecting or relating to structures, processes and premises from the hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices; from conditions hazardous to life, property or public welfare in the occupancy of structures or premises; and from the construction, extension, *repair, alteration* or removal of fire suppression, *automatic sprinkler systems* and alarm systems or fire hazards in the structure or on the premises from occupancy or operation.

[A] 101.4.6 Energy. The provisions of the *International Energy Conservation Code*, as defined in Chapter 2 of this code, shall apply to all matters governing the design and construction of buildings for energy efficiency.

[A] 101.4.7 Existing buildings. The provisions of the *International Existing Building Code*, as defined in Chapter 2 of this code, shall apply to matters governing the *repair, alteration*, change of occupancy, *addition* to and relocation of existing buildings.

[A] 101.4.8 Electrical. The provisions of the *Electrical Code*, as defined in Chapter 2 of this code, shall apply to the installation of electrical systems, including *alterations, repairs, replacement, equipment, appliances, fixtures, fittings, and appurtenances thereto.*

[A] 102.1 General. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall prevail. ~~Where, in any specific instance case, different sections of provisions of this code, including adopted appendices, specify different materials, different methods of construction, or other requirements that differ from those provided in the City Code or other volumes of the Construction Code, including adopted appendices, other than the Fire Code and its adopted appendices and standards, the most restrictive shall prevail govern.~~ Where, in any specific instance, provisions of this code, including adopted appendices, specify different materials, different methods of construction, or other requirements that differ from those provided in the *Fire Code*, including its adopted appendices and standards, and the *building official* and the *fire marshal* are unable to mutually reconcile the requirements by issuing a written interpretation, then either of them may refer the matter to the General Appeals Board created under this code, which shall conduct a review of the matter and issue a written code interpretation based upon the apparent intent of the codes involved. Notwithstanding any other provision, interpretations that are issued by the General Appeals Board shall not be subject to further appeal.

[A] 102.6 Existing and annexed structures. The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as otherwise specifically provided in this code, the *International Existing Building Code*, the *International Property Maintenance Code* or the *International Fire Code*.

[A] 102.6.2 Buildings previously occupied. The legal occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as otherwise specifically provided in this code, the ~~*International Fire Code*, *International Property Maintenance Code*~~, or as is deemed necessary by the *building official* for the general safety and welfare of the occupants and the public.

102.6.3 Existing structures. A building in existence within the *jurisdiction* at the time of the adoption of this code may have its existing use and occupancy continued if:

1. Such use or occupancy was legal under a prior version of this code;

2. The building is in compliance with all applicable provisions of Appendix D of the *Existing Building Code*; and
3. The continued use and occupancy are not unsafe pursuant to the provisions of Section 116.

102.6.4 Annexed structures. Any building in existence prior to the annexation into the *jurisdiction* of the land on which it is situated may have its use and occupancy continued if:

1. Such use of occupancy was legal under the building design and construction codes and related laws applicable in the *jurisdiction* in which the building was situated at the time immediately prior to its annexation;
2. The building is in compliance with all applicable provisions of Appendix D of the *Existing Building Code*; and
3. The continued use and occupancy are not unsafe pursuant to the provisions of Section 116.

SECTION 103

DEPARTMENT OF BUILDING SAFETY CODE ENFORCEMENT

[A] 103.1 Creation of enforcement agency. The Department of Building Safety Building Code Enforcement is hereby created within Houston Public Works, and the official in charge thereof shall be known as the *building official*.

[A] 103.3 Deputies. In accordance with the prescribed procedures of this *jurisdiction* and with the concurrence of the appointing authority, the *building official* shall have the authority to appoint a deputy building official, the related technical officers, inspectors, plan examiners and other employees. Such employees shall have powers as delegated by the *building official*. For the maintenance of existing properties, see the *International Property Maintenance Code*.

[A] 104.2.1 Determination of substantially improved or substantially damaged existing buildings and structures in flood hazard areas. ~~See Chapter 19 of the *City Code*. For applications for reconstruction, rehabilitation, repair, alteration, addition or other improvement of existing buildings or structures located in flood hazard areas, the *building official* shall determine if the proposed work constitutes substantial improvement or repair of substantial damage. Where the *building official* determines that the proposed work constitutes substantial improvement or repair of substantial damage, and where required by this code, the *building official* shall require the building to meet the requirements of Section 1612.~~

[A] 104.6 Right of entry. Where it is necessary to make an inspection to enforce the provisions of this code, or where the *building official* has reasonable cause to believe that there exists in a structure or upon a premises a condition that is contrary to or in violation of this code that makes the structure or premises unsafe, dangerous or hazardous, the *building official* is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises is unoccupied, the *building*

official shall first make a reasonable effort to locate the owner or other person having charge or control of the structure or premises and request entry. If entry is refused, the *building official* or an authorized representative shall have recourse to the remedies provided by law to secure entry.

When, due to an emergency, immediate entry is necessary to make an inspection to protect life or property, or when the *building official* has obtained an inspection warrant or other remedy provided by law to secure entry, no owner or occupant or any other person having charge, care of control of any building or premises shall fail or neglect, after request is made as herein provided, to promptly permit entry therein by the *building official* for the purpose of inspection and examination pursuant to this code.

[A] 104.8 Liability. ~~The *building official*, member of the board of appeals or employee charged with the enforcement of this code, while acting for the *jurisdiction* in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be civilly or criminally rendered liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties. Except as otherwise provided by law, the *building official* shall not personally be liable in damages for any act or omission arising out of any official action taken to implement and enforce the provisions of this code. Additionally, except as otherwise provided by law, the *building official* shall not personally be liable in damages for any act or omission taken in the course and scope of employment. Where and to the extent consistent with the provisions of Chapter 2, Article X, of the *City Code*, this *jurisdiction* shall provide legal representation and indemnification for any suit or claim brought against the *building official* or any deputies because of acts or omissions performed in the implementation or enforcement of this code.~~

This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating, or controlling any building, structure or system or other construction for any damages to persons or property caused by defects, nor shall the code enforcement agency or the *jurisdiction* be held as assuming any such liability by reason of the inspections authorized by this code or any permits or certificates issued under this code.

104.8.1 Legal defense. ~~Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representatives of the *jurisdiction* until the final termination of the proceedings. The *building official* or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.~~

[A] 104.10 Modifications. Where there are practical difficulties involved in carrying out the provisions of this code, the building official shall have the authority to grant modifications for individual cases, upon application of the owner or the owner's authorized agent, provided that the building official shall first find that special individual reason makes the strict letter of this code impractical, the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, accessibility, life and fire safety or structural requirements. The details of action granting modifications shall be recorded and entered in the files of Building Code Enforcement ~~the department of building safety.~~

[A] 104.10.1 Flood hazard areas. See Chapter 19 of the *City Code*. ~~The building official shall not grant modifications to any provision required in flood hazard areas as established by Section 1612.3 unless a determination has been made that:~~

1. ~~A showing of good and sufficient cause that the unique characteristics of the size, configuration or topography of the site render the elevation standards of Section 1612 inappropriate.~~
2. ~~A determination that failure to grant the variance would result in exceptional hardship by rendering the lot undevelopable.~~
3. ~~A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, cause fraud on or victimization of the public, or conflict with existing laws or ordinances.~~
4. ~~A determination that the variance is the minimum necessary to afford relief, considering the flood hazard.~~
5. ~~Submission to the applicant of written notice specifying the difference between the design flood elevation and the elevation to which the building is to be built, stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced floor elevation, and stating that construction below the design flood elevation increases risks to life and property.~~

104.12 Discontinuation of use; notice to vacate. Whenever any building or structure or equipment located therein is being used contrary to the provisions of this code or otherwise is in violation of this code, the *building official* may, by notice to the owner or the owner's representative and to all users of the structure, order that any or all uses of the structure be discontinued or that the structure, or portion thereof, be vacated within such time and for as long as the *building official* reasonably prescribes.

If the use or occupancy of the structure creates a serious and immediate hazard to human life or to property, the *building official* shall order the use discontinued immediately and may order the structure, or portion thereof, vacated immediately.

In the absence of a serious and immediate hazard to human life or to property, the *building official* shall not order a use discontinued and shall not issue an order to vacate until five business days after the *building official* has given the required notice of a right to a hearing pursuant to Sections 104.12.1 and 117. For the purposes of this Section;

1. An "owner" of a structure is the record owner(s) of the structure, according to the official public records of real property maintained by the clerk of the county in which the structure is located;
2. An "owner's representative" is a person whom the *building official* reasonably believes to be a representative of an owner;
3. A "use" of a structure includes its use as a residence or for any commercial purpose; and
4. The "users" of a structure include the structure's residential and commercial tenants but do not include customers of commercial tenants or other persons who have no independent right to enter the structure.

104.12.1 Right to hearing. Whenever pursuant to this code the *building official* orders the discontinuation of the use of all or a portion of a structure or equipment or orders the vacation of all or a portion of a structure, the *building official* shall give notice to the owner

or the owner's representative and to all users of the structure of their right to a hearing pursuant to Section 117.

Upon the request of the owner, the owner's representative, or a user of the structure, the *building official* shall schedule the hearing for a date no later than two weeks after the *building official's* receipt of the request. If the owner, the owner's representative, or a user of the structure requests that the hearing be conducted within three business days of the request, the hearing shall be so conducted. The owner, owner's representative, user of the structure, or *building official* may postpone the hearing one time where good cause is provided. If the *building official* does not receive a request for a hearing from the owner, the owner's representative, or a user of the structure within 20 days after the date of the *building official's* order to discontinue a use or to vacate, no hearing need be conducted.

104.12.2 Relocation assistance; right of entry. Upon the *building official's* issuance of an order to vacate all or a portion of a structure classified as an "R-2 residential occupancy" by Section 310, the *building official* may designate in writing one or more persons to contact residents of the structure to offer the *jurisdiction's* assistance in locating and otherwise making arrangements for alternative housing. The persons so designated are authorized to enter the structure and its grounds at reasonable times to contact residents personally for the purposes of this section. The persons so designated may not require the residents to take any specific action; in particular, the said persons are not authorized to enforce an order to vacate.

[A] 105.1 Required. Any *owner* or owner's authorized agent who intends to construct, enlarge, alter, *repair*, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, *repair*, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the *building official* and obtain the required *permit*, and no person shall cause, suffer or permit the same such work to be done unless a separate permit for each building or structure has first been obtained.

~~**[A] 105.1.2 Annual permit records.** The person to whom an annual *permit* is issued shall keep a detailed record of *alterations* made under such annual *permit*. The *building official* shall have access to such records at all times or such records shall be filed with the *building official* as designated.~~

[A] 105.2 Work exempt from permit. Exemptions from *permit* requirements of this code shall not be deemed to grant exemption from permits required by other codes or ordinances and shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other *codes*, laws or ordinances of this *jurisdiction*. *Permits* shall not be required for the following:

Building:

1. One-story detached accessory structures used as tool and storage sheds, playhouses, and similar uses, provided the floor area is not greater than 120 square feet (11 m²).
2. Fences not over 7 8 feet (2134 243.84 cm) high that are not constructed of masonry or concrete and that are not electrically energized, or includes razor wire or barbed wire.

3. Oil derricks.
4. Retaining walls that are not over 4 feet (121.92 cm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II or IIIA liquids.
5. Water tanks supported directly on grade if the capacity is not greater than 5,000 gallons (18,925 L) and the ratio of height to diameter or width is not greater than 2:1.
6. ~~Sidewalks and driveways~~ Uncovered decks accessory to a one- or two-family dwelling, not more than 30 inches (76.20 cm) above adjacent grade, and not over any basement or *story* below and ~~are~~ not part of an *accessible route*.
7. Minor repair and maintenance of existing structures that include:
 - 7.1. Painting, tarping, repair or replacement of wall papering, tiling, carpeting, cabinets, counter tops, and similar finish work.
 - 7.2. Repair to gypsum board (sheetrock or drywall) on existing walls that are not part of a fire-rated assembly and do not exceed an aggregate of 100 square feet (9.29 m²).
 - 7.3. Repair, using the same material, of exterior wood fascia, trim and soffits that does not exceed an aggregate of 128 square feet (11.89 m²).
 - 7.4. Roof covering that does not exceed an aggregate of 100 square feet (9.29 m²).
8. Temporary motion picture, television and theater stage sets and scenery.
9. Prefabricated *swimming pools* accessory to a Group R-3 occupancy that ~~are less than 24 inches (610 mm) deep~~, are not greater than 5,000 gallons (18 925 L) and are installed entirely above ground.
10. Shade cloth structures constructed for nursery or agricultural purposes, not including service systems.
11. Swings and other playground equipment ~~accessory to detached one- and two-family dwellings~~ other than those regulated by Section 424.
12. Window awnings in Group R-3 and U occupancies, supported by an exterior wall that do not project more than 54 inches (1,372 mm) from the *exterior wall* and do not require additional support.
13. Nonfixed and movable fixtures, cases, racks, counters, and partitions not over 5 feet 9 inches (1,753 mm) in height.
14. Flagpoles that support an appurtenance that weighs less than 150 pounds (68 kg), provided the flagpole complies with all applicable provisions of the *Construction Code* and its proposed location is not specifically regulated by a *City Code* or a code other than this code, and is not more than 75 feet (22,680 mm) tall if mounted on the ground or not more than 25 feet (7,620 mm) taller than the building when mounted on a building.
15. A tower less than 75 feet (22,680 mm) in height that meets the following conditions:

- 15.1 Tower structures used primarily for the support of amateur and citizens' band radio or private television antennas;
- 15.2 Tower structures on real property owned, leased, held or used, or dedicated for use by a public utility for rendering its service, such as tower structures used primarily for the transmission of electrical power by a public utility or the conveyance of communications over a telephone wire-line system operated by a public utility;
- 15.3 High mast tower structures or antennas built on land on, along or adjacent to streets, roads, highways, and bridges maintained by the state or a political subdivision of the state; and
- 15.4 Tower structures constructed or placed on land or other structures owned, leased, held or dedicated for use by the state or federal government or any political subdivision thereof, which land or other structures are used by the government entity primarily for rendering fire, police or other public protection services or utility services, whether or not the tower structure is used jointly by the governmental entity and any other public or private person or entity for other and additional public or private purposes.

A building permit for any tower structure that is 60 feet (18,288 mm) or more in height and does not meet these exemptions shall not be issued unless a special permit has been obtained pursuant to Section 28-522 of the *City Code*.

- 16. A "work of art," as defined in Section 202, shall be exempt from obtaining a structural building permit where not regulated by the *Houston Sign Code* and a structural building permit is obtained to address the supporting foundation, primary and secondary structural frame, including the anchorage or structural connections thereto and any proposed façade.
- 17. To the extent that the state and federal governments are exempt as a matter of law from compliance with the *Construction Code*, neither the state nor the federal government shall be required to obtain a building permit for work undertaken for, by or on the premises of either of them. However, the fees set forth in this code shall be applicable to the extent that the state or the federal government elects to obtain any permit for exempt work.
- 18. Except for exempt work undertaken for, by or on the premises of the state or the federal government, building permits shall be required for work undertaken for, by or on the premises of any political subdivision or unit of government (including, but not limited to, the *jurisdiction*) in the same manner and to the same extent as for work performed by or for other persons. The fees prescribed in this code shall be applicable to all permits issued to or for governmental agencies.

Counties are required to comply with the provisions of the *Construction Code*. Except as provided by Section 212.903 of the *Texas Local Government Code*, a county shall notify the *building official* of each work project that is undertaken. The *building official* shall, upon request and demonstration of capacity, allow a county to self-permit and self-inspect work that is performed by or for the county on county-owned buildings and facilities for which a permit is required. No fee shall be imposed hereunder for work that a county is authorized to self-permit and self-inspect.

Electrical:

Repairs and maintenance: Minor repair work, including the replacement of lamps or the connection of *approved* portable electrical equipment to *approved* permanently installed receptacles.

Radio and television transmitting stations: The provisions of this code shall not apply to electrical equipment used for radio and television transmissions, but do apply to equipment and wiring for a power supply and the installations of towers and antennas.

Temporary testing systems: A *permit* shall not be required for the installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.

Gas:

1. ~~Portable heating appliance.~~
2. ~~Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.~~

Mechanical:

1. ~~Portable heating appliance.~~
2. ~~Portable ventilation equipment.~~
3. ~~Portable cooling unit.~~
4. ~~Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.~~
5. ~~Replacement of any part that does not alter its approval or make it unsafe.~~
6. ~~Portable evaporative cooler.~~
7. ~~Self-contained refrigeration system containing 10 pounds (4.54 kg) or less of refrigerant and actuated by motors of 1 horsepower (0.75 kW) or less.~~

Plumbing:

1. ~~The stopping of leaks in drains, water, soil, waste or vent pipe, provided, however, that if any concealed trap, drain pipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a *permit* shall be obtained and inspection made as provided in this code.~~
2. ~~The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes, or fixtures.~~

[A] 105.2.1 Emergency repairs. Where equipment replacements and or any other repairs for which permits are required must be performed in an emergency situation, the permit application shall be submitted within the next working business day to the *building official*.

[A] 105.2.2 Repairs. Application or notice to the *building official* is not required for ordinary repairs to structures, replacement of lamps or the connection of *approved* portable electrical equipment to *approved* permanently installed receptacles, and items listed in

Section 105.2. Such repairs shall not include the cutting away of any wall, partition or portion thereof, the removal or cutting of any structural beam or load bearing support, or the removal or change of any required *means of egress*, or rearrangement of parts of a structure affecting the egress requirement; nor shall ordinary repairs include *addition* to, *alteration* of, replacement or relocation of any standpipe, water supply, sewer, drainage, drain leader, gas, soil, waste, vent or similar piping, electric wiring or mechanical or other work affecting public health or general safety.

[A] 105.3 Application for permit. To obtain a permit, the applicant shall first file an application therefor in writing on a form furnished by Building Code Enforcement ~~the department of building safety~~ for that purpose. Such application shall:

1. Identify and describe the work to be covered by the permit for which application is made.
2. Describe the land on which the proposed work is to be done by legal description, street address or similar description that will readily identify and definitely locate the proposed building or work.
3. Indicate the use and occupancy for which the proposed work is intended.
4. Be accompanied by construction documents and other information as required in Section 107.
5. State the ~~valuation~~ total aggregate square footage of any new structure, addition(s), alteration, and the square footage of new paving, and linear feet of new sidewalks and curbs located within the right-of-way associated with ~~of~~ the proposed work.
6. Be signed by the applicant, or the applicant's authorized agent.
7. Give such other data and information as required by the building official.

[A] 105.3.2 Time limitation of application. An application for which no permit is issued within 180 days following the date of application shall become inactive, and plans and other data submitted for review thereafter shall be returned to the applicant or destroyed by the building official. The building official is authorized to grant one or more extensions of time for additional periods not to exceed 180 days each, for a maximum of two years from the date of the original application, upon written request and justifiable cause demonstrated by the applicant. If an application for permit does not result in a permit within two years after the date of original application, the permit application shall expire. In order to renew action on an application after expiration, the applicant shall submit a new permit application and plans and shall pay a new plan review fee. An application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, unless such application has been pursued in good faith or a permit has been issued; except that the building official is authorized to grant one or more extensions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and justifiable cause demonstrated.

[A] 105.4 Validity of permit. The issuance or granting of a *permit* or approval of plans and specifications shall not be construed to be a *permit* for, or an approval of, any violation of any of the provisions of this code or of any other applicable laws, or ordinances of the *jurisdiction*.

Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the *jurisdiction* shall not be valid.

The issuance of a *permit* based on construction documents, specifications, and other data shall not prevent the *building official* from thereafter requiring the correction of errors in the construction documents, specifications, and other data, or from. ~~The *building official* is authorized to preventing construction, occupancy or use of a structure when where~~ in violation of this code or of any other applicable law-ordinances of this jurisdiction.

A permit and all its privileges are issued to the owner of the property for which the permit is issued, regardless of who submits the application or pays the permit fees. A permit shall be valid only for the person listed on the application as performing the work and for the scope of work identified on the permit.

A name change on an application or an existing permit must be obtained if the person performing the work listed on the application or existing permit is no longer responsible for the work performed. Provided that a refund has not been issued, the property owner has not changed, and written authority for the name change has been provided by the property owner to the building official, the building official shall process the request and issue an amended permit. A name change fee and an administrative fee shall be charged as provided in Section 118.1 of the *Building Code* and the city fee schedule.

In the case of the death or dissolution of the original property owner or person performing the work listed on the existing permit, pursuant to a timely name change request within 45 calendar days after such death or dissolution, the permit will be transferred to the new property owner or amended to include the name of the new person performing the work at no fee except for the administrative fee established in Section 118.1.1. of the *Building Code* and the city fee schedule. Failure to apply for a name change within the requisite 45 calendar days shall subject the property owner to applicable permit fees established in Section 118 of the *Building Code* and the city fee schedule based on the scope of work for all remaining construction and uninspected work.

[A] 105.5 Expiration. Every *permit* issued shall become ~~invalid~~ inactive on the 180th day after its issuance unless the work ~~on the site~~ authorized by such *permit* ~~is has~~ commenced and been inspected by a city inspector within 180 days after its issuance, or if the work authorized on the site by such *permit* is suspended or abandoned for a period of 180 days after the ~~time~~ date the work ~~is was~~ commenced. The *building official* is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.

If work has not commenced under a *permit* within two years after the date of issuance or is suspended or abandoned at any time for a period of two years, the *permit* shall expire. In order to recommence work associated with an expired *permit*, the permit holder shall re-*permit* the project and pay the full permit fee applicable for any previously uninspected portions of the original scope of work. Where the original plans with *building official* approval are not available for completion of field inspections, a lost plan recheck shall be submitted for *building official* approval. Appropriate plan review fees shall apply.

Exception: For the purpose of issuing a certificate of occupancy or a certificate of compliance, the *building official* may, upon request, reactivate a *permit* and perform a final inspection of work.

[A] 105.6 Suspension or revocation. The *building official* is authorized to suspend or revoke a *permit* issued under the provisions of this code wherever the *permit* is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or

regulation or any of the provisions of this code. Prior to taking such action, the *building official* shall provide notice to the building owner or to a tenant therein of a right to a hearing on the matter pursuant to Section 117 of this code.

[A] 107.5 Retention of construction documents. One set of *approved construction documents* shall may be retained by the *building official* for a period of not less than 180 days from the date of completion of the permitted work, or as required by state or local laws.

[A] 108.3 Temporary power. The *building official* is authorized to give permission to temporarily supply and use power in part of an electric installation before such installation has been fully completed and the final certificate of compliance-completion has been issued. The part covered by the temporary certificate shall comply with the requirements specified for temporary lighting, heat, or power in the *Electrical Code* NFPA 70. The temporary power authorization requires compliance with all code requirements applicable to the systems being energized and any additional safety requirements considered necessary by the building official.

[A] 109.2 Schedule of permit fees. On buildings, structures, electrical, gas, mechanical, and plumbing systems or *alterations* requiring a *permit*, a fee for each *permit* shall be paid as required, in accordance with Section 118 and the *city fee* schedule ~~as established by the applicable governing authority.~~

[A] 109.3 Building permit fee calculation. The applicant for a *permit* shall provide an estimated *permit* value at time of application. *Permit* valuations shall include total value of work, including materials and labor, for which the *permit* is being issued, such as electrical, gas, mechanical, plumbing equipment, and permanent systems. If, in the opinion of the *building official*, the *valuation* is underestimated on the application, the *permit* shall be denied, unless the applicant can show detailed estimates to meet the approval of the *building official*. Final building *permit valuation* shall be set by the *building official*. The value to be used in computing the permit fee for new structures, additions, alterations, remodeling or repairs shall be the total value of all construction work for which the permit is issued based on the current building valuation data sheet published by the International Code Council on the date of adoption of this code.

Exceptions:

1. The structural building permit fee for new one- and two-family *dwelling*s and *townhouses* and their detached *accessory structures* shall be calculated as specified in Section 118.2.1, Tables 118(1) and 118(2), and the *city fee schedule*, based on the total square footage of the *building area* as defined by *this code*.
2. The permit fee for new *additions* to one- and two-family *dwelling*s and *townhouses* shall be calculated as required for new residential *buildings*.
3. The permit fee for *repair*, *alterations*, or remodeling of one- and two-family *dwelling*s and *townhouses* shall be 20% of the calculated fee for new construction as specified in Section 118.2.1, Tables 118(1) and 118(2), and the *city fee schedule* based, on the total aggregate square footage of the *building area* being repaired or altered or the total aggregate square footage of the walls and ceilings being repaired or altered.

[A] 109.4 Work commencing before permit issuance. Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary *permits* shall be subject to an investigation fee established by the *building official* that shall be in addition to the required *permit* fees. The investigation fee shall be equal to the amount of the permit fee required by this code.

[A] 109.6 Refunds. ~~The *building official* is authorized to establish a refund policy~~ may authorize the refund of any fee paid hereunder that was erroneously paid or collected due to an error by one or more city employees. This provision shall not be applicable if the error occurred because of incorrect information provided by the applicant.

The *building official* may authorize a refund of not more than 90 percent of the amount in excess of the minimum permit fee paid when no work has been done under a *permit* issued in accordance with this code. If work has been done under the *permit*, no refund shall be authorized. The originally paid administrative fee and the plan review portion of the permit fee shall be nonrefundable.

The *building official* shall not authorize a refund of any fee paid except on written application filed not later than 180 calendar days after the date of fee payment by the original permit holder or an authorized successor in the event of the death or incapacity of the original permit holder.

[A] 110.3.3 ~~Reserved. Lowest floor elevation.~~ ~~In flood hazard areas, upon placement of the lowest floor, including the *basement*, and prior to further vertical construction, the elevation certification required in Section 1612.5 shall be submitted to the *building official*.~~

[A] 110.3.5 Lath, gypsum board and gypsum panel product inspection. Lath, gypsum board and gypsum panel product inspections that are not otherwise exempted from permits including, but not limited to, fire-resistance-rated or shear wall assemblies shall be made after lathing, gypsum board and gypsum panel products, interior and exterior, are in place, but before any plastering is applied or gypsum board and gypsum panel product joints and fasteners are taped and finished.

Exception: ~~Gypsum board and gypsum panel products that are not part of a fire-resistance-rated assembly or a shear assembly.~~

[A] 110.3.7 Energy efficiency inspections. Inspections shall be made to determine compliance with the *Energy Conservation Code* Chapter 13 and shall include, but not be limited to, inspections for: envelope insulation R- and U-values, fenestration U-value, duct system R-value, and HVAC and water-heating equipment efficiency.

[A] 110.3.8 Other inspections. In addition to the inspections specified in Section 110.3.1 through 110.3.7, the *building official* is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of this code and other laws that are enforced by ~~the department of building safety~~ Building Code Enforcement.

110.3.11 Reinspection. A reinspection fee may be assessed for each inspection or reinspection when an inspector arrives to perform the work and finds the portion of work

for which inspection is called is not complete or when corrections called for in a previous inspection report have not been made.

This section is not to be interpreted as requiring inspection fees the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or reinspection.

The building official may assess reinspection fees when the inspection record card is not posted or otherwise available on the work site, when the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, or for deviating from plans approved by the *building official*.

To obtain a reinspection, the applicant shall make a request and pay the reinspection fee in accordance with Section 118 and the city fee schedule.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

[A] 111.1 Use and occupancy. A building or structure or portion thereof, such as an individual business lease space, shall not be used or occupied, and a change in the existing use or occupancy classification of a building or structure or portion thereof shall not be made, until the *building official* has issued a separate certificate of occupancy for each lease space therefor as provided herein. For purposes of this section, a lease space means a leasehold or tenancy held or occupied by an individual or entity for its sole use and may include one or more rooms. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the *jurisdiction*.

Exceptions:

1. Certificates of occupancy are not required for work exempt from *permits* under Section 105.2.
2. A certificate of occupancy is not required for Group U occupancies accessory to single-family dwellings and not containing hazardous materials exceeding the maximum allowable quantity limits (MAQ's) identified in Section 307.

[A] 111.2 Certificate issued. After the *building official* inspects the building or structure and does not find violations of the provisions of this code or other laws that are enforced by ~~the department of building safety~~ Building Code Enforcement, the *building official* shall issue a certificate of occupancy that contains the following:

1. The building *permit* number or project number.
2. The address of the structure.
3. The name and address of the owner, and where applicable, the tenant, and ~~or the~~ owner's authorized agent.
4. A description of that portion of the structure for which the certificate is issued.
5. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code for the occupancy and division of occupancy and the use for which the proposed occupancy is classified.
6. The name of the *building official*.

7. The edition of the code under which the *permit* was issued.
8. The use and occupancy, ~~in accordance with the provisions of Chapter 3 of the building or portion thereof.~~
9. The type of construction as defined in Chapter 6.
10. The design *occupant load*.
11. If a fire alarm system is provided, and whether the fire alarm system is required.
12. If an *automatic sprinkler system* is provided, the type of system provided, and whether the sprinkler system is required.
13. Any special stipulations and conditions of the building *permit*.

[A] 111.4 Revocation. The *building official* is authorized to, in writing, suspend or revoke a certificate of occupancy or ~~compliance completion~~ issued under the provisions of this code after notice of a right to a hearing on the matter pursuant to Section 117 wherever the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.

111.5 Posting. The *certificate of occupancy* shall be posted in a conspicuous place on the premises and shall not be removed except by the *building official*. The owner shall maintain the correct information on the *certificate of occupancy*. The *code official* and *fire code official* shall require errors on a *certificate of occupancy* or *certificate of compliance* to be corrected.

[A] 113.1 General. ~~In order to hear and decide appeals of orders, decisions or determinations made by the *building official* relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business.~~ **Organization.** There is hereby created a General Appeals Board consisting of 10 members. Five members at a meeting shall constitute a quorum.

113.1.1 Membership. The positions shall be filled as follows:

- Position 1 –** By an architect registered as such under the laws of the State of Texas who shall be actively engaged in the practice of architecture of heavy construction works.
- Position 2 –** By an architect registered as such under the laws of the State of Texas who shall be actively engaged in the practice of architecture of residential works.
- Position 3 –** By a professional engineer registered as such under the laws of the State of Texas who shall be actively engaged in practice as a structural engineer.
- Position 4 –** By a professional engineer registered as such under the laws of the State of Texas who shall be actively engaged in practice as a mechanical engineer.
- Position 5 –** By a person who shall be actively engaged in the business of residential construction.

- Position 6** – By a person who shall be actively engaged in the business of general contracting of heavy construction work.
- Position 7** – By a well-respected citizen of the *jurisdiction* who shall be chairman of the board.
- Position 8** – By the *building official*, who shall also serve as secretary of the board.
- Position 9** – By the fire marshal.
- Position 10** – By a professional engineer registered as such under the laws of the State of Texas who is actively engaged in practice as an electrical engineer.

The *jurisdiction*'s Legal Department shall have an attorney present for each board meeting. The attorney shall advise the board on legal matters relative to topics under the board's authority.

113.1.2 Authorized representatives. The *building official* and the fire marshal, from time to time, may designate in writing a person under the said official's supervision to act as an authorized representative of the said official. Said representative shall enjoy all rights and privileges of the position. A copy of such a designation, specifying the dates any such person shall act as representative of the *building official* or of the fire marshal, shall be filed with the minutes of the board.

113.1.3 Term of appointment. Other than the members in Positions 8 and 9, who shall serve ex officio, members of the board shall be appointed by the mayor, with the approval of the city council, and shall serve for a term of two years. Terms of office for the appointees to Positions 1, 3, 5 and 7 shall expire on the second day of January of each odd-numbered year, and terms of office for the appointees to Positions 2, 4, 6 and 10 shall expire on the second day of January of each even-numbered year; however, each member shall continue in office until the member's respective successor is appointed and qualified. The adoption of this code shall not terminate the term of office of any person currently serving on the board, and any person who is currently serving on the board shall continue to serve in the position for which the person was appointed and confirmed until a successor is appointed and qualified.

113.1.4 Vacancies. Whenever any appointive position on the board becomes vacant by reason of death, resignation, or removal, said vacancy shall be filled for the unexpired term of the member being replaced. Should a vacancy occur on the board, the mayor shall appoint, subject to confirmation by the city council, another qualified person to serve the remainder of the term of such vacancy.

113.1.5 Removal. Any member of the board may be removed at any time by the mayor without consent of the city council.

113.1.6 Compensation. Each member of the board shall be compensated at the rate of \$50.00 per diem for each meeting the member attends at which a quorum is present; provided, however, no member shall be paid for more than three meetings in any one month. A *jurisdiction* employee member of the board shall be paid only for those meetings that the employee attends at which a quorum is present that are held outside of or continue beyond the employee's working hours.

113.1.7 Conflict of interest. In each instance where this code provides for a *jurisdiction* employee to serve as a voting member of any board created by the provisions of this code, such *jurisdiction* employee member shall not vote as a member of such board on any

motion, resolution, decision, interpretation or recommendation by the board concerning a decision or interpretation or an appeal from a decision or interpretation of any provision of this code or related ordinances made by the *jurisdiction* employee member.

[A] 113.2 Limitations on authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The board shall not have authority to waive requirements of this code. **Duties of the board.** The duties of the board are to interpret the provisions of this code in appeals from decisions of the *building official*; to settle possible *jurisdiction* disputes among the Plumbing Code Review Board, the Electrical Board, and the Mechanical Code Review Board; and to hear appeals from the *building official* as to the suitability of alternate materials or alternate methods of construction other than those relating to air-conditioning, plumbing, and electrical. The board also may make recommendations to the mayor for amendments to this code. The board shall have no authority to waive requirements of this code.

[A] 113.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the *jurisdiction*. **Procedures.** The board shall adopt reasonable rules and regulations for conduct of its duties. Petitions for hearings before the board shall be made in writing and filed with the *building official* and shall be heard by the board within 30 days after the date filed. A majority of the members of the board present shall determine matters presented to the board. All decisions and findings shall be reduced to writing by the secretary, with copies to the petitioner and all other parties to the hearing. Any interested person aggrieved by a decision of the board may appeal to the city council, provided that written notice to the city council for such appeal is delivered to the city secretary within 10 days after the date that the written decision of the board is mailed to the appellant by the board secretary.

All appeals to the city council are subject to the rules of the city council, which are codified in Section 2-2 of the *City Code*, copies of which are available from the city secretary. Parties wishing to preserve their right of appeal must comply with the rules of the city council, including Rule 12.

113.4 Posting of agenda. The secretary of the board shall prepare and post an agenda for each meeting in the manner provided by Chapter 551 of the *Texas Government Code*.

[A] 114.1 Unlawful acts. It shall be unlawful for any person, firm or corporation to erect, construct, alter, extend, *repair*, move, remove, demolish or occupy any building, structure or equipment regulated by this code, or cause same to be done, in conflict with or in violation of any of the provisions of this code.

Where no specific penalty is otherwise provided in this code, the violation of any provision of this code shall constitute a misdemeanor punishable upon conviction by a fine of not less than \$500.00 nor more than \$2,000.00. Each day that any violation continues shall constitute and be punishable as a separate offense. Where any such conduct constitutes a violation of state penal law, the offense shall be punishable as provided in the applicable state law. In prosecutions under this code, the various provisions hereof that are designated as an "exception" or "exceptions" shall not be treated as exceptions within the meaning of Section 2.02 of the *Texas Penal Code*, and, instead, they shall constitute defenses to prosecution within the meaning of Section 2.03 of the *Texas Penal Code*.

[A] 114.4 Violation penalties. Any person who violates a provision of this code or fails to comply with any of the requirements thereof or who erects, constructs, alters or repairs a building or structure in violation of the *approved construction documents* or directive of the *building official*, or of a *permit* or certificate issued under the provisions of this code, shall be subject to penalties as prescribed ~~by law~~ in Section 114.1.

[A] 115.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, the owner's authorized agent, or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work will be permitted to resume.

The building official shall, with the issuance of a stop work order, deliver notice of the right to a hearing on the matter to the person performing the work and the permit holder, if present at the site, or the notice shall be otherwise conspicuously posted at the site. Upon request from the property owner, the owner's authorized agent, or the person doing the work, a hearing shall be held within three business days of receiving the stop work order, unless the permit holder, or person who was doing the work requests an extension of time. Any stop work order that has been issued shall remain in effect pending any hearing that has been requested unless the *building official* withdraws the stop work order.

[A] 116.1 ~~Conditions.~~ ~~Structures or existing equipment that are or hereafter become unsafe, insanitary or deficient because of inadequate *means of egress* facilities, inadequate light and ventilation, or that constitute a fire hazard, or are otherwise dangerous to human life or the public welfare, or that involve illegal or improper occupancy or inadequate maintenance, shall be deemed an unsafe condition. Unsafe structures shall be taken down and removed or made safe, as the *building official* deems necessary and as provided for in this section. A vacant structure that is not secured against entry shall be deemed unsafe.~~ **Unsafe buildings or structures.** All buildings or structures regulated by this code that are structurally inadequate or unsafe, or not provided with adequate egress, or that constitute a fire hazard, or are otherwise dangerous to human life are, for the purposes of this section, unsafe buildings or structures. Any use of buildings or structures constituting a hazard to safety, health, or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster, damage, or abandonment is, for the purposes of this section, an unsafe use. Parapet walls, cornices, spires, towers, tanks, statuary and other appendages or structural members that are supported by, attached to, or a part of a building and that are in deteriorated condition or otherwise unable to sustain the design loads that are specified in this code are hereby designated as unsafe building appendages.

All such unsafe buildings, structures or appendages shall be abated, repaired, rehabilitated, demolished, or removed in accordance with the procedures set forth in the *Property Maintenance Code* and Chapter 10, Articles VIII and X of the *City Code*.

In matters of fire safety design and construction, including, but not limited to, egress (corridors, exit numbers, stairs, fire escapes and fire escape signs), wall and ceiling finish, enclosure of vertical shafts, basement access, standpipes and occupancy separation, a building shall not be deemed to be a fire hazard if it is in compliance with the most restrictive of:

1. The provisions of the *Life Safety Appendix D* of the *Existing Building Code*, if applicable;
2. The building code that was applicable when the building was constructed; or

3. If the occupancy classification of the building or a portion thereof has changed since it was constructed, then the applicable building code that was in effect when the occupancy classification was changed.

Any building not situated within the *jurisdiction* at the time of its construction or change of occupancy classification shall be governed by the design and construction code and related laws applicable in the *jurisdiction* in which it was constructed at the time of its construction or change of occupancy and by the provisions of the *Life Safety Appendix D* in the *Existing Building Code*. To the extent of any conflict among the requirements of any applicable codes, the most restrictive will apply. However, compliance with the aforesaid provisions shall not be deemed to excuse life-threatening defects of maintenance, sanitation, repair of casualty damage, security from unauthorized entry, structural stability, electrical systems, gas systems, plumbing systems, heating or cooling systems or other building systems.

Exception: For a building under construction or contract at the time of its annexation by the *jurisdiction*, see the Annexation Ordinance (Ordinance No. 78-2672), a copy of which is published in the preamble of this volume.

~~[A] 116.2 Record.~~ ~~The *building official* shall cause a report to be filed on an unsafe condition. The report shall state the occupancy of the structure and the nature of the unsafe condition.~~

~~[A] 116.3 Notice.~~ ~~If an unsafe condition is found, the *building official* shall serve on the owner, agent or person in control of the structure, a written notice that describes the condition deemed unsafe and specifies the required repairs or improvements to be made to abate the unsafe condition, or that requires the unsafe structure to be demolished within a stipulated time. Such notice shall require the person thus notified to declare immediately to the *building official* acceptance or rejection of the terms of the order.~~

~~[A] 116.4 Method of service.~~ ~~Such notice shall be deemed properly served if a copy thereof is (a) delivered to the owner personally; (b) sent by certified or registered mail addressed to the owner at the last known address with the return receipt requested; or (c) delivered in any other manner as prescribed by local law. If the certified or registered letter is returned showing that the letter was not delivered, a copy thereof shall be posted in a conspicuous place in or about the structure affected by such notice. Service of such notice in the foregoing manner upon the owner's agent or upon the person responsible for the structure shall constitute service of notice upon the owner.~~

~~[A] 116.5 Restoration.~~ ~~Where the structure or equipment determined to be unsafe by the *building official* is restored to a safe condition, to the extent that repairs, *alterations* or *additions* are made or a change of occupancy occurs during the restoration of the structure, such *repairs, alterations, additions* and change of occupancy shall comply with the requirements of Section 105.2.2 and the *International Existing Building Code*.~~

SECTION 117 **HEARING PROCEDURES**

117.1 Hearing notices. Unless otherwise specifically provided, whenever notice is to be given to any person concerning the right to a hearing, the notice may be given by personal hand delivery or by certified mail, return receipt requested.

If notice is being given to a building owner or to a tenant therein and the *building official* is unable to determine the name or address of the person after checking the building and the applicable records of Houston Public Works, the County Appraisal District, the electrical utility company, the gas utility company, and the water utility provider, notice shall be mailed to the

billing addresses of the building as shown on the records of the electrical utility company and the gas utility company and shall be posted on or in view of each entrance to the building. Additionally, if any notice is mailed to a building owner or a building tenant and is returned without delivery, notice shall be effective if posted on or in view of each entrance to the building.

117.2 Hearings. Except where otherwise specifically provided, all hearings held pursuant to this code shall be conducted by the director of Houston Public Works or a representative, who shall hereinafter be referred to as the "hearing official." The director shall not designate any person to be a hearing official under this code who has taken any part in the investigation of the matter that is the subject of the hearing or any person who directly supervised the investigation. The hearing official shall consider only the evidence presented at the hearing in rendering a decision. The decision of the hearing official shall be final, shall be set forth in writing, and shall be served on each party in the same manner as a notice of a right to a hearing.

SECTION 118

PERMIT AND INSPECTION FEES

118.1 General. The fees for permits, inspections and licenses established under the *Construction Code* are payable in the amounts set forth in the city fee schedule.

118.1.1 Permit or license. An administrative fee as stated for this provision in the city fee schedule shall be charged upon the preparation of each permit or license issued by the *building official*. This fee shall apply regardless of whether the permit or license is issued pursuant to this code or the *City Code*, and it shall be payable in addition to all other applicable fees for the permit or license. The foregoing administrative fee shall not be applicable if no other fee is provided by law for the permit or license.

118.1.2 Receipt. An administrative fee as stated for this provision in the city fee schedule shall be charged upon the preparation of each receipt for a fee or deposit issued by the *building official*. This fee shall apply regardless of whether the fee or deposit is payable pursuant to this code or the *City Code*. This fee shall be in addition to all other applicable fees or deposits. When paid for a deposit or fee receipt, this fee shall neither constitute nor be refundable as a part of the deposit.

118.1.3 Minimum permit fee. If the fee or fees imposed for any single permit that is issued by the *building official*, whether issued under this code or the *City Code*, do not total more than the minimum permit fee stated for this provision in the city fee schedule, then the minimum permit fee as stated for this provision in the city fee schedule shall be charged for the permit. The foregoing minimum permit fee shall not be applicable if no other fee is provided by law for the permit. The administrative fee assessed pursuant to Section 118.1.1 above shall not be included in the foregoing minimum permit fee calculation, and it shall be payable in addition to the minimum permit fee.

118.1.4 Certificate of occupancy or compliance. The fee stated for this provision in the city fee schedule shall be charged for each certificate of occupancy or compliance issued for a building or structure or portion thereof such as an individual business lease space. When authorized, the *building official* may issue a temporary certificate of occupancy, upon payment of the fee stated for this provision in the city fee schedule for each temporary certificate of occupancy, for a period of not more than 30 days each.

The *building official* is authorized to issue a temporary event permit for facilities having a current certificate of occupancy that is not specifically authorized for the

temporary occupancy or use proposed where the following specific life- and fire safety code provisions are addressed.

1. Temporary uses or occupancies requiring automatic fire sprinkler protection based on the proposed use or occupancy as identified in this code shall be provided with a fire watch for the duration of the temporary event. The fire watch shall be provided through the *jurisdiction's* fire department.

Where a temporary certificate of occupancy (TCO) is associated with a temporary event permit, the building official is authorized to issue a maximum of three temporary event TCO's per facility within any given 12-month period. Facilities requesting a fourth temporary event permit within any given 12-month period shall submit complete plans for appropriate code review and upgrade the facility to comply with the code provisions applicable to the proposed temporary use or occupancy.

118.1.5 Reinspection fee. When it becomes necessary to make a reinspection of any work because of faulty materials or workmanship or incomplete work, the permittee shall pay the fee stated for this provision in the city fee schedule for each reinspection, except where a greater fee is specifically required under this code.

118.1.6 Specially requested inspections during working hours. Whenever a person requests that an inspector be present at a site at a specific time, the *jurisdiction* shall provide such inspector upon payment of all applicable fees if doing so would not interfere with the regular duties of the inspector and would not cause a delay in the inspection of other work. The fee, per day, for specially requested inspections conducted during regular working hours is stated for this provision in the city fee schedule and is payable in addition to all other fees required by this code.

A full day's fee must be paid unless the *building official* finds that the request was made as a result of an unforeseeable emergency.

118.1.7 Emergency inspections. Emergency inspections shall be defined as those requested inspections occasioned by virtue of an unforeseeable incident or occurrence that necessitates an immediate inspection. In situations where there is a dispute as to whether an actual emergency occurred, the decision of the *building official* shall be final.

The fees for emergency inspections are stated for this provision in the city fee schedule and are payable in addition to all other fees required by this code.

118.1.8 Inspections and plan reviews outside regular working hours. Whenever a person requests that an inspector make an inspection or a plan analyst review plans at times other than during regular working hours, or on *jurisdiction*-observed holidays or weekends, the *building official* shall provide such plan analyst or inspector upon payment of all applicable fees if such would not interfere with the regular duties of the plan analyst or inspector or create an undue burden on such plan analyst or inspector.

The fees for inspections and plan reviews at times outside regular working hours are stated for this provision in the city fee schedule and are payable in addition to all other fees required by this code.

118.1.9 Inspections outside of *jurisdiction*. The fee for an inspection outside the *jurisdiction* shall be the minimum fee stated for this provision in the city fee schedule, per person, plus the current standard mileage rate as published by the Internal Revenue Service per vehicle mile. This fee shall not apply to inspections performed under Section 118.1.10.

118.1.10 Approved fabricator or approved agent or agency. Fees shall apply to projects authorized by the city to use an approved fabricator/certifying agent or agency, as follows:

1. An approved agent or agency, as described in Chapter 17, shall pay the fee stated in the city fee schedule for any inspections made by the *building official* for the purpose of approving the agent or agency. The agent or agency shall also reimburse the *jurisdiction* for travel expenses incurred in performing inspections outside Harris or a contiguous county.
2. An approved fabricator as defined in Chapter 2 of this code, shall pay the fee stated in the city fee schedule for each inspection made by the *building official* for the purpose of verifying and approving the fabricator's quality control program. The fabricator shall also reimburse the *jurisdiction* for travel expenses incurred in performing inspections outside Harris or a contiguous county.

118.1.11 Building plan review fee. Plans submitted for a building permit shall be charged a non-refundable plan review fee. This plan review fee shall be charged as a deposit to the building permit fee. The fee shall be calculated at a rate of 25 percent of the estimated building permit fee calculated as provided in Section 118.2.1 and the city fee schedule. This fee shall be paid upon submittal for the initial review of plans. The balance of the building permit fee shall be collected when the permit is issued. In the instance that the building permit is not subsequently issued, the plan review fee deposit remains non-refundable.

118.1.12 Quick start plan review service. Plan review meetings for certain types of construction projects shall be available when approved by the *building official*. The *building official* shall develop guidelines for proper use of this service, determination of qualified projects, and assessment of service fees not specifically noted in this code.

The fee for quick start plan review meetings shall be 65 percent of the building permit fee calculated as provided in the city fee schedule. This fee shall be separate from, and in addition to, the structural permit fee.

Payment of the quick start plan review fee allows review of the plans in the form presented at the time the fee is paid and one additional review in the event the drawings must be corrected to comply with this code or other applicable laws. The payment shall not entitle the applicant to expedited review of any further revisions to the plans.

118.1.13 Name or address changes and duplicate job cards or certificates. The fees for name or address changes on permit applications, existing permits or certificates are stated for this provision in the city fee schedule. When a duplicate job card or certificate of occupancy is requested by the applicant, the fee shall be as set forth for this provision in the city fee schedule.

118.1.14 Request for special approval, alternate method, interpretation, or modification due to practical difficulty. Requests submitted for review by the *building official* will be classified in one of the following categories for processing, and fees will be assessed according to the city fee schedule. Payment will be required prior to processing.

Standard request. A standard request requires a minimal amount of research or consultation to review and grant or deny the request. Standard requests apply to submitted forms promulgated by the *building official*.

Moderate request. A moderate request requires an intermediate amount of research or consultation to review and grant or deny the request. A moderate request submittal is limited to a single-floor level and a maximum of 30 pages. This request is allowed between 2 and 4 hours to complete.

Extensive request. An extensive request requires lengthy research, documentation, data collection, and review time to grant or deny the request. Extensive requests include any submittal containing engineering evaluations, test reports, or requests for areas located on multiple floor levels requiring several plan sheets and details to clearly document the location and scope of the proposed work, including any submittal package exceeding 30-pages.

118.1.15 Investigation fee. An investigation fee stated for this provision in the city fee schedule shall be charged when work has commenced prior to the issuance of the proper permits. This fee shall include one follow-up trip; each additional follow-up trip thereafter shall be charged a separate investigation fee.

118.1.16 Annual fee increase. Notwithstanding any maximum fee established pursuant to the *Construction Code*, the fees in this or in any volume of the *Construction Code*, as adjusted according to this section, shall be automatically increased on the first day of each subsequent calendar year as provided in Section 1-13 of the *City Code*.

118.2 Structural.

118.2.1 Buildings. Building permit fees, payable in the amounts set forth in the city fee schedule, shall be required under this code for new buildings, additions, *alterations*, remodels, conversions, and *repairs*.

For one- and two-family *dwelling*s, the building permit fee shall be comprised of two components, the base charge, which shall be determined according to type of construction and size, as shown in Table 118(1), and the incremental charge, which shall be determined according to type of construction and size, as shown in Table 118(2).

TABLE 118(1)
RESIDENTIAL BUILDING PERMIT CONSTRUCTION TYPE AND TIER

Type of Construction	Tier	Square footage greater than	Square footage less than or equal to
IA	1	0	44.9178645
IA	2	44.9178645	962.5256674
IA	3	962.5256674	1,283.3675565
IA	4	1,283.3675565	1,925.0513347
IA	5	1,925.0513347	3,208.4188912
IA	6	3,208.4188912	6,416.8377823
IA	7	6,416.8377823	32,084.1889117
IA	8	32,084.1889117	320,841.8891170
IA	9	320,841.8891170	No maximum
IB	1	0	46.1710969
IB	2	46.1710969	989.3806477
IB	3	989.3806477	1,319.1741970
IB	4	1,319.1741970	1,978.7612954
IB	5	1,978.7612954	3,297.9354924
IB	6	3,297.9354924	6,595.8709848
IB	7	6,595.8709848	32,979.3549238
IB	8	32,979.3549238	329,793.5492382

IB	9	<u>329,793.5492382</u>	<u>No maximum</u>
IIA	1	<u>0</u>	<u>47.3516877</u>
IIA	2	<u>47.3516877</u>	<u>1,014.6790232</u>
IIA	3	<u>1,014.6790232</u>	<u>1,352.9053643</u>
IIA	4	<u>1,352.9053643</u>	<u>2,029.3580464</u>
IIA	5	<u>2,029.3580464</u>	<u>3,382.2634107</u>
IIA	6	<u>3,382.2634107</u>	<u>6,764.5268213</u>
IIA	7	<u>6,764.5268213</u>	<u>33,822.6341067</u>
IIA	8	<u>33,822.6341067</u>	<u>338,226.3410674</u>
IIA	9	<u>338,226.3410674</u>	<u>No maximum</u>
IIB	1	<u>0</u>	<u>48.5807481</u>
IIB	2	<u>48.5807481</u>	<u>1,041.0160316</u>
IIB	3	<u>1,041.0160316</u>	<u>1,388.0213755</u>
IIB	4	<u>1,388.0213755</u>	<u>2,082.0320633</u>
IIB	5	<u>2,082.0320633</u>	<u>3,470.0534388</u>
IIB	6	<u>3,470.0534388</u>	<u>6,940.1068776</u>
IIB	7	<u>6,940.1068776</u>	<u>34,700.5343882</u>
IIB	8	<u>34,700.5343882</u>	<u>347,005.3438823</u>
IIB	9	<u>347,005.3438823</u>	<u>No maximum</u>
IIIA	1	<u>0</u>	<u>50.3814596</u>
IIIA	2	<u>50.3814596</u>	<u>1,079.6027062</u>
IIIA	3	<u>1,079.6027062</u>	<u>1,439.4702749</u>
IIIA	4	<u>1,439.4702749</u>	<u>2,159.2054124</u>
IIIA	5	<u>2,159.2054124</u>	<u>3,598.6756873</u>
IIIA	6	<u>3,598.6756873</u>	<u>7,197.3513747</u>
IIIA	7	<u>7,197.3513747</u>	<u>35,986.7568735</u>
IIIA	8	<u>35,986.7568735</u>	<u>359,867.5687347</u>
IIIA	9	<u>359,867.5687347</u>	<u>No maximum</u>
IIIB	1	<u>0</u>	<u>51.7483551</u>
IIIB	2	<u>51.7483551</u>	<u>1,108.8933245</u>
IIIB	3	<u>1,108.8933245</u>	<u>1,478.5244326</u>
IIIB	4	<u>1,478.5244326</u>	<u>2,217.7866489</u>
IIIB	5	<u>2,217.7866489</u>	<u>3,696.3110815</u>
IIIB	6	<u>3,696.3110815</u>	<u>7,392.6221631</u>
IIIB	7	<u>7,392.6221631</u>	<u>36,963.1108154</u>
IIIB	8	<u>36,963.1108154</u>	<u>369,631.1081541</u>
IIIB	9	<u>369,631.1081541</u>	<u>No maximum</u>
IV (HT)	1	<u>0</u>	<u>49.3931696</u>
IV (HT)	2	<u>49.3931696</u>	<u>1,058.4250635</u>
IV (HT)	3	<u>1,058.4250635</u>	<u>1,411.2334180</u>
IV (HT)	4	<u>1,411.2334180</u>	<u>2,116.8501270</u>
IV (HT)	5	<u>2,116.8501270</u>	<u>3,528.0835450</u>
IV (HT)	6	<u>3,528.0835450</u>	<u>7,056.1670900</u>
IV (HT)	7	<u>7,056.1670900</u>	<u>35,280.8354502</u>
IV (HT)	8	<u>35,280.8354502</u>	<u>352,808.3545018</u>
IV (HT)	9	<u>352,808.3545018</u>	<u>No maximum</u>
VA	1	<u>0</u>	<u>53.8295909</u>
VA	2	<u>53.8295909</u>	<u>1,153.4912335</u>
VA	3	<u>1,153.4912335</u>	<u>1,537.9883113</u>
VA	4	<u>1,537.9883113</u>	<u>2,306.9824669</u>
VA	5	<u>2,306.9824669</u>	<u>3,844.9707782</u>
VA	6	<u>3,844.9707782</u>	<u>7,689.9415564</u>
VA	7	<u>7,689.9415564</u>	<u>38,449.7077822</u>

VA	8	38,449.7077822	384,497.0778222
VA	9	384,497.0778222	No maximum
VB	1	0	57.1615221
VB	2	57.1615221	1,224.8897599
VB	3	1,224.8897599	1,633.1863466
VB	4	1,633.1863466	2,449.7795198
VB	5	2,449.7795198	4,082.9658664
VB	6	4,082.9658664	8,165.9317328
VB	7	8,165.9317328	40,829.6586641
VB	8	40,829.6586641	408,296.5866405
VB	9	408,296.5866405	No maximum

TABLE 118(2)
SQUARE FOOTAGE INCREMENT BY TYPE OF CONSTRUCTION

<u>Type of Construction</u>	<u>Square footage increment, each incurring additional charge</u>
IA	6.4168378
IB	6.5958710
IIA	6.7645268
IIB	6.9401069
IIIA	7.1973514
IIIB	7.3926222
IV (HT)	7.0561671
VA	7.6899416
VB	8.1659317

For all buildings not included in Tables 118(1) and 118(2), the building permit fee shall be based on the valuation, as described in Section 109.3 and the city fee schedule.

Notes:

1. New one- and two-family dwellings and townhouses 1,800 square feet or less shall receive a 50 percent discount on permit fees.
2. A historic building that has been designated by the jurisdiction as a landmark or that is located within a historic district designated by the jurisdiction, or for which designation as a landmark or part of a historic district is pending, shall receive a 50 percent discount on permit fees provided that a certificate of appropriateness approved by the Houston Archaeological and Historical Commission pursuant to Chapter 33 of the City Code is submitted with the construction documents.
3. Towers other than sign structures shall be charged in the same manner as new buildings.

Permits shall be required for the following items as described in the city fee schedule:

1. Demolition of any building or structure.
2. Stationary and floating piers.

3. Incinerators (other than domestic outdoor type).
4. Bulkheads and retaining walls not otherwise exempted from permit.
5. Dredging.
6. Prefabricated fireplaces.
7. Sand blasting or water blasting.
8. Grading permit.
9. Loading docks (uncovered).
10. Barricades for pedestrian walkways.
11. Paint spray booths.
12. Heliports and helistops (interdepartmental inspections—health, structure, fire, and aviation safety).

118.2.2 Industrial facilities and chemical plants. Permit fees for petroleum processing installations; nuclear reactor complexes and processing facilities; facilities manufacturing, processing, distributing or storing energy; other facilities processing, storing or manufacturing materials or energy, not otherwise covered by a construction permit shall be charged in the same manner as new buildings as set forth in Section 118.2.1 and the city fee schedule.

118.2.3 Occupancy and inspection of existing buildings. Permit and inspection fees in the amounts stated for these provisions in the city fee schedule apply to occupancy and inspection of existing buildings, when required by the *Existing Building Code* or the *Property Maintenance Code*.

118.2.4 Fences. Permit fees for fences shall be as stated for this provision in the city fee schedule.

118.2.5 Fire escapes. Permit fees for fire escapes shall be as stated for this provision in the city fee schedule.

118.2.6 Public sidewalks, driveway approaches, culverts, curbs, and gutters located in the right-of-way. Permit fees for sidewalks, driveways, culverts, curbs and gutters covered by this code shall be as stated for this provision in the city fee schedule.

118.2.7 Parking lots and paved areas not associated with a one- or two-family dwelling. Permit fees for parking lots (uncovered) and paved areas shall be as stated for this provision in the city fee schedule.

118.2.8 Plan review fees. Plan review fees, other than the building plan review fee provided for in Section 118.1.12, shall be as stated for this provision in the city fee schedule for review of the following:

Manufactured home or recreational vehicle parks.

Residential master plans.

Reexamination of plans or deferred submittal of plans:

Where deferred plans are submitted a fee shall be charged based on the minimum permit fee identified in the city fee schedule.

Where previously approved plans are reexamined or revised, the plan review fee shall be as specified in the city fee schedule or 15 percent of the

original building permit fee, whichever is greater. The fee for reexamination of partial plans shall be determined by the *building official* based on the review time involved.

Outside *jurisdiction* plan review fee:

Plan review for buildings located outside the *jurisdiction* shall be 65 percent of the building permit fee as calculated in accordance with Section 118 and the city fee schedule. This service shall only be provided at the building owner's request and subject to the availability of personnel to render the service.

Paving plan review:

Paving, other than that which is covered under Section 118.2.6 or 118.2.7, shall require a plan review, for which the fee amount is stated in the city fee schedule, but shall not require a permit or inspection or associated fees.

Exception: A separate plan review and fee shall not be required when the paving is associated with a driveway approach or building permit.

118.3 HVAC equipment.

118.3.1 General. Fees for permits and inspections for the installation, alteration and inspection of heating, ventilating, air-conditioning and refrigeration systems shall be as stated for this provision in the city fee schedule for the following:

1. Ventilating systems or heating-only systems (other than boilers). Toilet exhaust, outside air makeup, elevator ventilation, stair pressurization, smoke exhaust or residential ventilation fees shall be included in the air-conditioning tonnage fee. The minimum permit fee shall be as stated for this provision in the city fee schedule. (See Section 118.3.3 for local vent fees.)
2. Repairs or alterations (including cooling tower replacement) to an existing heating, ventilating, air-conditioning or refrigeration system.

Exception: Repairs to ducts and grilles in a single tenant lease space that has a total valuation of less than \$500.00 is exempt from permits.
3. Air-handling and duct systems for air-conditioning in buildings that have heating and/or cooling fluid from an external source.
4. Air-conditioning cooling equipment (chillers, compressors and/or absorption units with their auxiliaries) located in a building other than the one being cooled (for instance, a central plant to supply one or more buildings).
5. A complete air-conditioning system where the cooling equipment, the air-handling equipment and duct system are in the same building. For air-conditioning systems that include heating (except boilers), the fee shall be included in the tonnage or horsepower fee at no extra cost, provided such heating is included on the original permit application.
6. Commercial, manufacturing and industrial process refrigeration systems.

118.3.2 Temporary operation inspection. For inspection of a heating, ventilation, refrigeration or air-conditioning system to be used on a temporary basis, the fee stated for this provision in the city fee schedule shall be paid to the *jurisdiction* by a licensed air-conditioning contractor requesting such inspection. If the system is not approved for temporary operation on the first inspection, the usual reinspection fee will be charged for each subsequent inspection for such purpose.

118.3.3 Local vent permit. The fee stated for this provision in the city fee schedule will be charged for local vent permits, central vacuum system permits, and permits for ventilation fans up to 2,000 cfm. When a licensed air-conditioning contractor includes local vents in a permit, no additional fee will be required.

118.3.4 Self-contained air-conditioning units. The stated for this provision in the city fee schedule shall be paid for buildings using self-contained air-conditioning units.

Exception: Self-contained air-conditioning units in Residential Group R-3 occupancies are exempt.

118.3.5 Manufactured home inspections. For inspection of heating and ductwork of a manufactured home where no state inspection has been made, the fee shall be as stated for this provision in the city fee schedule.

118.3.6 Certificate of approval. In addition to the regular permit fee, the fee stated for this provision in the city fee schedule shall be charged for a certificate of approval of air-conditioning for each permit taken out to add heating and/or air-conditioning to an existing residence. The fee shall be paid for at the time the regular permit fee is paid.

118.4 Boilers. Every person desiring to install, maintain or repair boilers shall file an application for a permit with the *building official*, stating the location and nature of work to be performed, and pay the fees stated in the city fee schedule for the following:

1. For boiler installation based on Btu input and/or HP: base charge plus the fee for each BHP or part thereof. The maximum permit fee for installation of a single boiler in excess of 1,200 BHP is stated for this provision in the city fee schedule.

Note: For the purpose of this code, 1 BHP equals 33,000 Btu.

2. Annual fee.
3. Repair permit.

118.5 Plumbing.

118.5.1 General. The fees required for permits for the following are set forth in the city fee schedule, with a minimum amount stated in the city fee schedule, where not otherwise specified:

Opening in street (street cut, for purpose of connection with utilities).

(See Chapter 40 of the *City Code* for additional regulations and deposits required.)

Temporary gas inspection.

Gas permit and inspection (up to 4 openings).

Additional gas openings, each.

Manufactured home inspection fee (where no state inspection has been made).

Fire-protection fee (fire sprinkler system separate permit required):

For a fire sprinkler system (any head or group of heads up to 25 that is regulated with a valve for any portion of a building), minimum fee.

For each additional head.

For sprinkler system plan review, per head.

Standpipe system (1 to 25 hose connections).

Each additional hose connection.

Irrigation system (1 to 200 heads) per head.

Each additional head.

118.5.2 Heating gas appliances. The fees stated for this provision in the city fee schedule shall apply to the following:

Furnace (nonduct type)

Each additional furnace to be installed in same building under same permit

Floor furnace (nonduct type)

Incinerators (gas fired) (complete with two burners or more)

Infrared heaters (one or two)

Each additional infrared heater installed under the same permit

118.5.3 Yard lights or barbecue grills. The fees stated for this provision in the city fee schedule shall apply for the following:

First opening.

Each additional opening installed under the same permit.

118.5.4 Permanent appliances. The fees stated for this provision in the city fee schedule shall apply for the following:

Wall heater (bath heaters exempt).

Each additional heater installed under same permit.

Gas steam radiator.

Each additional radiator installed under same permit.

Commercial oven.

Commercial dryer.

Plumbing fixtures (one to three).

Each additional fixture installed under same permit.

Warm-air circulators (nonduct), first three.

Each additional circulator installed under same permit.

Tie to curb inlet-storm sewer.

Manholes, each.

Roof drain or outside downspout connection to drainage system, one or two.

Each additional roof drain or downspout to be installed under the same permit.

Catch basin or outside area drain, one or two.

Each additional catch basin or outside area drain to be installed under same permit.

Sewer connections, each.

Ground in plumbing for shell building, 3,000 square feet (279 m²) or less floor area.

For each additional 1,000 square feet (93 m²) or part thereof.

Septic tanks or individual sewage treatment plants, each.

Disconnect and plug main sewer connection.

Tanks (not septic tanks). A permit separate from other permits required for:

Up to and including 1,000 gallons (3,785 L) capacity (including mechanical interceptors).

More than 1,000 through 6,000 gallons (3,785 L through 22,712 L).

More than 6,000 through 15,000 gallons (22,712 L through 56,781 L).

More than 15,000 through 30,000 gallons (56,781 L through 113,562 L).

More than 30,000 gallons (113,562 L).

118.6 Electrical. Fees for the following permits and related inspections required by the *Electrical Code* are stated for Sections 118.6.1 through 118.6.5 and the city fee schedule, with a minimum fee also stated in the city fee schedule where not otherwise specified:

118.6.1 Services.

Meter loop and service.

Up to and including 50 kW.

More than 50 kW through 250 kW.

More than 250 kW.

Panels with eight or more circuits, each panel.

Outlets, each.

Note: All light switches, receptacle openings and bell-ringing transformers are classified as outlets.

Electrical vehicle charging outlets identified in this Section (118.6.1) requiring compliance with Section 511.10(B) and Article 625 include:

Level 1 – charging 120 Volts

Level 2 – charging the NEC including 240 Volts

Level 3 – charging 480 Volts

118.6.2 Fixtures and appliances.

Fixtures, each.

Note: Any current-consuming device permanently attached to an outlet for illumination purposes shall be classified as a fixture.

Electrical appliances-domestic.

Range receptacle, each.

Clothes dryer, each.

Stove top, each.

Oven, each.

Garbage disposal, each.

Dishwasher, each.

Window air-conditioning receptacle, each.

118.6.3 Motors.

Motors, permanently installed, each.

Up to and including ≤ 1 horsepower.

More than 1 horsepower through 10 horsepower.

Each additional horsepower or fraction thereof over 10 horsepower.

Motor control equipment is included in the motor fees. Outlets for future motor installation shall be charged for at one-half of the applicable, regular motor rates. The other one-half shall be paid at the time the motors are installed.

Permanent connection of electrical appliances, equipment and transformers of any nature:

Unless another fee is specified in this section for the apparatus to be installed, the fee shall be based on the kW rating of the apparatus. Each kW shall be considered to be one horsepower, and the fees shall be the same as indicated for "motors, permanently installed," above.

118.6.4 Signs.

Shop inspection of incandescent electrical signs and gas or vacuum tube signs, each:

0 to 5 kVA.

Additional for each kVA or fraction thereof exceeding 5 kVA.

Installation inspection of incandescent electrical signs and gas or vacuum tube signs, each:

0 to 5 kVA.

Additional for each kVA or fraction thereof exceeding 5 kVA.

118.6.5 Outdoor and temporary.

Streamers and festoon lighting per circuit.

Ball park and parking lot light poles (no outlet or fixture charge), 1st pole each.

Each additional pole after the 1st.

Temporary installations, such as wood saws, floor surfacing machines, painting/spray apparatus and the like, per installation.

Temporary installation of commercial sound equipment.

Temporary lighting installations.

Temporary installations such as carnivals or similar installations for amusement show display or similar uses shall be charged for on a kVA basis. For the purpose of this classification, 1 horsepower of motor load shall be considered as one kVA.

0 through 10 kVA

Additional for each kVA or fraction thereof exceeding 10 kVA.

Temporary saw poles (per installation).

Temporary cut-in made permanent.

Additions to existing work shall be charged for at the same rate as new work.

Reconnection fee.

118.7 Elevators.

118.7.1 General. Every person proposing to install an elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift, personnel hoist or wheelchair lift shall file a written request for a construction permit with the *building official* and pay the installation fees for each unit stated for this provision in the city fee schedule for the following:

New installations and alterations:

Passenger or freight elevator, escalator, manlift, moving walk, inclined stairway chairlift, personnel hoist or wheelchair lift, where the equipment is to be installed in other than a private residence, each:

Up to and including \$40,000.00 of valuation.

Each additional \$1,000.00 of valuation or fraction thereof.

Personnel hoist-manufacturing design permit (required in addition to above fee if the hoist is not already permitted).

Passenger or freight elevator, escalator, manlift, moving walk, inclined stairway chairlift, personnel hoist or wheelchair lift, where the equipment is to be installed in a private residence, each:

Up to and including \$10,000.00 of valuation.

Each additional \$1,000.00 of valuation or fraction thereof.

Installation fees for equipment other than personnel hoists include an operating permit for the first year of operation, where applicable.

Installation fees for personnel hoists include a limited permit for the first 90 days of operation.

118.7.2 Inspections. The *building official* shall not be obliged to perform a test or inspection if the *building official* does not then have qualified personnel to perform such tests. Where one or more inspections or tests are necessary to verify compliance with this code, the *building official* may require such inspections or tests to be performed by a city registered third party inspection agency. If the *jurisdiction* provides the inspections, fees

shall be payable to the *building official* as stated for this provision in the city fee schedule for all of the following:

1. Each personnel hoist:
 - Acceptance load test* (includes two monthly inspections).
 - Periodic test, three months (includes two monthly inspections).
 - Addition to tower plus any test fee, single-cage hoist.
 - Addition to tower plus any test fee, twin-cage hoist.
2. Acceptance inspection for each elevator (new installation and alteration).
3. Acceptance inspection for each escalator, dumbwaiter, wheelchair lift, manlift or moving walk (new installation or alteration).
4. Annual reinspection for each elevator except where lesser fee is provided elsewhere in Section 118.7:
 - Reinspection fee.
5. Escalator annual inspection, each.
6. Moving walk annual inspection, each.
7. Wheelchair lift annual inspection, each.
8. Dumbwaiter annual inspection, each dumbwaiter:
 - For 2 through 10 landings.
 - For each additional landing.
9. Manlift or inclined stairway chairlift annual inspection, each.
10. Traction elevator maintenance load test*.
 - Five-year maintenance load test.
 - Counter-weight safeties, add.
 - With reduced stroke buffer, add.
 - With spring buffer, add.
11. Hydraulic elevator three-year load test*.
12. Rescheduling of test:
 - Additional fee if *owner* or elevator company cancels, unless notice is given to the *building official* by at least 1:00 p.m. on the preceding working day.
13. If an elevator test cannot be completed within eight hours because the elevator did not comply with the requirements of this code when the test was begun, there shall be charged the additional fee stated for this provision in the city fee schedule for each additional hour or portion thereof.

* Load test shall be performed by an elevator maintenance/installation company, and the test shall be witnessed by the *building official* or an approved agency.

118.7.3 Reinspection fee. When reinspection of any work is performed because of faulty materials or workmanship or incomplete work, the permittee shall pay the fee stated for

this provision in the city fee schedule for each reinspection, except where a greater fee is specifically required under this code.

118.7.4 Operating permit or limited permit. An operating permit or limited permit shall be required for each elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift, personnel hoist or wheelchair lift. An operating permit shall be valid for one year, and a limited permit shall be valid for 90 days. Fees stated for this provision in the city fee schedule shall be charged for the following operating permits and limited permits:

Each elevator.

Each escalator or moving walk.

Each dumbwaiter.

Each personnel hoist.

Each wheelchair lift.

Each manlift.

Each inclined stairway chairlift.

Each escalator or moving walk unit powered by one motor shall be considered as a separate unit.

118.8 Signs. Fees stated for this provision in the city fee schedule shall be charged for all signs covered by the *Houston Sign Code* as follows:

1. Site inspections.

2. Electrical inspections – install and final.

3. Reinspection fee:

Site, hole and electrical, (all).

4. Construction and reconstruction permit:

For the first 32 square feet (2.9728 m²) of one sign face or fraction thereof.

Each square foot or fraction thereof of one sign face exceeding 32 square feet.

5. Operating permit—on-premise signs. An operating permit for an on-premise sign shall be issued as a renewable permit on an annual basis upon payment of the following fees:

For the first 32 square feet (2.9728 m²) of one sign face or fraction thereof.

Each square foot or fraction thereof of one sign face exceeding 32 square feet (2.9728 m²).

6. Operating permit—off-premise signs. An operating permit for off-premise signs that advertise the sale or rental of real property or direct persons to the location of real property for sale or rent, which signs are limited to 40 square feet (3.7161 m²) in sign face area, shall be a nonrenewable one-year permit as authorized in Section 4612(b) of the *Houston Sign Code*.

7. Operating permit. An off-premise operating permit for a sign other than as provided in item 6 above shall be issued as a renewable permit on an annual basis.

8. New registration for changeable message signs/high technology signs (per face).
9. Replacement of lost or damaged operating tag.
10. Plan examination fee.
11. Plan reexamination due to alteration of approved plan.
12. Ground sign exceeding 14 feet (4,267 mm).

All other fees required by Section 118 shall be paid in addition to the fees in Section 118.8.

118.9 Medical gas permits. Fees stated for this provision in the city fee schedule shall be charged for each gas outlet, with a minimum fee stated for this provision in the city fee schedule.

118.10 Alarms, detectors, electronic locks, central station security and testing. Fees stated for this provision in the city fee schedule shall be charged for alarms, detectors, central station security and testing.

118.11 High-piled storage review and inspection. The fees stated for this provision in the city fee schedule shall be charged for the plan review and inspection of high-piled storage buildings.

Onsite reinspection fee. If a third onsite reinspection is necessary, the permit holder shall pay the fee stated for this provision in the city fee schedule.

Revisions. The fee stated for this provision in the city fee schedule shall be charged for review of revisions to plans.

118.12 Group H occupancy or tank storage review and inspection. The fees stated for this provision in the city fee schedule shall be charged for the plan review and inspection of Group H occupancy buildings, storage tanks or buildings with tank storage.

Onsite reinspection fee. If a third onsite reinspection is necessary, the permittee shall pay the fee stated for this provision in the city fee schedule.

Revisions. The stated for this provision in the city fee schedule shall be charged for revisions to plans.

SECTION 119

PRIVATE PLAN REVIEW AND INSPECTION SERVICES

119.1 Applicability. The application of this section is limited to those Group R-3 occupancy structures that constitute *dwelling*s, as defined in this code, and to those Group U occupancies, such as garages, carports, fences and other structures, that are associated with *dwelling*s.

119.2 Scope. This section applies to any permit required under the *Construction Code* for the construction, repair, or renovation of a structure to which this section applies.

119.3 Program established. The *building official* may establish a private plan review and inspection program under which qualified persons who are not city employees may review plans, conduct certain building inspections, and provide related services for structures to which this section applies to assure compliance with all applicable construction codes. The program shall be conducted in accordance with the regulations and forms promulgated by the *building official*, which shall, without limitation, address the following:

1. Qualifications of the firms and individuals authorized to perform plan reviews, conduct inspections, and provide other related permit services. The qualifications shall include licensing requirements in accordance with any applicable laws and

regulations and certification requirements in accordance with state or federally recognized standards.

2. Requirement of appropriate liability coverage in an amount of not less than \$1,000,000.00, per occurrence, with agreements to hold harmless and indemnify the *jurisdiction* and coverage of the *jurisdiction*, as an additional insured, for the protection of the *jurisdiction* and other persons who may be affected by the performance of any services under the program.
3. Provisions to ensure that the firms and individuals participating in the program will act independently of building owners, contractors, and others so as to avoid conflicts of interest.
4. Provisions for any non-building-code-related review of plans and issuance of permits to applicants who utilize plan review, inspection, and other related services under the program.
5. Provisions regarding the keeping of records and filing of reports with the *building official*.
6. Administrative provisions for the acceptance, suspension, and revocation of the right of a firm or individual to participate in the program, which shall include elements of due process, including a right of appeal to a hearing officer designated by the director of Houston Public Works, whose decision, notwithstanding any other provision of this code, shall be final and not appealable to the General Appeals Board or city council.
7. Provisions to ensure that no firm or individual may be certified to participate in the program unless qualified to conduct plan reviews and inspections under the codes currently enforced by the *jurisdiction* and/or a nationally recognized uniform or international code.
8. Provisions relating to fees charged by any firm or individual for services rendered under the program, including any fees required by law to be paid directly to the *jurisdiction* and remitted by the *building official* to a firm or individual.
9. Provisions prohibiting any private developer, builder, or contractor from employing any firm or individual, including subcontractors, to perform more than 25% of that developer's, builder's or contractor's services under the program in any one calendar year unless a greater amount is approved by the *building official*.
10. Provisions requiring any private developer, builder or contractor utilizing any services under the program and the *building official* to file a report as set forth below:
 - 10.1. Each private developer, builder or contractor utilizing any services under the program shall file a report with the *building official*, supported by affidavit, containing the following information:
 - 10.1.1. The total number of permits received during the preceding calendar year for the construction of any residential structure in connection with which services under the program were rendered;
 - 10.1.2. The name of each firm or individual utilized under the program on each residential structure during the reporting period; and
 - 10.1.3. A statement certifying that the developer, builder or contractor has fully complied with all rules and regulations under the program

during the reporting period, including, but not limited to, all rules governing the maximum number of plan reviews and inspections permitted to be performed by any firm or individual, including subcontractors, rendering any services under the program.

The report shall be filed with the *building official* not later than the last day of January and July in each calendar year and shall cover the preceding 6-month period ending on the last day of December and June, respectively, in each year.

10.2. The *building official* shall submit a report with the mayor and city council containing the following information:

10.2.1. A listing of the names of all companies or contractors that utilized individuals or firms for services under the program and the name of each firm or individual so utilized;

10.2.2. Names of all firms and individuals approved to perform services under the program;

10.2.3. Total number of plan reviews and inspections performed by firms and individuals for each private developer, builder or contractor operating under the program;

10.2.4. Number of plan rechecks and oversight inspections conducted by the *jurisdiction* for each firm or individual utilized under the program and the percentage of that firm's or individual's work, including subcontractors, so inspected;

10.2.5. The number of code violations found through plan rechecks and oversight inspections, including the name of the firm or individual, including subcontractors, who performed such services;

10.2.6. A list of any firms or individuals removed from the program by the *building official*; and

10.2.7. An assessment of program effectiveness as demonstrated by available data, including comments and complaints received by the *jurisdiction* regarding the program pertaining to work performed by a participating developer, builder or contractor, or any firm or individual, including subcontractors, providing private plan review or inspection services under the program.

The *building official's* report shall be submitted to the mayor and city council not later than the last day of August and February in each calendar year and shall cover the preceding 6-month period ending on the last day of July and January, respectively, in each year and may include such additional information relating to the program as the *building official* may deem appropriate.

11. Provisions prohibiting any private plan reviewer or inspector from being related to building owners, contractors, and other similarly situated individuals or entities within the third degree of consanguinity or within the second degree of affinity.

119.4 Oversight inspections. The provisions of this section do not affect the *jurisdiction* of the *building official* over any work or preclude oversight inspections by the *building official* of structures that are subject to the provision of services under the program. For purposes of quality

assurance, the *building official* shall be authorized to recheck plans, perform inspections or reinspections, issue stop work orders, and take any and all actions that are authorized to be taken under the *Construction Code*. No prior notice need be provided to any program firm or individual, contractor, or owner, unless otherwise required by law.

119.5 Fees. To cover administrative costs, including registration of firms and individuals, management of the program, and oversight inspections, the *building official* shall assess fees equal to 25 percent of the amount otherwise payable under this code for any permit, but not less than the minimum fee as required in the city fee schedule. In addition to the reduced permit fees charged in connection with the program, an additional fee as stated in the city fee schedule per payment voucher issued shall be assessed to cover the *jurisdiction's* costs in connection with any fee required to be paid to and remitted by the *jurisdiction*. If any contractor or owner requests an inspection by the *building official* of any structure that is subject to private inspection under this section, then the *building official* may perform the same for the fee stated for this provision in the city fee schedule. The administrative fee that is payable under this code shall be collected in addition to the fees otherwise provided under this section.

CHAPTER 2

DEFINITIONS

201.3 Specific construction and Terms defined in other codes. Where specific rules of construction or terms are not addressed or defined in this code and are addressed or defined in the City Code or another volume of the Construction Code ~~International Energy Conservation International Fuel Gas Code, International Fire Code, International Mechanical Code or International Plumbing Code~~, such terms or specific constructions herein shall have the meanings ascribed to them as in those ~~codes~~ other volumes, as applicable to the construction and proposed scope of work hereunder.

SECTION 202 DEFINITIONS

{EDITORIAL NOTE: ALL PORTIONS OF SECTION 202 NOT SHOWN REMAIN AS SET FORTH IN THE 2015 IBC.}

ALLEY. A public or private right-of-way that is not used primarily for through traffic and that provides vehicular access to rear entrances to buildings or properties that front on an adjacent street.

[A] ALTERATION. Any construction or renovation to an existing structure other than repair or addition. Also, a change to an existing building, or an electrical, gas, mechanical or plumbing system that involves an extension, addition or change to the arrangement, type or purpose of the original installation that requires a permit.

ANCHOR. Metal rod, wire or strap that secures masonry to its structural support.

APPROVAL. Official acknowledgement from the *building official* that the proposed work or completed work conforms to this code.

[BS] APPROVED FABRICATOR. An established and qualified person, firm or corporation registered and certified with the *jurisdiction* and approved by the *building official* pursuant to Chapter 17 of this code to provide specific products and/or services that document compliance with the *Construction Code*.

AS-GRADED. The extent of surface conditions on completion of grading.

ASME CODE. The current *ASME/ANSI A17.1 Safety Code for Elevators and Escalators*; an American National Standard published by the American Society of Mechanical Engineers. See Section 3001.2.

AUTHORITY HAVING JURISDICTION. The director of Houston Public Works. This definition shall include the *authority having jurisdiction's* authorized representative.

AUTHORIZED COMPANY. An established and registered company regularly engaged in the installation or repair of elevators, escalators, dumbwaiters, or moving walks.

AUTHORIZED INSPECTOR. An inspector who is qualified as QEI-1 and is registered with the *building official*.

BATHING ROOM (BATHROOM). A room fully enclosed by exterior walls and/or interior partitions, which contains one or more shower stalls or bathtubs, and which may or may not also contain one or more toilets or urinals and one or more handwashing sinks.

BEDROCK. In-place solid rock.

BUILDING CODE. The *City of Houston Building Code*, as adopted and amended by this *jurisdiction*.

[A] BUILDING OFFICIAL. ~~The officer or other designated authority charged with the administration and enforcement of this code, or a director of Houston Public Works or the duly authorized representative designated by the director to act as the chief construction code enforcement official of the *jurisdiction*; also known as *chief building official*.~~ The term also includes the Houston Airport Systems building official who may be designated by the building official to perform *Construction Code* permitting and enforcement activities on Houston Airport Systems premises.

BULKHEAD. A retaining wall designed to retard erosion of or prevent sloughing off of the banks along a waterfront or lake.

CERTIFICATE OF COMPLIANCE. A certificate stating that materials and products meet specified standards or that the scope of work under a specific permit was done in compliance with approved construction documents. Any reference in the *Construction Code* to a “CC”, certificate of completion, or a certificate of inspection issued by this *jurisdiction*, is a reference to a certificate of compliance as defined herein.

CERTIFYING ORGANIZATION. An independent organization that is competent and widely recognized to accredit elevator inspectors, has been approved by an organization that is nationally recognized, and is approved or recognized by the *building official* as competent to certify elevator inspectors.

CITY CODE. The *Code of Ordinances, City of Houston, Texas*.

CITY ENGINEER. Has the meaning ascribed in Section 1-2 of the *City Code*.

CITY FEE SCHEDULE. The schedule of fees charged by the city for various permits, licenses, authorizations and services, which is maintained on the city’s website.

CIVIL ENGINEER. A professional engineer registered with the State of Texas to practice in the field of civil engineering.

CIVIL ENGINEERING. The application of the knowledge of the forces of nature, principles of mechanics and the properties of materials to the evaluation, design and construction of civil works.

CLEANOUT. An opening to the bottom of a grout space of sufficient size and spacing to allow the removal of debris.

CODE OFFICIAL. The Building Code Enforcement employees, including but not limited to, the *building official*, plan analysts, field inspectors, and other technical staff charged with the administration and enforcement of this code as specifically delegated by the *authority having jurisdiction*. The *code official* is authorized to approve designs, construction, equipment, materials, installations, processes, procedures, practices, and other duties necessary to administer, verify and document compliance with the *Construction Code*, ordinances, and other laws and policies as specifically delegated by the *chief building official*, *fire chief*, and the *authority having jurisdiction*.

COMMERCIAL PIER. One of more piers, any part of which is used for any of the following:

1. Commercial boat livery.
2. Commercial fishing camp.
3. Public pier.
4. Private club.
5. A pier used by the owner of two or more residential lots for access to the lake.
6. A pier at which access to the lake may be provided for the payment of an admission or membership fee.
7. A pier at which vessel are moored for money or other valuable consideration.
8. A pier at which two or more vessels that have a cab, a toilet or a sewage holding tank are moored.

COMPRESSIVE STRENGTH OF MASONRY. Maximum compressive force resisted per unit of net cross-sectional area of masonry, determined by the testing of masonry prisms.

CONSTRUCTION CODE. Has the meaning ascribed in Section 1-2 of the *City Code*.

CORROSION RESISTANT or NONCORROSIVE. Refers to a material having a corrosion resistance equal to or greater than a hot-dipped galvanized coating of 1.5 ounces of zinc per square foot (457.75 g/m²) of surface area. When an element is required to be corrosion resistant or noncorrosive, all of its parts, such as screws, nails, wire, dowels, bolts, nuts, washers, shims, anchors, ties and attachments, shall also be corrosion resistant or noncorrosive.

[BS] DANGEROUS. Any building meeting the definition of a dangerous building as defined in Chapter 10, Article IX, of the *City Code* or any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The building or structure has collapsed, has partially collapsed, has moved off its foundation, or lacks the necessary support of the ground.
2. There exists a significant risk of collapse, detachment or dislodgement of any portion, member, appurtenance or ornamentation of the building or structure under service loads.

DRIVEWAY. An approved surface on private premises that is designated for motor vehicle use and connected to the driveway approach either directly or by other improved surfaces. (For purposes of Section 3112, the definition of private street shall be the same as the definition of driveway.)

DRIVEWAY APPROACH. An entrance to and exit from private premises that is designated for motor vehicle use and is not open for vehicle traffic except by permission of the owner of such private premises. The approach is located entirely in the right-of-way, between the edge of the roadway paving and the property line. This definition shall also include the term “driveways” as defined in the *Infrastructure Design Manual*.

DUPLEX. An individual free-standing structure containing not more than two dwelling units, single-family dwellings, or households, each containing a separate means of egress.

EARTH MATERIAL. Any rock, natural soil or fill or any combination thereof.

EGRESS COURT. A court or yard with a minimum width of 36 inches (914.4 mm) which provides access to a public way for one or more exits or emergency escape and rescue openings.

ELECTRICAL CODE. The *City of Houston Electrical Code* as adopted and amended by this jurisdiction.

ENERGY CONSERVATION CODE. The *City of Houston Residential Energy Conservation Code* or the *City of Houston Commercial Energy Conservation Code*, both as adopted and amended by this jurisdiction.

ENGINEERING GEOLOGIST. A geologist experienced and knowledgeable in engineering geology.

ENGINEERING GEOLOGY. The application of geologic knowledge and principles in the investigation and evaluation of naturally occurring rock and soil for use in the design of civil works.

ENTERPRISE. A use or activity on, or of, a tract of land or within a building or structure, in whole or in part, that includes inside and outside storage or use of hazardous materials exceeding the *maximum allowable quantity limits (MAQs)* per control area that constitutes a Group H-1, H-2 or H-3 occupancy as described in Section 307. The term also includes any Group H-4 occupancy, in whole or in part, that includes storage (both interior and exterior) of hazardous materials exceeding the *MAQs* per control area as described in Section 307 if any highly toxic material is manufactured, processed, generated, stored or used. Otherwise, Group H-4 occupancies are not included. The term also does not include:

1. Any public water or wastewater treatment facility that is being operated under regulations promulgated by state or federal agencies, including but not limited to the United States Environmental Protection Agency and the Texas Commission on Environmental Quality;
2. Areas or spaces up to 500 square feet (46.4515 m²) each in research labs operated under the authority of a hospital, college, or university, and classified as H-2, H-3 or H-4, with an aggregate maximum area of ten percent on each floor; or
3. Any area or space containing fuel storage for generators, fire pumps, above or underground fuel storage associated with motor fuel-dispensing facilities.

ENTERPRISE PERMIT. A current license or document issued by the jurisdiction's director of planning and development authorizing the holder to operate an enterprise issued under Chapter 28, Article VII of the *City Code*. Except where specific reference is made to a restricted permit or an unrestricted permit, the term "permit" includes a registration of a nonconforming enterprise prior to February 16, 1997.

ESCALATOR SKIRT DEFLECTOR DEVICE. A device that reduces the risk of objects coming into contact with the skirt of the elevator.

EXISTING BUILDING CODE. The *City of Houston Existing Building Code*, as adopted and amended by this jurisdiction.

EXISTING STRUCTURE. A structure erected prior to the date of adoption of the appropriate this code, or one for which a legal building permit has been issued. For application of provisions in flood hazard areas, an existing structure is any building or structure for which the start of construction commenced before the effective date of the community's first flood plain management code, ordinance or standard.

FAIL-SAFE. A design condition associated with an electronic locking device or system that incorporates a feature for automatically counteracting the effect of an anticipated possible power source failure; also, a design condition eliminating or mitigating a hazardous condition by compensating automatically for a system or component malfunction, or power failure.

FIRE APPARATUS ACCESS ROAD. A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane, public street, private street, parking lot lane and access roadway.

FIRE CHIEF. Has the meaning ascribed in Section 34-53 of the *City Code*.

FIRE CODE. The *City of Houston Fire Code*, as adopted and amended by this *jurisdiction*.

FIRE CODE OFFICIAL. The *jurisdiction's* fire marshal, who is charged with the administration and enforcement of the *Fire Code*, or an authorized representative.

FIRE MARSHAL. The fire marshal of this *jurisdiction* or such other person as the fire chief of this *jurisdiction* may designate.

GOOD CONDITION. Describes materials that have been visually inspected by the *building official* and determined to be fit for installation. Materials shall be in sufficient condition to reuse without potential harm to the health, safety, and welfare of the public. Materials shall not have any mold or water damage. Wood products shall not contain any holes other than wire or nail holes. Wood products shall not contain rot, splits, buckling, warpage or other deterioration that would prevent the material from functioning in its intended use. The condition shall be determined by the *building official*.

GRADE, ROUGH. The stage of grading at which the grade approximately conforms to the approved plan.

GRADING. The act of leveling to a smooth horizontal or sloping surface. Also see **SITE GRADING.**

GRADING, ENGINEERED. Any *grading* involving in excess of 1,000 cubic yards (764.5549 m³) of fill.

GRADING, REGULAR. Any *grading* involving less than or equal to 1,000 cubic yards (764.5549 m³) of fill.

GRUB OR GRUBBING. To clear vegetation from property by digging up roots and stumps to a depth not exceeding 24 inches (609.6 mm).

HIGH-RISE BUILDING. A building with ~~an occupied floor~~ located more than 75 feet (22,860 mm) above the lowest level of fire department vehicle access.

Exception: For the purpose of establishing a building as a high-rise, the uppermost floor located more than 75 feet above the lowest level of fire department access used for housing building systems mechanical equipment is exempt.

HIGHWAY, STREET OR ROAD. A general term denoting a public way for the purpose of vehicle travel, including the entire area within the right-of-way.

HOUSTON SPECIAL FLOOD HAZARD AREA. The land in the special flood hazard area and in the floodplain within the city that is subject to a 0.2 percent or greater chance of flooding in any

given year and is designated as unnumbered A Zones, AE Zones, AO Zones, AH Zones, A1 through A99 Zones, VO Zones, V1 through V30 Zones, VE Zones, V Zones, or X Shaded Zones.

INFRASTRUCTURE DESIGN MANUAL. The design manual with latest revision at the time of permit application that sets forth the standards for infrastructure design and construction as approved by the Office of the City Engineer in Houston Public Works.

INTERNATIONAL BUILDING CODE. Any reference herein to the *International Building Code* shall be construed as referring to the *City of Houston Building Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL ENERGY CONSERVATION CODE. Any reference herein to the *International Energy Conservation Code* shall be construed as referring to the *City of Houston Residential Energy Conservation Code* or the *City of Houston Commercial Energy Conservation Code*, both as adopted and amended by this *jurisdiction*.

INTERNATIONAL EXISTING BUILDING CODE. Any reference herein to the *International Existing Building Code* shall be construed as referring to the *City of Houston Existing Building Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL FIRE CODE. Any reference herein to the *International Fire Code* shall be construed as referring to the *City of Houston Fire Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL FUEL GAS CODE. Any reference herein to the *International Fuel Gas Code* shall be construed as referring to the *City of Houston Plumbing Code*, as adopted by this *jurisdiction*.

INTERNATIONAL MECHANICAL CODE. Any reference herein to the *International Mechanical Code* shall be construed as referring to the *City of Houston Mechanical Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL PLUMBING CODE. Any reference herein to the *International Plumbing Code* shall be construed as referring to the *City of Houston Plumbing Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL PROPERTY MAINTENANCE CODE. Any reference herein to the *International Property Maintenance Code* shall be construed as referring to Chapter 10, Article IX, of the *City Code*, which is also known as the *Houston Building Standards Code*.

INTERNATIONAL RESIDENTIAL CODE. Any reference herein to the *International Residential Code* shall be construed as referring to the *City of Houston Residential Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL SWIMMING POOL AND SPA CODE. Any reference herein to the *International Swimming Pool and Spa Code* shall be construed as referring to the *City of Houston Swimming Pool and Spa Code*, as adopted and amended by this *jurisdiction*.

JETTY. A permanent structure built into a body of water to direct the current or protect a harbor.

LAKE HOUSTON. Has the meaning ascribed to it by Chapter 23 of the *City Code*. The shoreline of an area bounded on the south by the Lake Houston Dam, on the northwest by the West Lake Houston Parkway Bridge and on the northeast by an imaginary line running generally east to west

that intersects the confluence of Luce Bayou and the East Fork of the San Jacinto River, and is more particularly described as beginning at a point located at 30° 2' 31.67" N, 95° 7' 12.09" W and running generally west to 30° 2' 32.02" N, 95° 7' 36.14" W.

LOADING BERTH. A space for the loading, unloading or parking of trucks and motor vehicles other than motor vehicles principally designed for passengers that complies with Section 3112.4.6 and with the requirements of Chapter 26, Article VIII, of the *City Code*.

LOCAL STREET OR ROAD. A street or road primarily intended for access to a residence, business or other abutting property.

MAJOR THOROUGHFARE. (1) A public street that is designated as a principal thoroughfare, a thoroughfare or a major collector on the most recent "Major Thoroughfare and Freeway Plan" approved by the *jurisdiction's* city council; or (2) any street that is designated as an express street pursuant to Section 45-39 of the *City Code* and is shown in the "Express Street Plan" of the *jurisdiction's* traffic engineer.

MANLIFT. A device consisting of a power-driven endless belt provided with steps or platforms and handholds attached to it for transportation of personnel from floor to floor.

MECHANICAL CODE. The *City of Houston Mechanical Code*, as adopted and amended by this *jurisdiction*.

MOBILE FOOD PREPARATION VEHICLES. Vehicles that contain cooking equipment that produce smoke or grease-laden vapors for the purpose of preparing and serving food to the public including mobile food units as defined in Chapter 20 of the *City Code*. For the purpose of this code, vehicles intended for private recreation shall not be considered a mobile food unit or mobile food preparation vehicles.

MOBILE FOOD UNIT. Has the meaning ascribed in Section 20-18 of the *City Code*.

MULTI-FAMILY RESIDENTIAL STRUCTURE. A structure with three or more attached single-family dwellings, dwelling units, townhouses, apartments or condominiums.

NONABSORBENT MATERIAL. Any material that is used as an applied finish material over sheetrock or other substrate or structure and that maintains its resistance to moisture absorption throughout its thickness even if scratched or chipped. Examples of approved non-absorbent materials shall include, but not be limited to: metal, plastic, FRP, Formica, or similar non-wood veneer sheet goods; and non-absorbent stone, ceramic, porcelain, or similar tile products. Epoxy paint or other similarly-applied surface coating products that can be scratched or chipped to reveal underlying absorbent substrate shall not be considered approved non-absorbent materials.

ONE- AND TWO-FAMILY DWELLING. An individual free-standing structure containing not more than two *dwelling units*, also referred to as a *dwelling*, *duplex* or single-family dwelling depending on the number of *dwelling units* within.

OPEN BUILDING (For Chapter 9). A building having each wall at least 80 percent open.

PARKING LOT. A paved, surfaced or leveled area designed and ordinarily used for accessory or public parking of motor vehicles, including commercial parking areas available for lease and leased premises available for public parking. The term shall not include parking garages.

PAVING. All firm flat surfaces made of stone, brick, concrete, or other material that are located inside private property and not defined as a driveway or parking lot.

PEDESTRIAN. Any person afoot.

PERSONNEL HOIST. A special-purpose elevator or hoist erected outside a building or structure for transporting workers or materials in connection with the construction, alteration, maintenance or demolition of a building, structure, or other works.

PIER. Any pier, wharf, boat dock, boat shed, gangway or other platform or structure in or adjoining the water to which vessels may be moored, from which vessels may be boarded, or on which persons may walk or sit.

PLUMBING CODE. The *City of Houston Plumbing Code*, as adopted and amended by this *jurisdiction*.

PRIVATE PIER. A pier other than a commercial pier.

PROFESSIONAL INSPECTION. The inspection required by this code to be performed by the civil engineer, soils engineer or engineering geologist. Such inspections include those performed by persons supervised by such engineers or geologists and shall be sufficient to form an opinion relating to the conduct of the work.

PROPERTY MAINTENANCE CODE. Chapter 10, Article IX, of the *City Code* relating to abatement of dangerous buildings, also known as the *Houston Building Standards Code*, as adopted and amended by this *jurisdiction*.

PUBLIC WAY. A street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 40-20 feet (3048-6,096 mm).

RECYCLING. A series of activities by which materials that would become or otherwise remain waste are diverted from the solid waste stream by collection, separation, and processing and are used as raw materials in the manufacture of goods sold or distributed in commerce or the reuse of such materials as substitutes for goods made of virgin materials.

[A] REPAIR. The reconstruction or renewal of any part of an existing building for the purpose of its maintenance or to correct damage using like for like materials.

RESIDENTIAL CODE. The *City of Houston Residential Code*, as adopted and amended by this *jurisdiction*.

RESTROOM. A room fully enclosed by exterior walls and/or interior partitions, which contains one or more toilets or urinals and one or more handwashing sinks, but no shower stall or bathtub.

REUSED MATERIALS. Materials that are used more than once in their original form for their original purpose or for another purpose without any special processing. The term includes materials that contain post-industrial or post-consumer waste as defined by the Federal Trade Commission as well as approved materials identified in Appendix R of this code.

RIGHT-OF-WAY. The entire area between the property boundary lines of every way (including but not limited to roads, streets, alleys, highways, boulevards, bridges, tunnels, or similar thoroughfares), whether acquired by purchase, grant, or dedication by the state or federal government, or acceptance by the *jurisdiction* for public use.

ROADWAY (GENERAL). The portion of a highway, including shoulder, for vehicular use.

SIDEWALK. That portion of a street between the curb lines or the lateral lines of a roadway and the adjacent property lines that is intended for the use of pedestrians.

SIGN CODE. The *Houston Sign Code*, which is Chapter 46 of this code but is published as a separate document.

SINGLE-FAMILY DWELLING. An individual free-standing residential structure intended to serve a single-family, or household, as a dwelling and/or other uses authorized by the *Building Code* and *Residential Code*.

SITE GRADING. Any lot or parcel of land or contiguous combination thereof, under the same ownership, where grading is performed or permitted.

SLOPE. An inclined ground surface, the inclination of which is expressed as a ratio of horizontal distance to vertical distance.

SOIL. Naturally occurring superficial deposits overlying bedrock.

SOILS ENGINEER (GEOTECHNICAL ENGINEER). An engineer experienced and knowledgeable in the practice of soils engineering (geotechnical engineering).

SOILS ENGINEERING (GEOTECHNICAL ENGINEERING). The application of the principles of soils mechanics in the investigation, evaluation and design of civil works involving the use of earth materials and the inspection or testing of the construction thereof.

SOUND TRANSMISSION CLASS (STC). An integer rating relating to the quality of sound attenuation for building partitions such as walls, ceilings, doors, and windows.

[BS] SPECIAL INSPECTOR. A qualified person employed or retained by an *approved* agency registered and/or certified with the *jurisdiction* and *approved* by the *building official* as having the competence necessary to inspect a particular type of construction requiring *special inspection*.

STAIRWAY. One or more *flights* of *stairs*, either exterior or interior, with the necessary landings and platforms connecting them, to form a continuous and uninterrupted passage from one level to another. A stair or ladder used only to attend equipment or to access an attic or window well shall not be considered a stairway.

SWIMMING POOL AND SPA CODE. The *City of Houston Swimming Pool and Spa Code*, as adopted and amended by this *jurisdiction*.

TEXAS ACCESSIBILITY STANDARDS (TAS). The accessibility standards applicable to buildings and facilities constructed within the state of Texas as promulgated by the Texas Department of Licensing and Regulation pursuant to *Texas Government Code* Chapter 469.

TOILET ROOM. A room fully enclosed by exterior walls and/or interior partitions, which contains one or more toilets (water closets) or urinals, but no handwashing sink, shower stall, or bathtub.

TOWER STRUCTURE. A structure other than a building as defined previously in this chapter that has a height normally greater than its largest horizontal dimension. Examples of tower structures include antenna supports, chimneys, tank supports, sign supports, equipment supports, and other structures as determined by the *building official*.

[A] TOWNHOUSE. A multi-family residential structure constructed in a group of three or more attached single-family dwelling units constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space a yard or public way on and least not less than two sides, which may or may not include lot lines or property lines separating each dwelling unit.

TRANSIT SHED. A covered structure erected on a wharf or quay for the temporary storage of goods in transit between ship and land carrier or warehouse.

UL. Means Underwriters Laboratories Inc., a product testing laboratory for safety and performance

UNSAFE. Buildings, structures or equipment that are unsanitary, or that are deficient due to inadequate means of egress facilities, inadequate light and ventilation, or that constitute a fire hazard, or in which the structure or individual structural members meet the definition of “Dangerous,” or that are otherwise dangerous to human life or the public welfare, or that involve illegal or improper occupancy or inadequate maintenance shall be deemed unsafe. A vacant structure that is not secured against entry shall be deemed unsafe.

UTILITY OFFICIAL. The director of Houston Public Works and the director’s designee. The term primarily relates to those Houston Public Works employees who are engaged in activities relating to the delivery of water and wastewater services.

VALUATION. The total cost of construction to the end user, excluding the land purchase costs and the overhead attributed to the land purchase. The value of donated goods and services is included.

WHEELCHAIR LIFT. A vertical wheelchair lift or an inclined wheelchair lift as governed by the *Elevator Safety Code*, whether in a commercial, multi-family residential, or single-family dwelling.

[BS] WIND-BORNE DEBRIS REGION. Areas within hurricane-prone regions located:

1. Within 1 mile (1.61 km) of the coastal mean high-water line where the ultimate design wind speed, V_{ult} , is 130 mph (58 m/s) or greater; or
2. In areas where the ultimate design wind speed is 140 mph (63.6 m/s) or greater; or Hawaii.

For *Risk Category II* buildings and structures and *Risk Category III* buildings and structures, except health care facilities, the wind-borne debris region shall be based on ~~Figure 1609.3.(1)~~ the windspeed associated with *Risk Category II*. For *Risk Category IV* buildings and structures and *Risk Category III* health care facilities, the windborne debris region shall be based on ~~Figure 1609.3(2)~~ the windspeed associated with *Risk Category III and IV*.

WORK OF ART. Paintings, mural decorations, stained glass, statues, bas-reliefs or other sculptures, monuments, fountains, arches or other structures of a permanent or temporary character intended for ornament or commemoration.

CHAPTER 3

USE AND OCCUPANCY CLASSIFICATION

305.3 Specific requirements. Daycare and educational occupancies shall not allow children of second grade or lower above the level of exit discharge unless the following provisions are met:

1. The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1; and
2. When children above the second grade are located on the same floor level as children of second grade or lower, the children of the second grade or lower shall have access to and exclusive use of at least two means of egress to the exterior.

[F] 307.1.1 Uses other than Group H. An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

1. Buildings and structures occupied for the application of flammable finishes, provided that such building or areas conform to the requirements of Section 416, NFPA 33, NFPA 34 and the *International Fire Code*.
2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the *International Fire Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* constructed in accordance with Section 707 or 1-hour *horizontal assemblies* constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterruptable power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and *ventilation* is provided in accordance with the *International Mechanical Code*.
10. Corrosive personal or household products in their original packaging used in retail display.
11. Commonly used corrosive building materials.

12. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *International Fire Code*.
13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per *control area* in Group M or S occupancies complying with Section 414.2.5.
14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *International Fire Code*.
15. Any building owned by the jurisdiction, located on any jurisdiction airport, that is leased and used by a certificated air carrier for the in-transit storage of hazardous materials for a period of time that does not exceed 72 hours from the time such hazardous material is placed in the building until it is permanently removed.

NOTES:

1. Certificated air carrier is defined as: a U.S. or foreign airline operating scheduled or non-scheduled commercial services pursuant to certificates or exemptions issued by the United States Department of Transportation pursuant to 49 USC Section 40109, 41102, 41103, or 41302, and certificates or exemptions issued by the United States Federal Aviation Administration pursuant to 14 CFR Part 121, 125, 129 or 135.
2. City airport is defined in Chapter 9 of the City Code.
3. In-transit storage is defined as: the storage of materials which will be on-loaded onto or off-loaded from an aircraft owned, leased or operated by a certificated air carrier.

[F] 307.1.2 Hazardous materials. Hazardous materials in any quantity shall conform to the requirements of this code, including Section 414, and the *International Fire Code*.

Exception: The exempt amounts of hazardous materials stored in any building identified as exempted pursuant to the provisions of Section 307.1.1, Item 15.

307.1.3 Enterprise permit. Businesses and facilities storing or utilizing hazardous materials exceeding the maximum allowable quantity limits per control area identified in Section 307 and Tables 307.1(1) and 307.1(2) shall comply with Chapter 28, Article VII, of the City Code for a hazardous enterprise.

308.3 Institutional Group I-1. Institutional Group I-1 occupancy shall include buildings, structures or portions thereof for more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised environment and receive custodial care by persons other than parents or guardians or relatives by blood, marriage or adoption, including but not limited to facilities that provide care to children older than 2½ years of age and younger than 15 years of age. Buildings of Group I-1 shall be classified as one of the occupancy conditions specified in Section 308.3.1 or 308.3.2. This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living facilities
Congregate care facilities
Group homes
Halfway houses
Residential board and care facilities
Social rehabilitation facilities

312.1 General. Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

Agricultural buildings
Aircraft hangars, accessory to a one- or two-family residence (see Section 412.5)
Barns
Carports
Fences (other than masonry) more than ~~6 feet (1,829 mm)~~ 8 feet (2,438 mm) high
Grain silos, accessory to a residential occupancy
Greenhouses
Livestock shelters
Private garages
Retaining walls
Sheds
Stables
Tanks
Towers

312.2 Fences.

312.2.1 Location. Fence location is not restricted on property, but its foundation shall be subject to the same regulations on extensions onto public property as building foundations.

312.2.2 Barbed wire fencing. Barbed wire fencing is prohibited.

Exception: Fences constructed in part of barbed wire shall be permitted where all the barbed-wire is located six-feet or more from any adjacent ground; and provided further, a plot of ground containing one-acre or more may be fenced with barbed wire where such barbed wire does not abut to any extent whatsoever on a sidewalk or on an unimproved path or trail which is used by pedestrians for sidewalk purposes.

312.2.3 Electric fencing. The construction and use of electrified fencing shall be allowed in the city only as provided in this section subject to the following, or the *City Code*, whichever is more restrictive:

1. **Electrification:**

1.1 No electrified fence shall be installed or operated with a power source other than a storage battery not exceeding 12 volts direct current, charged primarily with a solar panel; provided, however, in case of inclement weather or other conditions that inhibit the ability of the solar panel to fully recharge the battery, a charging device may be utilized for such purpose, if connected in a manner that ensures that the charging device cannot provide a source of power to the fence. In no case shall an electrified fence be connected to any other electric power source.

1.2 The electric charge produced by the fence upon contact shall not exceed energizer characteristics set forth in paragraph 22.108 and depicted in Figure 102 of *International Electrotechnical Commission (IEC) Standard No. 60335-2-76*, as such standard exists upon January 30, 2008.

To the extent that the construction or installation of an electrified fence does not conflict with the requirements of this section, and unless otherwise specified herein, such fence shall be constructed or installed in conformance with the specifications set forth in IEC Standard 60335-2-76, as such standard existed upon January 30, 2008.

2. **Perimeter fence or wall:** No electrified fence shall be installed or used unless it is completely surrounded by a non-electrical fence or wall that is not less than six feet and not more than eight feet in height. The perimeter fence or wall shall be separated from the electrified fence by not less than one foot at its closest point, and by not more than five feet at its farthest point, except at gate openings, which shall be installed in conformance with the specifications set forth in Annex CC of *IEC Standard 60335-2-76*, as such standard existed upon January 30, 2008. The area between the perimeter wall or fence and the electrified fence shall be kept completely clear of landscaping, shrubbery, other fences, or any material of any kind. The lowest part of the perimeter fence or wall shall be constructed to follow the natural terrain to prevent penetration of such fence or wall at ground level. No part of a perimeter fence or wall shall be allowed to be in contact with an electrified fence by any means at any time. Perimeter fences adjacent to residential lots at the time of installation of the electric fence shall be either a wood privacy fence, a chain link fence with wood or plastic slats inserted into each weave of the fence, or an equivalent solid barrier fence.

3. **Location of Electric Fencing:**

3.1. Limited to commercial outdoor storage areas only.

3.2. Prohibited within five feet of any public right-of-way or sidewalk, unless the barrier fence is a wood privacy fence, a chain link fence with wood or plastic slats inserted into each weave of the fence, or an equivalent solid barrier fence.

- 3.3. Prohibited within 25 feet of any outdoor area utilized for the storage, use, or handling of hazardous materials as defined in the *Fire Code*.
4. **Height:** Shall be not less than six feet and not more than ten feet in height.
5. **Signage; other markings:** Shall be clearly identified with warning signs in English, Spanish and Vietnamese that read: "Warning—Electric Fence" placed along the non-electrical perimeter fence or wall at intervals of not less than 50 feet, however, in no instance may there be less than one sign on each side of the non-electrical perimeter fence or wall. In addition to the required signs, the top or uppermost horizontal frame member of any entry gate providing access to any property upon which an electrified fence is located, shall be marked by the placement or addition of a yellow reflective paint, tape or other permanent weatherproof marking along the full length of the gate frame, which marking shall be at least 3 inches wide and be kept in good condition to ensure its continued visibility.
6. **Hours of activation:** Shall not be activated between the hours of 8:00 a.m. and 5:00 p.m., except:
- 6.1 On days when the business is closed, such as weekends and holidays; or
- 6.2 When security personnel are available on-site to deactivate the electrical fence.
7. **Key box:** Shall be installed in accordance with Houston Fire Department Life Safety Bureau Standards.
8. **Registration:** Prior to the installation or use of any electrified fence, the property owner or lessee of the property upon which such fencing will be installed or used shall submit a completed registration for such fencing to the fire department using the form promulgated for that purpose by the fire chief. The property owner or lessee shall certify that the energizer of the fence complies with characteristics set forth in paragraph 22.108 and depicted in Figure 102 of IEC Standard No. 60335-2-76, as such standard exists upon January 30, 2008. No fee shall be charged in connection with the registration required by this item.

It shall be unlawful for any person to install, maintain, or operate an electrified fence in violation of this section. The provisions of this section shall not be applicable to any fence on zoological gardens owned by a political subdivision of the state.

SECTION 313

CARE FACILITY CLASSIFICATION

313.1 Classification. Adult and child care facilities shall be classified in accordance with Tables 313.1 and 313.2, and Sections 305, 308 and 310, as applicable. **Note:** The following Tables are general requirements and are subordinate to the specific provisions of applicable sections.

TABLE 313.1
CLASSIFICATION OF CARE FACILITIES

Attributes	Occupancy									
			<u>B (Out Patient)</u>	<u>B (ACF)²</u>	<u>I-1¹</u>	<u>I-2²</u>	<u>I-4¹</u>	<u>R-3</u>	<u>R-4</u>	<u>E</u>
	<u>Occupant Load</u>	<u>≤5</u>	<u>X</u>	<u>X</u>	<u>See R-3</u>	<u>See R-3</u>	<u>Primary occupancy or see R-3 in dwelling</u>	<u>X</u> <u>Can use IRC</u>		<u>Primary occupancy or see R-3 in dwelling</u>
		<u>6-16</u>	<u>X</u>	<u>X</u>	<u>See R-4</u>	<u>X</u>	<u>X</u> <u>See R-4</u>		<u>X</u>	
		<u>≥16</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>			<u>X</u>
	<u>Length of Stay</u>	<u><24 hrs</u>	<u>X</u>	<u>X</u>			<u>X</u>			<u>X</u>
		<u>≥24 hrs</u>			<u>X</u>	<u>X</u>			<u>X</u>	
	<u>Capability of Care Recipient</u>	<u>Capable of self-preservation</u>	<u>X</u>		<u>X</u>			<u>X</u>	<u>X</u>	
		<u>Incapable of self-preservation</u>		<u>X</u>		<u>≥5</u> <u>See R-3 if ≤5</u>		<u>X</u>		
	<u>Age</u>	<u><2.5 years</u>					<u>See 308.6.1 for option of E Daycare</u>			<u>See 308.6.1 for option</u>
		<u>≥2.5 years</u>								<u>X</u>

B (ACF) = Group B Ambulatory Care Facilities

1. Custodial Care.
2. Medical Care.

TABLE 313.2
CLASSIFICATION OF CARE FACILITIES
(LESS THAN 24-HOUR CARE)

<u>Type of Care (and/or age)</u>	<u>Capability of Residents</u>	<u>Number of Care Recipients</u>		
		<u>1-5</u>	<u>6-16</u>	<u>Over 16</u>
<u>Medical</u>	<u>Capable of self- preservation</u>	<u>B</u>	<u>B</u>	<u>B</u>
<u>Medical</u>	<u>Incapable of self- preservation</u>	<u>B (ACF)¹</u>	<u>B (ACF)</u>	<u>B (ACF)</u>
<u>Personal Care Services</u>				
<u>Over 2½ years</u>	<u>Capable of self- preservation</u>	<u>Part of primary occupancy²</u>	<u>E³</u>	<u>E³</u>
<u>Custodial</u>		<u>Part of primary occupancy²</u>	<u>I-4³</u>	<u>I-4³</u>
<u>Custodial</u>				
<u>2½ years or less</u>		<u>Part of primary occupancy²</u>	<u>I-4³ or E⁴</u>	<u>I-4³ or E⁴</u>

B (ACF) = Group B Ambulatory Care Facilities

1. Group B ambulatory care facilities have certain additional requirements that apply when there are four or more care recipients who are not capable of self-preservation.
2. If located within a dwelling unit: classified as R-3 or comply with IRC.
3. Within places of religious worship, care provided during religious functions shall be classified as part of the primary occupancy.
4. See Section 308.6.1. Child day care for more than five but no more than 100 shall be classified as a Group E where the rooms are located on the level of exit discharge and each care room has an exit door directly to the exterior.

CHAPTER 4

SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

403.5.3.1.1 Stairway communications system re-entry signage. A sign shall be provided directly above the communications system device that shall read: PUSH/LIFT TO CALL FOR RE-ENTRY.

403.5.3.2 Stairway re-entry doors. Stairway re-entry doors in exit enclosures shall be provided on every fifth-floor level, as well as the uppermost (top) floor level. Re-entry stairway doors shall be located on the same floor as each approved communications system re-entry sign in accordance with 403.5.3.1.

406.3.4.1 Dwelling unit separation. The private garage shall be separated from the *dwelling unit* and its *attic* area by means of gypsum board, not less than ½ inch (12.7 mm) in thickness, applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than a ⅝-inch (15.9 mm) Type X gypsum board or equivalent and ½-inch (12.7 mm) gypsum board applied to structures supporting the separation from habitable rooms above the garage. Door openings between a private garage and the *dwelling unit* shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than 1⅜ inches (34.9 mm) in thickness, or doors in compliance with Section 716.5.3 with a fire protection rating of not less than 20 minutes. Doors shall be *self-closing* and self-latching. Attic disappearing stairs may be installed in the garage ceiling provided the garage side exposed panel is not less than ⅜-inch-thick fire retardant-treated plywood, untreated plywood protected with ½-inch-thick gypsum board, or untreated plywood protected with 60-minute rated intumescent paint. In all cases, the opening protection material is applied to the garage side of the plywood.

406.4.9 Garage screening. Any part of an abutting development, as defined by Section 42-1 of the *City Code*, used as a parking garage structure shall provide an exterior cover for each floor of the structure where parking occurs that directly faces property in use for or restricted to single family residential use. The exterior cover shall be made of an opaque surface or screen mesh material of sufficient rating to block light from headlights onto adjacent property in use for or restricted to single-family residential use. The exterior cover shall be at least 42 inches (1,066.8 mm) in height measured from the finished floor where parking occurs and shall not be required on any floor of the parking garage structure that has a finished floor more than 50 feet (15,240.0 mm) in height from grade. For ramps and other sloped surfaces, the exterior cover shall be positioned to block light from headlights from crossing property lines onto adjacent properties in use for or restricted to single-family residential use.

406.9 Repair garages for natural gas- and hydrogen-fueled vehicles. Repair garages used for the repair of natural gas- or hydrogen-fueled vehicles shall be provided with an *approved* mechanical ventilation system. The mechanical ventilation system shall be in accordance with Sections 406.9.1 and 406.9.2.

Exception: Where *approved* by the code official, *natural ventilation* shall be permitted in lieu of mechanical ventilation.

406.9.1 Design. Indoor locations shall be ventilated utilizing air supply inlets and exhaust outlets arranged to provide uniform air movement to the extent practical. Inlets shall be uniformly arranged on exterior walls near floor level. Outlets shall be located at the high point of the room in exterior walls or the roof.

Ventilation shall be by a continuous mechanical ventilation system or by a mechanical ventilation system activated by a continuously monitoring natural gas detection system, or for hydrogen, a continuously monitoring flammable gas detection system, each activating at a gas concentration of 25 percent of the lower flammable limit (LFL). In all cases, the detection system shall shut down the fueling system in the event of failure of the ventilation system. The ventilation rate shall be not less than 1 cubic foot per minute per 12 cubic feet [$0.00138 \text{ m}^3/(\text{s} \cdot \text{m}^3)$] of room volume.

406.9.2 Operation. The mechanical ventilation system shall operate continuously.

Exceptions:

1. Mechanical ventilation systems that are interlocked with a gas detection system designed in accordance with the *Fire Code*.
2. Mechanical ventilation systems in garages that are used only for the repair of vehicles fueled by liquid fuels or odorized gases, such as CNG, where the ventilation system is electrically interlocked with the lighting circuit.

407.2.6 Nursing home cooking facilities. In Group I-1, Condition 1, occupancies, rooms or spaces that contain a cooking facility with domestic cooking appliances shall be permitted to be open to the corridor where all of the following criteria are met:

{EDITORIAL NOTE: NUMBERED ITEMS NOT LISTED REMAIN AS SET FORTH IN THE 2015 IBC.}

7. A domestic cooking hood installed and ~~constructed~~ ducted in accordance with Section ~~505~~ 504.2 of the *International Mechanical Code* is provided over the cooktop or range.

[F] 412.8.3 Means of egress. The *means of egress* from *heliports* and *helistops* shall comply with the provisions of Chapter 10 of this code, except no stairwell, stairway, guardrail or other structure shall be required or allowed to penetrate the take-off and landing area specified for the heliport or helistop. All ~~L~~-landing areas located on buildings or structures shall have two or more *means of egress*. For landing areas less than 60 feet (18,288 mm) in length or less than 2,000 square feet (187 m²) in area, the second *means of egress* is permitted to be a fire escape, *alternating tread device* or ladder leading to the floor below.

413.1 General. High-piled stock or rack storage in any occupancy group shall comply with the International Fire Code. A fire apparatus access road that meets applicable provisions of the Fire Code shall be provided for buildings used for high-piled combustible storage.

[F] 414.1.4 Tire disposers, chipping and shredding operations screening of property. Tire disposers, chipping and shredding operations shall comply with the provisions of this code and Life Safety Bureau (LSB) Standard No. 17. The entire property shall be surrounded by a fence at least 6 feet in height constructed of noncombustible material or by another suitable means to prevent access of any unauthorized persons. An adequate number of gates as determined by the *fire marshal* shall be provided in the surrounding fence or other barrier to provide ready access for fire apparatuses. Access gates shall be provided in accordance with LSB Standard No. 04, "Access Control Gates."

[F] 414.6 Outdoor storage, dispensing and use. The outdoor storage, dispensing and use of hazardous materials shall be in accordance with the International Fire Code and Chapter 28, Article VII, of the City Code (the Hazardous Enterprise Ordinance).

[F] 414.6.1 Weather protection. Where weather protection is provided for sheltering outdoor hazardous material storage or use areas, such areas shall be considered outdoor storage or use when the weather protection structure complies with Section 414.6.1.1 through 414.6.1.3.

Exception: For the purpose of applying Chapter 28, Article VII, of the City Code (the Hazardous Enterprise Ordinance), and the *fire separation distance* provisions of this code, canopies providing weather protection for quantities of hazardous materials exceeding the maximum allowable quantity limits per control area identified in Section 307 and Tables 307.1(1) and 307.1(2) shall be classified in the appropriate Group H occupancy.

414.7 Enterprise permit. Businesses and facilities storing or utilizing hazardous materials exceeding the *maximum allowable quantity* limits per control area identified in Section 307 and Tables 307.1(1) and 307.1(2) shall comply with Chapter 28, Article VII, of the City Code for a hazardous enterprise.

[F] 415.2 Definitions. The following terms are defined in Chapter 2:

{EDITORIAL NOTE: DEFINITIONS NOT LISTED REMAIN AS SET FORTH IN THE 2015 IBC.}

HPM FLAMMABLE LIQUID.

[F] 421.5 Exhaust ventilation. Hydrogen fuel gas rooms shall be provided with mechanical exhaust ventilation in accordance with the applicable provisions of ~~Section 502.16.1~~ of the International Mechanical Code and Section 2307.1 of the Fire Code.

[F] 422.6 Electrical systems. In ambulatory care facilities, the essential electrical system for electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of Chapter 27 and NFPA 99.

SECTION 427
REUSE OF BUILDING MATERIALS

427.1 Reuse of building materials. Reuse of building materials shall be allowed in accordance with Appendix R.

SECTION 428
ENERGY SYSTEMS

428.1 General. Energy systems shall be installed in accordance with NFPA 70, 111, and 855 and the most restrictive provisions specified in the most current edition of the *International Codes*.

SECTION 429
MOBILE FOOD UNITS AND OTHER MOBILE FOOD PREPARATION VEHICLES

429.1 General. Mobile food units, and other mobile food preparation vehicles that are equipped with appliances that produce smoke or grease-laden vapors shall comply with Section 319 of the *Fire Code* or appropriate provisions of Chapter 20, Article II, of the *City Code*, whichever is more restrictive.

CHAPTER 5

GENERAL BUILDING HEIGHTS AND AREAS

[F] 501.2 Identifying number. ~~Address identification.~~ New and existing buildings and occupancies there under construction shall be provided with approved address identification identifying numbers. The ~~address identification~~ identifying numbers shall be legible and placed in a position that is visible from the street or road fronting the property. ~~Address identification characters~~ Identifying numbers shall contrast with their background. ~~Address~~ Identifying numbers shall be Arabic ~~numerals numbers~~ or alphabetical letters. Numbers shall not be spelled out. Each character shall be a minimum of 4 inches (101.6 mm) high with a minimum stroke width of ½ inch (12.7 mm). Where required by the fire code official, ~~address identification~~ identifying numbers shall be provided in additional ~~approved~~ locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other approved sign or means shall be used to identify the structure. ~~Address identification~~ Property owners shall maintain identifying numbers in good repair for visibility ~~be maintained~~.

All new and existing buildings are required to be numbered as provided in Chapter 10, Article V, of the City Code.

**TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)**

OCCU- PANCY	A ^f , E ^f		I-1 ^a , I-3, I-4		I-2		R ⁴		F-2, S-2 ^b , U		B ^e , F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A ^f , E ^f	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1 ^a , I-3, I-4	–	–	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	–	–	–	–	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R ^a	–	–	–	–	–	–	N	N	1 ^c	2 ^c	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2 ^b , U	–	–	–	–	–	–	–	–	N	N	1	2	NP	NP	3	4	2	3	2	NP
B ^e , F-1, M, S-1	–	–	–	–	–	–	–	–	–	–	N	N	NP	NP	2	3	1	2	1	NP
H-1	–	–	–	–	–	–	–	–	–	–	–	–	N	NP	NP	NP	NP	NP	NP	NP
H-2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	N	NP	1	NP	1	NP
H-3, H-4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1 ^d	NP	1	NP
H-5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	N	NP

- S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
 NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
 N = No separation requirement.
 NP = Not permitted.
 a. See Section 420.
 b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but not to less than 1 hour.
 c. See Section 406.3.4.
 d. Separation is not required between occupancies of the same classification.
 e. See Section 422.2 for ambulatory care facilities.
 f. Daycare facilities shall be separated from assembly areas where alcohol is served.

**[F] TABLE 509
INCIDENTAL USES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
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{EDITORIAL NOTE: PORTIONS OF THIS TABLE NOT SHOWN REMAIN AS WRITTEN IN THE PUBLISHED CODE.}	
<u>Stationary storage battery systems having an energy capacity greater than the threshold quantity specified in Table 1206.2 of the Fire Code</u>	<u>1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.</u>
<u>Electrical installations and transformers</u>	<u>See Sections 110.26 through 110.34 and Sections 450.8 through 450.48 of NFPA 70 for protection and separation requirements.</u>

510.1 General. The provisions in Sections 510.2 through 510.10 ~~540.9~~ shall permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable *building heights and areas* of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in this section for such condition and other applicable requirements of this code. The provisions of Sections 510.2 through 510.9 ~~540.8~~ are to be considered independent and separate from each other.

510.9 Basement and first story of open parking garages. Other provisions of this code notwithstanding, a basement or first story located below an open parking garage may be considered as a separate and distinct building for the purpose of occupancy, area limitation and type of construction, when the basement or first story is separated from the open parking garage above with a three-hour occupancy separation and the basement and first floor are protected throughout by an automatic sprinkler system.

510.10 Multiple buildings above a horizontal assembly. Where two or more buildings are provided above the *horizontal assembly* separating a Group S-2 parking garage or building below from the buildings above in accordance with the special provisions in Sections 510.2, 510.3 or 510.8, the buildings above the *horizontal assembly* shall be regarded as separate and distinct buildings from each other and shall comply with all other provisions of this code as applicable to each separate and distinct building.

SECTION 511 **TRANSIT SHEDS**

511.1 Scope. The area of a Type IIB building meeting the definition of a “transit shed” may be increased to 250,000 square feet, provided there is no other building located closer than 200 feet to the building, and there is a paved access road at least 60 feet in width on all sides of the building.

SECTION 512 **FOUNDATION ELEVATION**

512.1 General. All new buildings constructed within this jurisdiction shall have the top of the finished floor of the first-story of the building or structure elevated not less than 12 inches (304.8 mm) above the nearest sanitary sewer manhole rim of the sewer connected to and serving the building, or, where no sewer is available, the top of the finished floor of the first-story of the building or structure shall be elevated not less than 4 inches (101.6 mm) above the crown of the street.

Exception: Buildings located in annexed subdivisions where the following conditions exist:

1. The subdivision was platted and recorded prior to annexation;

2. The sanitary sewer system for the subdivision was installed prior to annexation; and
3. The drainage piping from the building meets the requirements of Section 710 of the *Plumbing Code*.

NOTE: When a greater elevation is required by Chapter 19 of the *City Code*, then Chapter 19 shall govern.

512.2 Plans and applications. All construction plans and applications submitted for construction, sewer connections or septic systems shall reflect the elevations of the finished floor of the building and the elevation of the nearest manhole rim of a sanitary sewer connected to the building or crown of the street, whichever is applicable.

512.3 Damage risk. All permits for connection shall be issued on the condition that the owner take all the risk of damage that may result from water backing up into the premises from the sewer.

512.4 Existing structures. When an existing structure is required to connect with a public or private sewer, it shall have the finished floor a minimum of 12 inches (304.8 mm) above the nearest sanitary sewer manhole rim of a sewer connected to the building.

Exception: Where the public or private sewer is not of sufficient depth, or where structures required to be connected to the sewer cannot meet the minimum requirements of this section and other ordinances, the *building official* may authorize the issuance of a permit for an alternate method of construction or installation when this will not be detrimental to the health, welfare, and safety of the public.

CHAPTER 6

TYPES OF CONSTRUCTION

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

{EDITORIAL NOTE: PORTIONS OF SECTION 603.1 NOT SHOWN REMAIN AS SET FORTH IN THE 2015 IBC.}

1. *Fire-retardant-treated wood* shall be permitted in:
 - 1.1 Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
 - 1.2 Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
 - 1.3 Roof construction, including girders, trusses, framing and decking.

Exception: In buildings of Type IA construction exceeding two *stories above grade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6,096 mm).
 - 1.4 Roof structures such as walkways, decks, fences, flower boxes or similar appendages.

25. Materials exposed within plenums complying with Section 602.2 of the *International Mechanical Code*.

CHAPTER 7

FIRE AND SMOKE PROTECTION FEATURES

714.1.1 Ducts and air transfer openings. Penetrations of fire-resistance-rated walls by ducts that are not protected with *dampers* shall comply with Sections 714.2 through 714.3.3. Penetrations of *horizontal assemblies* not protected with a shaft as permitted by Section 717.6, and not required to be protected with fire *dampers* by other sections of this code, shall comply with Sections 714.4 through 714.5.2. Ducts and air transfer openings that are protected with *dampers* shall comply with Section 717.

Penetrations may be made in gypsum wallboard membranes for one-hour protection for bathroom and clothes dryer exhaust ducts without fire dampers provided:

1. A minimum of 0.019-inch (26 gauge) steel ducts are used continuously from the opening to the exterior or into a rated shaft.
2. Voids around the duct penetration shall be sealed with approved materials to prevent the passage of flame.
3. The maximum size of the bathroom fan assembly shall be 100 square inches (645.16 cm²).
4. The maximum size of the clothes dryer duct shall be 20 square inches (129.032 cm²).

717.4 Access and identification. Fire and smoke *dampers* shall be provided with an *approved* means of access that is large enough to *permit* inspection and maintenance of the *damper* and its operating parts in accordance with the *Mechanical Code*. The access shall not affect the integrity of fire-resistance-rated assemblies. The access openings shall not reduce the *fire-resistance rating* of the assembly. Access points shall be permanently identified on the exterior of the duct and at ceiling level by a *label* having letters not less than ½ inch (12.7 mm) in height reading: FIRE/SMOKE DAMPER, SMOKE DAMPER or FIRE DAMPER. Access doors in ducts shall be tight fitting and suitable for the required duct construction.

718.5 Combustible materials in concealed spaces in Type I or II construction. Combustible materials shall not be permitted in concealed spaces of buildings of Type I or II construction.

Exceptions:

{EDITORIAL NOTE: PORTIONS OF SECTION 718.5 NOT SHOWN REMAIN AS SET FORTH IN THE 2015 IBC.}

2. Combustible materials exposed within plenums complying with Section 602.2 of the *International Mechanical Code*.

CHAPTER 9

FIRE PROTECTION SYSTEMS

901.1 Scope. The provisions of this chapter ~~and the *Fire Code*~~ shall specify where *fire protection systems* are required and shall apply to the design, installation, and operation of *fire protection systems*.

901.4 Threads. Threads provided for fire department connections to sprinkler systems, standpipes, yard hydrants or any other fire hose connection shall be ~~compatible with the connections used by the local fire department~~ National Hose Standard hose threads.

901.5 Acceptance tests. *Fire protection systems* shall be tested in accordance with the requirements of this code and the ~~*International Fire Code*~~. When required, the tests shall be conducted in the presence of the *building official*. Tests required by this code, the ~~*International Fire Code*~~ and the standards listed in this code shall be conducted at the expense of the owner or the owner's authorized agent. It shall be unlawful to occupy portions of a structure until the required *fire protection systems* within that portion of the structure have been tested and *approved*.

The location of all fire department connections shall be approved by the fire code official. Inspections of fire-extinguishing systems shall be conducted by the fire code official, and the results of such inspections and reports shall be forwarded to the *building official* for posting to occupancy records. Approval of the fire code official shall be required before any building or structure requiring a fire-extinguishing system may be permanently occupied.

Exception: The *building official* shall have the authority to issue a temporary certificate of occupancy for the use of a portion or portions of a building prior to the completion of the entire structure.

901.6.2 Fire alarm systems. Fire alarm systems ~~required by the provisions of Section 907.2 of this code and Sections 907.2 and 907.9 of the *International Fire Code*~~ shall be monitored by an *approved* supervising station in accordance with Section 907.6.6.

Exceptions:

1. Single- and multiple-station smoke alarms required by Section 907.2.11.
2. Smoke detectors in Group I-3 occupancies.
3. Supervisory service is not required for *automatic sprinkler systems* in one- and two-family dwellings.

901.9 Fire pumps. Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another agency approved by the fire code official and shall not deliver less than the required fire flow and pressure in accordance with the listing. Such pumps shall be automatic operation. (See the *Electrical Code* for additional requirements.) The source of supply for such pumps shall be a

minimum 2,500-gallon (9,463.530 L) break tank served by the city main, or a break tank sized as required by NFPA 20, whichever is more restrictive.

901.10 Outside sprinkler control valve. Outside control in the form of a wall post indicator valve or post indicator valve shall be provided for each sprinkler system. An indicating-type gate valve shall be required when sprinkler systems are supplied by the standpipe system.

901.11 Two-way standpipe connections. Class I and Class III standpipe systems shall be equipped with a two-way fire department inlet connection. Systems with three or more standpipes shall be provided with not less than two two-way fire department inlet connections.

901.12 Fire department connections. The location of all FDC (fire department connections) shall be approved by the fire code official, and all such hose connections shall be 2.5 inch.

[F] 903.2 Where required. Approved *automatic sprinkler systems* in new building and structures shall be provided in the locations described in Section 903.2.1 through 903.2.12.

Exceptions:

1. Spaces or areas in telecommunications buildings use exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an *automatic smoke detection system* in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour *fire barriers* constructed in accordance with Section 707 or not less than 2-hour *horizontal assemblies* constructed in accordance with Section 711, or both.
2. In other than Group H occupancies, an automatic sprinkler system shall not be required in open buildings.

[F] 903.2.1.1 Group A-1. An *automatic sprinkler system* shall be provided for *fire areas* containing Group A-1 occupancies and intervening floors of the building where one of the following conditions exists:

1. The *fire area* exceeds 12,000 square feet (1115 m²).
2. The *fire area* has an *occupant load* of 300 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.
4. The *fire area* contains a multi-theater complex.

Exception: In lieu of a sprinkler system for a temporary use occupancy, the applicant may agree to provide a fire watch program under which one or more fire inspectors of this *jurisdiction* will be present on the premises at all times when the amusement occupancy is open for use. The fire code official shall promulgate regulations regarding the qualifications, deployment and numbers of fire inspectors, which regulations shall be predicated upon public safety for the purpose of preventing fires and allowing safe egress in the event of a fire. The *jurisdiction* shall not be obligated to provide fire inspections for this purpose. See the *Fire Code* for applicable fees and service conditions.

[F] 903.2.1.2 Group A-2. An *automatic sprinkler system* shall be provided for *fire areas* containing Group A-2 occupancies and intervening floors of the building where one of the following conditions exists:

1. The *fire area* exceeds 5,000 square feet (464.5 m²).
2. The *fire area* has an *occupant load* of 100 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.

Exception: In lieu of a sprinkler system for a temporary use occupancy, the applicant may agree to provide a fire watch program under which one or more fire inspectors of this *jurisdiction* will be present on the premises at all times when the amusement occupancy is open for use. The fire code official shall promulgate regulations regarding the qualifications, deployment and numbers of fire inspectors, which regulations shall be predicated upon public safety for the purpose of preventing fires and allowing safe egress in the event of a fire. The *jurisdiction* shall not be obligated to provide fire inspections for this purpose. See the *Fire Code* for applicable fees and service conditions.

[F] 903.2.1.3 Group A-3. An *automatic sprinkler system* shall be provided for *fire areas* containing Group A-3 occupancies and intervening floors of the building where one of the following conditions exists:

1. The *fire area* exceeds 12,000 square feet (1115 m²).
2. The *fire area* has an *occupant load* of 300 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.

Exception: In lieu of a sprinkler system for a temporary use occupancy, the applicant may agree to provide a fire watch program under which one or more fire inspectors of this *jurisdiction* will be present on the premises at all times when the amusement occupancy is open for use. The fire code official shall promulgate regulations regarding the qualifications, deployment and numbers of fire inspectors, which regulations shall be predicated upon public safety for the purpose of preventing fires and allowing safe egress in the event of a fire. The *jurisdiction* shall not be obligated to provide fire inspections for this purpose. See the *Fire Code* for applicable fees and service conditions.

[F] 903.2.1.4 Group A-4. An *automatic sprinkler system* shall be provided for *fire areas* containing Group A-4 occupancies and intervening floors of the building where one of the following conditions exists:

1. The *fire area* exceeds 12,000 square feet (1115 m²).
2. The *fire area* has an *occupant load* of 300 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.

Exception: In lieu of a sprinkler system for a temporary use occupancy, the applicant may agree to provide a fire watch program under which one or more fire inspectors of this *jurisdiction* will be present on the premises at

all times when the amusement occupancy is open for use. The fire code official shall promulgate regulations regarding the qualifications, deployment and numbers of fire inspectors, which regulations shall be predicated upon public safety for the purpose of preventing fires and allowing safe egress in the event of a fire. The *jurisdiction* shall not be obligated to provide fire inspections for this purpose. See the *Fire Code* for applicable fees and service conditions.

[F] 903.2.1.5 Group A-5. An *automatic sprinkler system* shall be provided for Group A-5 occupancies in the following areas: concession stands, retail areas, press boxes and other accessory use areas in excess of 1,000 square feet (93 m²).

Exception: In lieu of a sprinkler system for a temporary use occupancy, the applicant may agree to provide a fire watch program under which one or more fire inspectors of this *jurisdiction* will be present on the premises at all times when the amusement occupancy is open for use. The fire code official shall promulgate regulations regarding the qualifications, deployment and numbers of fire inspectors, which regulations shall be predicated upon public safety for the purpose of preventing fires and allowing safe egress in the event of a fire. The *jurisdiction* shall not be obligated to provide fire inspections for this purpose. See the *Fire Code* for applicable fees and service conditions.

[F] 903.2.1.6 Assembly occupancies of roofs. Where an occupied roof has an *occupant load* exceeding 100 for Group A-2 and 300 for other Group A occupancies, all floors between the occupied roof and the *level of exit discharge* shall be equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.

Exception: ~~Open parking garages of Type I or Type II construction.~~ In lieu of a sprinkler system for a temporary use occupancy, the applicant may agree to provide a fire watch program under which one or more fire inspectors of this *jurisdiction* will be present on the premises at all times when the amusement occupancy is open for use. The fire code official shall promulgate regulations regarding the qualifications, deployment and numbers of fire inspectors, which regulations shall be predicated upon public safety for the purpose of preventing fires and allowing safe egress in the event of a fire. The *jurisdiction* shall not be obliged to provide fire inspectors for this purpose. See the *Fire Code* for applicable fees and service conditions.

[F] 903.2.5 Group H. *Automatic sprinkler systems* shall be provided in high-hazard occupancies as required in Sections 903.2.5.1 through 903.2.5.3.

Exception: *Hazardous materials storage* canopies complying with the provisions of Section 414.6.1 for weather protection.

[F] 903.2.8 Group R. An *automatic sprinkler system* installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R *fire area*.

Exception: One- or two-family dwellings not part of a multi-family residential structure.

[F] 903.3.1.1.1 Exempt locations. Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an *approved* automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from a room merely because it is damp, of fire-resistance-rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. Any room or space where sprinklers are considered undesirable because of the nature of the contents, where *approved* by the ~~fire code~~ *building* official.
3. Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a *fire-resistance rating* of not less than 2 hours.
4. Rooms or areas that are of noncombustible construction with wholly noncombustible contents.
5. Fire service access elevator machine rooms and machinery spaces.
6. Machine rooms, machinery spaces, control rooms and control spaces associated with occupant evacuation elevators designed in accordance with Section 3008.

[F] 904.2.2 Commercial hood and duct systems. Each required commercial kitchen exhaust hood and duct system required by Section 609 of the ~~International Fire Code~~ or ~~Chapter 5~~ Section 508.1 of the ~~International Mechanical Code~~ to have a Type I hood shall be protected with an approved automatic fire-extinguishing system installed in accordance with this code.

[F] 904.12 Commercial cooking systems. The automatic fire-extinguishing system for commercial cooking systems shall be of a type recognized for protection of commercial cooking equipment and exhaust systems of the type and arrangement protected. Pre-engineered automatic dry- and wet-chemical extinguishing systems shall be tested in accordance with UL 300 and *listed* and *labeled* for the intended application. Other types of automatic fire-extinguishing systems shall be *listed* and *labeled* for specific use as protection for commercial cooking operations. The system shall be installed in accordance with this code, its listing and the manufacturer's installation instructions. Automatic fire-extinguishing systems of the following types shall be installed in accordance with the referenced standard indicated, as follows:

{EDITORIAL NOTE: PORTIONS OF SECTION 904.12 NOT SHOWN SHALL REMAIN AS SET FORTH IN THE 2015 IBC.}

Exception: Factory-built commercial cooking recirculating systems that are tested in accordance with UL 710B and *listed, labeled* and installed in accordance with Section ~~304.4~~ 303.1 and 516 of the ~~International Mechanical Code~~.

[F] 905.3.1 Height. Class III standpipe systems shall be installed throughout buildings where the floor level of the highest *story* is located more than 30 feet (9,144 mm) above the lowest level of fire department vehicle access, or where the floor level of the lowest *story* is located more than 30 feet (9,144 mm) below the highest level of fire department vehicle access.

Exceptions:

1. Class I standpipes are allowed in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
- ~~2. Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet (45,720 mm) above the lowest level of fire department vehicle access.~~
- ~~3. Class I manual dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5.~~
42. Class I standpipes are allowed in basements equipped throughout with an *automatic sprinkler system*.
53. In determining the lowest level of fire department vehicle access, it shall not be required to consider either of the following:
 - 53.1. Recessed loading docks for four vehicles or less; and
 - 53.2. Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.

[F] 905.3.2 Group A. Class I automatic wet standpipes shall be provided in non-sprinklered Group A buildings having an *occupant load* exceeding 1,000 persons.

Exceptions:

4. Open-air-seating spaces without enclosed spaces.
- ~~2. Class I automatic dry and semiautomatic dry standpipes or manual wet standpipes are allowed in buildings that are not high-rise buildings.~~

[F] 905.3.4 Stages. Stages greater than 1,000 square feet (93 m²) in area (~~93 m²~~) shall be equipped with a Class III wet standpipe system with 1½-inch and 2½-inch (38 mm and 64 mm) hose connections on each side of the stage.

Exception: Where the building or area is equipped throughout with an *automatic sprinkler system*, the hose connections are allowed to be supplied from the automatic sprinkler system a 1½-inch (38 mm) hose connection shall be installed in accordance with NFPA 13 or in accordance with NFPA 14 for Class II or III standpipes.

[F] 905.3.5 Underground buildings. Underground buildings shall be equipped throughout with a Class I automatic wet ~~or manual wet~~ standpipe system.

[F] 905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required *interior exit stairway*, a hose connection shall be provided for each story above and below grade plane. Hose connections shall be located at ~~an intermediate the main floor landing between stories~~, unless otherwise *approved* by the fire code official.

{EDITORIAL NOTE: REMAINDER OF SECTION REMAINS AS IS IN THE 2015 *INTERNATIONAL BUILDING CODE*.}

[F] 905.8 Dry standpipes. Dry standpipes shall not be installed.

Exception: ~~Where subject to freezing and in accordance with NFPA 14.~~

905.11 Design pressure. Design pressure at the uppermost valve for a Class II standpipe system shall be 35 psi.

[F] 906.2 General requirements. Portable fire extinguishers shall be selected, ~~and installed and maintained~~ in accordance with this section, ~~and NFPA 10 and LSB 1.~~

Exceptions:

1. The distance of travel to reach an extinguisher shall not apply to the spectator seating portions of Group A-5 occupancies.
2. In Group I-3, portable fire extinguishers shall be permitted to be located at staff locations.

[F] 907.2 Where required—new buildings and structures. An *approved* fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.5, unless other requirements are provided by another section of this code.

Not fewer than one manual fire alarm box shall be provided in an *approved* location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or waterflow detection devices. Where other sections of this code allow elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed.

Exceptions:

1. The manual fire alarm box is not required for fire alarm systems dedicated to elevator recall control and supervisory service.
2. The manual fire alarm box is not required for Group R-2 occupancies unless required by the fire code official to provide a means for fire watch personnel to initiate an alarm during a sprinkler system impairment event.

Where provided, the manual fire alarm box shall not be located in an area that is accessible to the public.

3. In other than Group H occupancies, a fire alarm system shall not be required in open buildings.

[F] 907.2.2 Group B. A manual fire alarm system shall be installed in Group B occupancies where one of the following conditions exists:

1. The combined Group B *occupant load* of all floors is 500 or more.
2. The Group B *occupant load* is more than 100 persons above or below the lowest *level of exit discharge*.
3. The *fire area* contains an ambulatory care facility.

Exception: In other than high-rise buildings, manual fire alarm boxes are not required where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

[F] 907.2.3 Group E. A manual and automatic fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall be installed in Group E occupancies. When *automatic sprinkler systems* or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

{EDITORIAL NOTE: THE EXCEPTIONS TO SECTION 907.2.3 REMAIN AS SET FORTH IN THE 2015 IBC.}

907.2.3.1 Group E educational. Smoke detectors shall be installed in any interior corridor serving as an exit and in storerooms, mechanical rooms, janitorial rooms and similar areas. Smoke detectors shall not be required in toilet rooms, classrooms or offices.

Exception: Approved heat detectors may be installed in lieu of smoke detectors with fire marshal approval.

907.2.3.2 Group E child day care facilities. Unless a fire alarm system is provided meeting the requirements of Section 907.2.3, a smoke alarm shall be provided in each occupiable area of child day care facilities with an *occupant load* of less than 30. Where more than one smoke alarm is required, the smoke alarms shall be interconnected in such a manner that activation of one alarm shall activate all the alarms.

907.2.3.3 Smoke detectors. The distance between smoke detectors shall not exceed a nominal spacing of 30 feet (9,144 mm) and there shall be detectors within a distance of one-half the nominal spacing, measured at right angles from all walls or partitions extending upward to within the top 15 percent of the ceiling height.

907.2.6.4 Group I-4. Group I-4 occupancies shall have a manual fire alarm and an automatic fire detection system installed in accordance with Section 907.2.3.

907.2.11.8 Group E child day care facilities. Unless a fire alarm system is provided meeting the requirements of Section 907.2.3, a smoke alarm shall be provided in each occupiable area of child day care facilities with an *occupant load* of less than 30. Where more than one smoke alarm is required, the smoke alarm interconnection and power source shall be in accordance with Section 907.2.11.5 and 907.2.11.6, and smoke alarms installed in such a manner that activation of one alarm shall activate all the alarms.

[F] 907.5.2.2 Emergency voice/alarm communication systems. Emergency voice/alarm communication systems required by this code shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler waterflow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving *approved* information and directions for a general or staged evacuation in accordance with the building's fire safety and evacuation plans required by Section 404 of the *International Fire Code*. In high-rise buildings, the system shall operate on at least the alarming floor, the floor above and the floor below. Speakers shall be provided throughout the building by paging zones. At a minimum, paging zones shall be provided as follows:

1. Elevator groups.
2. *Interior exit stairways*.
3. Each floor.
4. *Areas of refuge* as defined in Chapter 2 of this code.

Alarms shall not sound in elevator groups or exit stairs.

Exception: In Group I-1 and I-2 occupancies, the alarm shall sound in a constantly attended area and a general occupant notification shall be broadcast over the overhead page.

[F] 909.12.2 Wiring. In addition to meeting requirements of ~~NFPA 70~~ the *Electrical Code*, mechanical smoke control ~~at~~ wiring, regardless of voltage, shall be fully enclosed within continuous raceways. The requirement of this section shall apply only to wiring extending from the fire alarm system control unit that activates any required smoke-control system component such as relays, fans, dampers, or stair pressurization systems.

[F] 909.13.1 Materials. Control-air tubing shall be hard-drawn copper, Type L, ACR in accordance with ASTM B 42, ASTM B 43, ASTM B 68, ASTM B 88, ASTM B 251 and ASTM B 280. Fittings shall be wrought copper or brass, solder type in accordance with ASME B 16.18 or ASME B16.22. Changes in direction shall be made with appropriate tool bends. Brass compression-type fittings shall be used at final connection to devices; other joints shall be brazed using a BCuP-5 brazing alloy with solidus above 1,100°F (593°C) and liquids below 1,500°F (816°C). Brazing flux shall be used on copper-to-brass joints only.

Exception: Nonmetallic tubing used within control panels and at the final connection to devices provided all of the following conditions are met:

1. Tubing shall comply with the requirements of Section 602.2.31.3 of the *International Mechanical Code*.

{EDITORIAL NOTE: THE REMAINDER OF SECTION 909.13.1 SHALL REMAIN AS SET FORTH IN THE 2015 IBC.}

[F] 911.1.1 Location and access. The location and accessibility of the fire command center shall be *approved* by the fire chief code official. The fire command center room shall be on the building floor having street access. Access to the room shall be either directly from the exterior, through an entrance lobby or through a 2-hour rated corridor leading directly to the exterior.

[F] 911.1.6 Required features. The fire command center shall comply with NFPA 72 and shall contain all of the following features:

{EDITORIAL NOTE: EXISTING ITEMS 1-18 SHALL REMAIN AS SET FORTH IN THE 2015 IBC.}

19. A means to automatically switch an alarm signal to an *approved* central station.
20. Two handsets per each 10 stories in building height.

CHAPTER 10

MEANS OF EGRESS

SECTION 1001 ADMINISTRATION

1001.1 General. Buildings or portions thereof shall be provided with a *means of egress* system as required by this chapter. The provisions of this chapter shall control the design, construction and arrangement of *means of egress* components required to provide an *approved means of egress* from structures and portions thereof.

1001.1.1 Accessory stairs, ramps, doors and landings. Unless specifically addressed in this code, accessory stairs, ramps, doors and landings that are not components of a *means of egress* system shall meet the appropriate provisions of this code for the application and scope of work proposed, as if they are components of a *means of egress* system.

[F] 1001.3 Maintenance. *Means of egress* shall be maintained in accordance with Section 1031 of the *International Fire Code*.

1010.1.9.8 Sensor release of electrically locked egress doors. The electric locks on sensor released doors located in a *means of egress* in ~~buildings with an occupancy in Group A, B, E, I-1, I-2, I-4, M, R-1, or R-2 and entrance doors to tenant spaces in occupancies in Group A, B, E, I-1, I-2, I-4, M, R-1, or R-2~~ any occupancy except Group H are permitted where installed and operated in accordance with all of the following criteria:

1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors. The doors shall be arranged to unlock by a signal from or loss of power to the sensor.
2. Loss of power to the lock or locking system shall automatically unlock the doors.
3. The doors shall be arranged to unlock from a manual unlocking device a minimum of 1½ inches (38 mm) in diameter located 40 inches to 48 inches (1,016 mm to 1,219 mm) vertically above the floor and within 5 feet (1,524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the lock—independent of other electronics—and the doors shall remain unlocked for not less than 30 seconds.
4. Activation of the building *fire alarm system*, where provided, shall automatically unlock the doors, and the doors shall remain unlocked until the fire alarm system has been reset.

5. Activation of the building *automatic sprinkler system* or *fire detection system*, where provided, shall automatically unlock the doors. The doors shall remain unlocked until the *fire alarm system* has been reset.
6. The door locking system units shall be listed in accordance with UL 294.

1010.1.9.9 Electromagnetically locked egress doors. Doors in the *means of egress* in buildings with an occupancy in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 ~~any~~ occupancy except Group H shall be permitted to be locked with an electromagnetic locking system where equipped with hardware that incorporates a built-in switch and where installed and operated in accordance with all of the following:

{EDITORIAL NOTE: THE REMAINDER OF THIS SECTION SHALL REMAIN AS SET FORTH IN THE 2015 IBC.}

1010.1.9.12 Controlled egress doors from elevator lobbies. Exit doors in the *means of egress* in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke or heat detection system* installed in accordance with Section 907 shall be permitted to be locked from the egress side with an electric locking system. The locking system shall be installed and operated in accordance with all of the following:

1. The door locks shall unlock on actuation of the *automatic sprinkler system* or automatic fire detection system.
2. The door locks shall unlock on loss of power controlling the lock or lock mechanism.
3. If the lock is controlled by a relay, removal of power from the relay or any failure of the wiring or other device in the circuit to the lock shall cause the lock to unlock/fail open.
4. The door locks shall be capable of being unlocked upon a signal from the fire command center, if present, or a signal by emergency personnel from a single location inside the main entrance to the building or other *approved* central location that contains the alarm panels.
5. The door locks shall unlock without delay with an emergency release device (direct inline power interrupting switch) such as a manual fire alarm box on the egress side, resettable only by manual use of a key, and the doors shall remain unlocked until the fire alarm system has been reset.
6. A sign shall be provided adjacent to the emergency release device and shall comply with the visual character requirements in ICC A117.1. The sign shall read: "PUSH/PULL TO RELEASE DOOR IN AN EMERGENCY".
7. A building occupant shall not be required to pass through more than two doors equipped with a controlled egress locking system before entering an exit.

8. The doors shall not require more than one operation to unlatch or unlock, which includes the operation of activating the emergency release device.
9. Emergency lighting shall be provided on the egress side of the door.
10. The door locking system units shall be listed in accordance with UL 294.

1010.2.2 Security gates. In locations other than on doors where panic hardware is required, security gates may be installed, provided they remain open when the premises is occupied by anyone other than security personnel.

1011.14.1 Handrails of alternating tread devices. Handrails shall be provided on both sides of alternating tread devices and shall comply with Section ~~4024~~ 1014.

1011.16 Ladders. Permanent ladders shall not serve as a part of the *means of egress* from occupied spaces within a building. Permanent ladders shall be permitted to provide access to the following areas:

{EDITORIAL NOTE: PORTIONS OF SECTION 1011.6 NOT SHOWN SHALL REMAIN AS SET FORTH IN THE 2015 IBC.}

6. Ladders shall be constructed in accordance with Section ~~306.5~~ 304.3.1.2 of the ~~International~~ Mechanical Code.

1016.2 Egress through intervening spaces. Egress through intervening spaces shall comply with this section.

1. *Exit* access through an enclosed elevator lobby is permitted. Access to not less than one of the required *exits* shall be provided without travel through the enclosed elevator lobbies required by Section ~~3006.2, 3007, or 3008~~. Where the path of exit access travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the *exit* unless direct access to an *exit* is required by other sections of this code.

{EDITORIAL NOTE: PORTIONS OF SECTION 1016.2 NOT SHOWN SHALL REMAIN AS SET FORTH IN THE 2015 IBC.}

1023.9 Stairway identification signs. A sign shall be provided at each floor landing in an *interior exit stairway* and *ramp* connecting more than three stories designating the floor level, the terminus of the top and bottom of the *interior exit stairway* and *ramp*, and the identification of the *stairway* or *ramp*. The signage shall also state the store of, and the direction to, the *exit discharge* and the availability of roof access from the *interior exit stairway* and *ramp* for the fire department. The sign shall be located 5 feet (1,524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions. In addition to the *stairway* identification sign, a floor-level sign in visual characters, raised characters, and braille complying with ICC A117.1 shall be located at each floor-level landing adjacent to the door leading from the *interior exit stairway* and *ramp* into the *corridor* to identify the floor level. See Appendix H of the Fire Code for sign installation requirements.

Exception: Buildings with existing signs having *building official* and *fire code official approval* may retain those signs until the signs are replaced. The installation of replacement signs shall be in accordance with Appendix H of the *Fire Code*.

1023.9.2 Signs on occupancy side of stairway doors. Stairway identification signs having *building official* and *fire code official* approval shall be located at each floor level on the occupancy side of all interior vertical exit enclosures, regardless of height of the building. See Appendix H of the *Fire Code* for installation requirements.

Exception: Buildings with existing signs having *building official* and *fire code official approval* may retain those signs until the signs are replaced. The replacement signs shall be installed in accordance with Appendix H of the *Fire Code*.

1023.9.3 Reentry. Where stairway doors may be locked from the stairway side in accordance with this code, provisions for reentry shall be provided. In buildings not provided with an emergency control station or where the control station is not attended at all times while the building is occupied, alternate methods for releasing stairway door locks shall be provided as required by this code and/or the *fire code official, whichever is more restrictive*.

CHAPTER 11

ACCESSIBILITY

{EDITORIAL NOTE: THE EXISTING PROVISIONS OF CHAPTER 11 ARE NOT ADOPTED AND ARE REPLACED BY THE PROVISIONS BELOW.}

1101.2 Design. Buildings and facilities shall be designed and constructed to be *accessible* in accordance with the provisions of this code the *Texas Accessibility Standards*, and federal law IGC-A117.1.

1101.3 State law. Accessibility for publicly and privately owned buildings and facilities is governed by state law, including Chapter 469 of the *Texas Government Code* and various regulations, standards and specifications issued thereunder. Any references to provisions of Chapter 11 that occur elsewhere in this code shall be construed to mean that compliance shall be with applicable sections of the *Texas Accessibility Standards* (TAS).

1101.4 Responsibility of owners. It is the responsibility of the owner to ensure compliance with state and federal requirements. As provided by Section 469.102 of the *Texas Government Code*, the applicant for a building permit for an affected building or facility shall provide evidence of registration with the Texas Department of Licensing and Regulation as a part of the building permit application.

1101.5 Jurisdiction is not an agent of the state. This *jurisdiction* has not contracted with the state and is not authorized to review plans, grant waivers or modifications, perform inspections, or take any other action with respect to compliance with state or federal accessibility requirements. No action taken by this *jurisdiction* or the *building official* shall be deemed as excusing compliance with state or federal requirements.

{EDITORIAL NOTE: THE REMAINDER OF CHAPTER 11 IS NOT ADOPTED BY THIS JURISDICTION.}

CHAPTER 12

INTERIOR ENVIRONMENT

1203.1 General. Buildings shall be provided with natural ventilation in accordance with Section 1203.4, or mechanical ventilation in accordance with the ~~International~~ *Mechanical Code*.

Where the air infiltration rate in a *dwelling unit* is less than 5 air changes per hour when tested with a blower door at a pressure 0.2 inch w.c. (50 Pa) in accordance with Section 402.4.1.2 of the ~~International~~ *Energy Conservation Code—Residential Provisions*, the *dwelling unit* shall be ventilated by mechanical means in accordance with Section ~~403~~ 402.3 of the ~~International~~ *Mechanical Code*. *Ambulatory care facilities* and Group I-2 occupancies shall be ventilated by mechanical means in accordance with ~~Section 407~~ of the ~~International~~ *Mechanical Code* and ASHRAE 170.

1207.1 Scope. This section shall apply to common interior walls, partitions and floor/ceiling assemblies between adjacent *dwelling units* and *sleeping units* or between *dwelling units* and *sleeping units* and adjacent public areas such as halls, *corridors*, *stairways*, or *service areas*. When required by Chapter 9, Article VI, of the *City Code*, sound attenuation shall be provided as specified in Appendix N.

CHAPTER 15

ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

[P] 1503.4 Roof drainage. Design and installation of roof drainage systems shall comply with Section 1503 of this code and Sections 4406 1101.12 and 4408 1103, as applicable, of the *International Plumbing Code*.

[P] 1503.4.1 Secondary (emergency overflow) drains or scuppers. Where roof drains are required, secondary (emergency overflow) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason. The installation and sizing of secondary emergency overflow drains, leaders and conductors shall comply with Sections 4406 1101.12.2 and 4408 1102, as applicable, of the *International Plumbing Code*.

1504.8 Aggregate. Aggregate used as surfacing for roof coverings and aggregate, gravel or stone used as ballast shall not be used on the roof of a building located in a hurricane-prone region as defined in Section 202, or on any other building with a mean roof height exceeding that permitted Table 1504.8 based on the exposure category and basic wind speed at the site.

TABLE 1505.1^{a, b}
MINIMUM ROOF COVERING CLASSIFICATION FOR TYPES OF CONSTRUCTION

IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
B	B	B	C ^c	B	C ^c	B	B	C ^c

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

- a. Unless otherwise required in accordance with the *International Wildland-Urban Interface Code* or due to the location of the building within a fire district in accordance with Appendix D.
- b. Nonclassified roof coverings shall be permitted on buildings of Group R-3 and Group U occupancies, where there is a minimum fire-separation distance of 6 feet measured from the leading edge of the roof.
- c. Buildings that are not more than two stories above grade plane and having not more than 6,000 square feet of projected roof area and where there is a minimum 10-foot fire-separation distance from the leading edge of the roof to a lot line on all sides of the building, except for street fronts or public ways, shall be permitted to have roofs of No. 1 cedar or redwood shakes and No. 1 shingles constructed in accordance with Section 1505.7.

1511.1 General. Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15.

Exceptions:

1. ~~Roof replacement or roof recover~~ of existing low-slope roof coverings shall not be required to meet the minimum design slope requirement of one-quarter unit vertical in 12 units horizontal (2-percent slope) in Section 1507 for roofs that provide positive roof drainage.

2. ~~Recovering or replacing an existing roof covering shall not be required to meet the requirement for secondary (emergency overflow) drains or scuppers in Section 1503.4 for roofs that provide for positive roof drainage. For the purposes of this exception, existing secondary drainage or scupper systems required in accordance with this code shall not be removed unless they are replaced by secondary drains or scuppers designed and installed in accordance with Section 1503.4.~~

1511.7 Wood shakes and shingles. Wood shakes and shingles shall not be permitted to be replaced unless they meet the requirements of Section 1505.6.

CHAPTER 16

STRUCTURAL DESIGN

{EDITORIAL NOTE: DELETE SECTION 1603.1.7 TEXT IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING.}

1603.1.7 Flood design data. See Chapter 19 of the *City Code* and the *Infrastructure Design Manual*.

1609.1.1 Determination of wind loads. Wind loads on every building or structure shall be determined in accordance with Chapters 26 to 30 of ASCE 7 or provisions of the alternate all-heights method in Section 1609.6. The type of opening protection required, the ultimate design wind speed, V_{ult} , and the exposure category for a site is permitted to be determined in accordance with Section 1609 or ASCE 7. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.

{EDITORIAL NOTE: PORTIONS OF SECTION 1609.1.1 NOT SHOWN SHALL REMAIN AS SET FORTH IN THE 2015 IBC.}

The ~~wind speeds in Figures 1609.3(1), 1609.3(2) and 1609.3(3) are~~ ultimate design wind speeds as determined in accordance with Section 1609.3, V_{ult} , and shall be converted in accordance with Section 1609.3.1 to nominal design wind speeds, V_{asd} , when the provisions of the standards referenced in Exceptions 4 and 5 are used.

1609.3 Ultimate design wind speed. The ultimate design wind speed, V_{ult} , in mph, for the determination of the wind loads shall be determined by entering the physical address of the property where the building will be constructed into the ASCE 7 Windspeed Website: <https://hazards.atcouncil.org>. The proposed design windspeed for the structure shall be based on the appropriate risk category as determined by Table 1604.5. An applicant shall include a pdf copy of the windspeed determination from the website when submitting the design documents/plans for code compliance verification and permit approval. ~~Figures 1609.3(1), 1609.3(2) and 1609.3(3). The ultimate design wind speed, V_{ult} , for use in the design of Risk Category II buildings and structures shall be obtained from Figure 1609.3(1). The ultimate design wind speed, V_{ult} , for use in the design of Risk Category III and IV buildings and structures shall be obtained from Figure 1609.3(2). The ultimate design wind speed, V_{ult} , for use in the design of Risk Category I buildings and structures shall be obtained from Figure 1609.3(3). The ultimate design wind speed, V_{ult} , for the special wind regions indicated near mountainous terrain and near gorges shall be in accordance with local *jurisdiction* requirements. The ultimate design wind speeds, V_{ult} , determined by the local *jurisdiction* shall be in accordance with Section 26.5.1 of ASCE 7.~~

~~In nonhurricane-prone regions, when the ultimate design wind speed, V_{ult} , is estimated from regional climatic data, the ultimate design wind speed, V_{ult} , shall be determined in accordance with Section 26.5.3 of ASCE 7.~~

1609.3.1 Wind speed conversion. When required, the ultimate design wind speeds of ~~Figures 1609.3(1), 1609.3(2) and 1609.3(3) the ASCE 7 Windspeed Website: <https://hazards.atcouncil.org>~~ shall be converted to nominal design wind speeds, V_{asd} , using Table 1609.3.1 or Equation 16-3.

$$V_{asd} = V_{ult} \sqrt{0.6} \quad \text{(Equation 16-33)}$$

where:

V_{asd} = Nominal design wind speed applicable to methods specified in Exceptions 4 and 5 of Section 1609.1.1.

V_{ult} = Ultimate design wind speeds determined from Figures 1609.3(1), 1609.3(2) or 1609.3(3) the ASCE 7 Windspeed Website: <https://hazards.atcouncil.org>.

(EDITORIAL NOTE: DELETE SECTION 1612 TEXT IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING.)

1612.1 General. See Chapter 19 of the *City Code* and the *Infrastructure Design Manual*.

1613.3.5 Determination of seismic design category. This *jurisdiction* is classified as Seismic Design Category A. Structures classified as *Risk Category* I, II or III that are located where the mapped spectral response acceleration parameter at 1-second period, S_{1s} , is greater than or equal to 0.75 shall be assigned to *Seismic Design Category* E. Structures classified as *Risk Category* IV that are located where the mapped spectral response acceleration parameter at 1-second period, S_{1s} , is greater than or equal to 0.75 shall be assigned to *Seismic Design Category* F. All other structures shall be assigned to a *seismic design category* based on their *risk category* and the design spectral response acceleration parameters, S_{DS} and S_{D1s} , determined in accordance with Section 1613.3.4 or the site-specific procedures of ASCE 7. Each building and structure shall be assigned to the more severe *seismic design category* in accordance with Table 1613.3.5(1) or 1613.3.5(2), irrespective of the fundamental period of vibration of the structure, T .

1613.6 Ballasted photovoltaic panel systems. Ballasted, roof-mounted *photovoltaic panel systems* shall not be installed on roofs within Houston. All roof-mounted *photovoltaic panel systems* shall conform to Section 1510.7. Ballasted, roof-mounted *photovoltaic panel systems* need not be rigidly attached to the roof or supporting structure. Ballasted nonpenetrating systems shall be designed and installed only on roofs with slopes not more than one unit vertical in 12 units horizontal. Ballasted nonpenetrating systems shall be designed to resist sliding and uplift resulting from lateral and vertical forces as required by Section 1605, using a coefficient of friction determined by acceptable engineering principles. In structures assigned to *Seismic Design Category* C, D, E or F, ballasted nonpenetrating systems shall be designed to accommodate seismic displacement determined by nonlinear response history analysis or shake table testing, using input motions consistent with ASCE 7 lateral and vertical seismic forces for nonstructural components on roofs.

CHAPTER 17

SPECIAL INSPECTIONS AND TESTS

1705.19 Testing systems utilizing electric or electromagnetic locks. Electric and electromagnetic locking systems shall be tested by an *approved* third-party agency. A certification letter/report shall be provided to the *authority having jurisdiction* documenting compliance with the appropriate code provisions of Section 907 and Chapter 10 and NFPA 72, for each specific installation.

1705.19.1 Activation. Electronic and electromagnetic locking systems shall not be activated prior to required plan review, permitting and final on-site approval.

CHAPTER 23

WOOD

2308.2.4 Ultimate wind speed. V_{ult} shall not exceed 130 miles per hour (57 m/s) (3-second gust).

Exceptions:

1. V_{ult} shall not exceed 140 mph (61.6 m/s) (3-second gust) for buildings in Exposure Category B that are not located in a *hurricane-prone region*.
2. Where V_{ult} exceeds 130 mph (3-second gust), the provisions of either Appendix K, AWC WFCM or ICC 600 are permitted to be used.

CHAPTER 29

PLUMBING SYSTEMS

[P] TABLE 2902.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a
(See Sections 2902.1.1 and 2902.2)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS ¹ (URINALS SEE SECTION 2902.7.419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS ^a (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
1	Assembly	A-1 ^d	Theaters and other buildings for the performing arts and motion pictures	1 per 125	1 per 65 <u>60</u>	1 per 200		—	1 per 500	1 service sink ^e
		A-2 ^d	Nightclubs, bars, taverns, dance halls and buildings for similar purposes	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
			Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink
		A-3 ^d	Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	1 per 125	1 per 65 <u>60</u>	1 per 200		—	1 per 500	1 service sink
			Passenger terminals and transport facilities ¹	1 per 500	1 per 500	1 per 750		—	1 per 1,000	1 service sink
			Places of worship and other religious services	1 per 150	1 per 75	1 per 200		—	1 per 1,000	1 service sink
		A-4	Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 <u>35</u> for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
		A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 <u>35</u> for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink

(continued)

[P] TABLE 2902.1 – continued
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS ¹ (URINALS SEE SECTION 2902.7 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS ² (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
2	Business	B	Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		—	1 per 100	1 service sink ^e
3	Educational	E	Educational facilities	1 per 50		1 per 50		—	1 per 100	1 service sink
			<u>Daycares</u>	<u>1 per 17</u>		<u>1 per 17</u>		—	<u>1 per 100</u>	<u>1 service sink</u>
4	Factory and industrial	F-1 and F-2	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100		1 per 100		See Section 411 of the <i>International Plumbing Code</i>	1 per 400	1 service sink
5	Institutional	I-1	Residential care	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		I-2	Hospitals, ambulatory nursing home care recipient ^b	1 per room ^c		1 per room ^c		1 per 15	1 per 100	1 service sink
			Employees, other than residential care ^b	1 per 25		1 per 35		—	1 per 100	—
			Visitors, other than residential care	1 per 75		1 per 100		—	1 per 500	—
		I-3	Prisons ^b	1 per cell		1 per cell		1 per 15	1 per 100	1 service sink
		I-3	Reformatories, detention centers and correctional centers ^b	1 per 15		1 per 15		1 per 15	1 per 100	1 service sink
			Employees ^b	1 per 25		1 per 35		—	1 per 100	—
		I-4	Adult day care and child day care	1 per 15		1 per 15		4 —	1 per 100	1 service sink
6	Mercantile	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		—	1 per 1,000	1 service sink ^e

[P] TABLE 2902.1 – continued
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS ¹ (URINALS SEE SECTION 2902.7 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS ² (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
7	Residential	R-1	Hotels, motels, boarding houses (transient)	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	—	1 service sink
		R-2	Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		R-2	Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		R-3	One- and two-family dwellings and lodging houses with five or fewer guest rooms	1 per dwelling unit		1 per 10		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
		R-3	* Congregate living facilities with 16 or fewer persons	1 per 840 (City Code Sec. 10-362.)		1 per 10		1 per 8	1 per 100	1 service sink
		R-4	Congregate living facilities with 16 or fewer persons <u>Residential care/assisted living facilities</u>	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
8	Storage ^{h,i}	S-1 S-2	Structures for the storage of goods, warehouses, storehouses and freight depots, low and moderate hazard	1 per 100		1 per 100		See Section 411 of the International Plumbing Code	1 per 1,000	1 service sink

^a These are minimum design requirements. The *Building Code* or the *City Code* applies, whichever is more restrictive. See Section 10-362 of the *City Code*.

- a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by this code.
- b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.
- c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient *sleeping units* shall be permitted, provided that each patient *sleeping unit* has direct access to the toilet room and provisions for privacy for the toilet room user are provided.
- d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
- e. For business and mercantile occupancies with an occupant load of 15 or fewer, service sinks shall not be required.
- f. Structures used for people awaiting transportation, such as transit centers, shall not be required to install employee and public restroom facilities when all the following conditions apply:
 - 1. The facility includes no onsite employees or security personnel.
 - 2. The structure is an open-air structure with no enclosing walls.
 - 3. The structure is only intended to shelter people awaiting transportation.
- g. Buildings where water is served from bottled water coolers and has an occupant load of less than 30 shall not be required to provide drinking fountains.
- h. For the purpose of establishing employee and public restrooms and plumbing fixture requirements the design occupant load of a self-storage warehouse facility containing only normally unoccupied rental units provided with direct exterior access for dropping off and picking up storage of personal possessions shall be based on the design occupant load of the occupied office building serving that storage facility. The required employee and public restrooms provided at the office building shall be available to the public and all employees who utilize the on-site storage facilities.
- i. One story warehouses and parking garages that are dedicated to a building on site, that do not exceed one story below grade, and include a path of travel to available restroom facilities located within 500 feet located on the same property shall be considered compliant with the provisions of Section 2902.3 for required employee and public restroom facilities.

2902.7 Fixture types. All water closets shall be either a dual flush or a high efficiency water closet. For males, when more than one water closet is required, 50% of the water closets shall be urinals. Urinals shall be of the non-water type or high efficiency urinals.

CHAPTER 30

ELEVATORS AND CONVEYING SYSTEMS

3001.1 Scope. This chapter governs the design, construction, installation, *alteration* and repair of elevators and conveying systems and their components.

The *building official* shall have the authority to adopt and enforce rules and regulations to administer the provisions of this chapter. Such rules and regulations may include, but shall not be limited to, establishing qualifications and other requirements for approval and registration of an approved agency, providing frequency of inspections, and providing for formats of reports, inspection checklists, and other required documents.

The *building official* shall issue such notices or orders as may be necessary to remove illegal or unsafe conditions, to secure necessary safeguards during construction, to enforce compliance with this chapter, to receive required applications, to issue permits and serial numbers, and to furnish the prescribed certificates.

3001.2 Referenced standards. State/ASME/ANSI standards. Except as otherwise provided for in this code, the design, construction, installation, *alteration*, repair and maintenance of elevators and conveying systems and their components shall conform to ASME A17.1/CSA B44, ASME A17.7/CSA B44.7, ASME A90.1, ASME B20.1, ANSI MH29.1, ALI ALCTV and ASCE 24 for construction in flood hazard areas established in Section 1612.3. chapter, all elevators, dumbwaiters, escalators, moving walks, inclined stairway chairlifts, wheelchair lifts and alterations to such conveyances and the installation thereof shall conform to the requirements of ASCE 24 for the purpose of regulations associated with this chapter, and the standards adopted in Chapter 754 of the *Texas Health and Safety Code* and the standards adopted thereunder by the Texas Commissioner of Licensing and Regulation. The term “*Elevator Safety Code*” as used in this code shall mean the foregoing state-adopted standards. Manlifts and alterations and installations thereof shall conform to the *Safety Standards for Manlifts, American National Standards Institute, Publication No. ANSI A90.1*, and the term “*Manlift Safety Code*” as used in this code shall mean the said publication. Personnel hoists and alterations and installations thereof shall conform to the *Safety Requirements for Personnel Hoists, American National Standards Institute, Publication No. ANSI A10.4*, and the term “*Personnel Hoist Safety Code*” as used in this code shall mean the said publication.

3001.2.1 Adoption of state standards. Notwithstanding any provisions of this code that may be construed to the contrary, it is the express intent of this *jurisdiction* that this code be construed as establishing standards of inspection and certification of elevators, escalators, and related equipment and standards for elevator inspection personnel that are no less stringent in any respect than those adopted in or pursuant to Chapter 754 of the *Texas Health and Safety Code*, including but not limited to: ASME A17.1-2007, ASME A17.3-2002, ASME A90.1-2005, ASME B20.1-2015, ASME A18.1-2005, ASME A17.5-2014, ASME A17.4-2015, and QEI-1-2013, which state standards and any amendments hereafter made thereto are adopted and incorporated into this code by reference. To the extent of any inconsistency between the state standards and the other provisions of this code, the more stringent provisions shall prevail.

3001.4 Change in use. A change in use of an elevator from freight to passenger, passenger to freight, or from one freight class to another freight class shall not be made without the approval

of the *building official*. Said approval shall be granted only after it is demonstrated that the installation conforms to the requirements of the *Elevator Safety Code* ~~comply with Section 8.7 of ASME A17.1/CSA B44.~~

3001.5 Definitions. The following terms, for the purposes of this appendix, shall have the meaning ascribed in Chapter 2:

ASME CODE.

APPROVED AGENCY.

AUTHORIZED COMPANY.

AUTHORIZED INSPECTOR.

CERTIFYING ORGANIZATION.

ESCALATOR SKIRT DEFLECTOR DEVICE.

MANLIFT.

PERSONNEL HOIST.

WHEELCHAIR LIFT.

3002.3 Emergency signs. An *approved* pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the *exit stairways* and not to use the elevators in case of fire. The sign shall read: ~~IN CASE OF FIRE EMERGENCY, DO NOT USE ELEVATOR ELEVATORS ARE OUT OF SERVICE.~~ USE EXIT STAIRS. The lettering shall be at least ½ inch block letters on a background of contrasting color so that the lettering is clearly visible.

Exceptions:

1. The emergency sign shall not be required for elevators that are part of an *accessible means of egress* complying with Section 1009.4.
2. The emergency sign shall not be required for elevators that are used for occupant self-evacuation in accordance with Section 3008.

3002.9 Plumbing and mechanical systems. Plumbing and mechanical systems shall not be located in an elevator hoistway enclosure.

Exceptions:

1. Floor drains, sumps and sump pumps shall be permitted at the base of the hoistway enclosure provided they are indirectly connected to the plumbing system.
2. All elevator pits shall be provided with a sump pump as per ASME A17.1. The sump pump shall be discharged to the sanitary sewer.

[F] 3003.3 Standardized firefighter's service elevator keys. All elevators shall be equipped to operate with a standardized firefighter's service elevator key in accordance with the ~~International Fire Code~~.

3003.4 Emergency hoistway water sensor. Each elevator hoistway and/or each connected bank of elevator hoistways within a structure located within the 100-year and 500-year floodplain, and elevators located outside the floodplain where elevator cabs travel to floor levels below grade level, shall include a water sensor installed in the hoistway below the landing of the lowest floor served by the elevator. The water sensor shall be installed to automatically override and limit the elevator controls to prevent the elevator and elevator equipment from descending into flooded areas and limit the lowest level of elevator cab travel to a designated floor approved by the fire code official until the flooding has receded. The activation of the automatic water sensor override shall activate visual or audio notification to the building's management. Return to normal operation of the elevator control systems shall require a manual reset by a Texas licensed elevator contractor. This code provision shall be retroactive and applicable to all existing and annexed structures having elevators.

3003.4.1 Compliance timeline for existing and annexed structures. On or before December 31, 2026, or within five years after the date of annexation of a building into the *jurisdiction* after April 1, 2022⁵, each elevator hoistway and/or bank of connected elevator hoistways shall be equipped with an emergency hoistway water sensor installed in accordance with Section 3003.4.

Exception: This section shall not apply to existing elevator systems containing water sensors installed in the hoistway below the landing of the lowest floor level served that automatically remove the elevator from service to a designated floor level approved by the *fire code official* when the hoistway is flooded. These specific systems shall also require a manual reset to return to normal operation as specified by Section 3003.4 of this code.

3004.1 General. Elevators, escalators, dumbwaiters, manlifts, moving walks, conveyors, inclined stairway chairlifts, wheelchair lifts, vertical reciprocating conveyors, personnel hoists and material hoists shall comply with the provisions of Sections 3004.2 through 3004.4.

3004.3 Conveyors Vertical reciprocating conveyors. Vertical reciprocating conveyors shall be installed to comply with ASME B20.1. An installation permit is required before the installation of any vertical reciprocating conveyor. The fees shall be as required for elevators (see Section 118 and the city fee schedule for fees). A one-time final inspection report must be submitted to the *building official* by an approved inspection agency before the vertical reciprocating conveyor is put into operation. The building owner or owner's representative shall be responsible for the safe operation and maintenance of the vertical reciprocating conveyor. ~~Conveyors and conveying systems shall comply with ASME B20.1.~~

~~**3004.3.1 Enclosure.** Conveyors and related equipment connecting successive floors or levels shall be enclosed with *shaft enclosures* complying with Section 713.~~

~~**3004.3.2 Conveyor safeties.** Power-operated conveyors, belts and other material-moving devices shall be equipped with automatic limit switches that will shut off the power in an emergency and automatically stop all operation of the device.~~

3004.5 Escalator skirt deflector devices.

5. The City Secretary shall insert the effective date of the Ordinance to which this document is an exhibit.

3004.5.1 Purpose. The purpose of this section is to improve the overall safety of escalators located within the *jurisdiction* by establishing provisions for the installation of escalator skirt deflector devices on new and existing escalators.

3004.5.2 Compliance program. All escalators installed on or after October 21, 2001, shall be equipped with escalator skirt deflector devices or equivalent protection in accordance with the *ASME A17.1 Safety Code for Elevators and Escalators*. The owners of existing buildings in which one or more escalators were installed prior to October 21, 2001, shall have skirt deflector devices or equivalent protective equipment installed on all escalators no later than January 1, 2011.

3004.5.3 Approval. The *building official* shall have the authority to adopt and enforce rules and regulations to administer approval of the design, construction, configuration and installation of skirt deflector devices for use in this *jurisdiction*. The *building official* shall promulgate such rules and regulations.

3004.5.4 Technical requirements. Escalator skirt deflector devices shall be installed in accordance with the deflector device manufacturer's recommended installation instructions and the *ASME A17.1 Safety Code for Elevators and Escalators*.

3005.2 Venting. Elevator machine rooms, machinery spaces that contain the driving machine, and control rooms or spaces that contain the operation or motion controller for elevator operation shall be provided with an independent ventilation or air-conditioning system compliant with the provisions of the *Construction Code* to protect against the overheating of the electrical equipment. The system shall be capable of maintaining temperatures within the range established for the elevator equipment.

3005.5.1 Delay. Upon activation of the heat detector used for elevator power shutdown, there shall be a delay in the activation of the power shunt trip. This delay shall be the time that it takes the elevator cab to travel from the top of the hoistway to the lowest recall level.

SECTION 3009 **ELEVATORS FOR HIGH RISE BUILDINGS**

3009.1 Elevators. Elevators and elevator lobbies for high rise buildings shall comply with the provisions of section 403 and this chapter.

1. A bank of elevators is a group of elevators or a single elevator controlled by a common operating system; that is, all those elevators that respond to a single call button constitute a bank of elevators. There is no limit on the number of cars that may be in a bank or group, but there may not be more than four cars within a common hoistway. Hoistways shall be separated by a two-hour fire resistive separation.
2. Each elevator lobby shall be provided with at least two smoke detectors with listings from a 3rd party testing laboratory and that are located on the lobby ceiling, one positioned at each opening into the lobby other than the elevator door entrances, or at least one smoke detector with alarm verification sequence per NFPA 72 with listings from a 3rd party testing laboratory. When two detectors, each on a separate initiating circuit, or one alarm sequence verification detector on the same initiating circuit, are activated, elevator cars shall return to a floor providing

direct egress from the building (or to a transfer floor if the cars do not serve an egress floor), and the elevator doors shall open to permit egress of passengers. In the event of a failure of normal electrical service, the standby power system shall have sufficient capacity to return all elevators to the floor of egress on an automatic or manual selective program of one elevator in each bank of elevators simultaneously. An alarm system shall be provided to summon assistance, for instances when the return system is manually activated.

NOTE: Banks of elevators not deactivated by the products of combustion detectors shall remain in normal operation. In the event of a fire on the lowest terminus floor, an elevator call shall stop the elevator car on a floor above the floor of fire involvement.

3. Elevator hoistways shall not be vented through an elevator machine room.
4. An elevator lobby is defined as that portion of a corridor or space within 10 feet of an elevator entrance door. Buildings having banks of elevators serving more than two floors that terminate on an upper floor (sky lobbies) and do not return to a floor level providing direct egress from the building shall have elevator lobbies with a corridor directly connected to an exit stairway. The sky lobbies and connecting corridors shall be separated from the remainder of the building by a two-hour fire resistive occupancy separation.
5. When elevators are returned to the floor of egress due to the activation of the fire detection system, the elevator doors shall open for egress and the elevator shall be shut down. Door open buttons in each car shall remain active. Under this circumstance, facilities shall be provided to permit the operation of any one elevator in an elevator bank by the fire department through the use of a "firefighter's service key." The selected elevator shall be manually operated.
6. Elevators serving below the floodplain for the building shall have a water sensor installed in the hoistway below the lowest landing that the elevator serves to prevent the elevator from descending into a flooded area.

SECTION 3010

PERMITS, CERTIFICATES OF INSPECTION

3010.1 Construction permits.

3010.1.1 General. Contractors shall obtain a separate permit before erecting or constructing any new elevator, dumbwaiter, escalator, manlift, moving walk, personnel hoist, vertical reciprocating conveyor, inclined stairway chairlift, personnel hoist or wheelchair lift, or before relocating such existing equipment. The installer of the equipment shall submit an application for such permit accompanied by plans and specifications in accordance with section 107 of this code, in such form as the *building official* may prescribe. When such plans and specifications indicate compliance with this chapter and other provisions of this code, and the fees specified in Section 118 and the city fee schedule have been paid, the *building official* shall issue a construction permit. The plans and specifications shall be stamped "Approved" when the *building official* issues a construction permit where plans are required. Such approved plans and specifications shall not be changed, modified or altered without authorization from the *building official*, and all work shall be done in accordance with the approved plans.

3010.1.2 Notification of completion. It shall be the duty of each person installing, relocating or altering such conveyances to notify the *building official* in writing, at least seven days before completion of the work, and to subject the new, moved or altered portions of the equipment to the acceptance test required by the *Elevator Safety Code*, *Manlift Safety Code* or *Personnel Hoist Safety Code*, as applicable, to show that such equipment meets the requirements specified before placing the equipment into service.

3010.1.3 Acceptance inspections. All acceptance inspections shall be performed by the *building official* or an approved agency.

3010.2 Operating permits.

3010.2.1 General. An operating permit shall be issued by the *building official* for an elevator, dumbwaiter, escalator, manlift, moving walk, personnel hoist, inclined stairway chairlift or wheelchair lift within 10 days following the receipt of an inspection report indicating compliance with this chapter and applicable safety codes and the payment of the fee provided for in Section 118 and the city fee schedule.

No owner or lessee of an elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift, personnel hoist, or wheelchair lift shall suffer or permit the same to be operated by any person except under a current and valid operating permit or limited permit that has been issued for the equipment by the *building official*.

Exception: No operating permit or limited permit shall be required for the operation of the conveyance equipment if located in a Group R-3 occupancy or in an individual dwelling unit of a Group R-2 occupancy.

The operating permit shall be issued for a period of one year and shall be valid only for the operation of the equipment at the rated load and speed for such equipment, which shall be stated on the permit. Operating permits shall not be issued for personnel hoists, which shall be subject to operation only under a limited permit.

If an inspection report required by this chapter indicates failure of compliance with applicable requirements of this chapter, or, in the case of new or altered installations, with detailed plans and specifications approved by the *building official*, the *building official* shall give written notice to the owner or lessee or the person or persons filing such plans and specifications of the deficiencies that must be cured for compliance therewith. After the equipment has been brought into conformity, the *building official* shall issue an operating permit.

3010.2.2 Annual operating permit. Permits will show the location, type, and number of units permitted.

3010.2.3 Posting of permits. An operating permit for an elevator, platform lift, automated people mover, personnel hoist, or related equipment must be displayed in one of the following areas:

1. Inside the elevator car enclosure or platform lift, automated people mover, personnel hoist, or related equipment or passenger enclosure, not more than 7 feet (2,133.6 mm) or less than 3 feet (914.4 mm) above the finished car floor;
2. Outside the elevator car enclosure or platform lift or related equipment or passenger enclosure, in the main lobby within 10 feet (3,048 mm) of the call button and not more than 7 feet (2,133.6 mm) or less than 3 feet (914.4 mm) above the finished landing floor; or

3. In a common area lobby or hallway location within the building in which the equipment is located that is:
 - 3.1 Accessible to the public without assistance or permission during all hours in which any equipment is in operation; and
 - 3.2 Identified by a plaque mounted in the elevator car enclosure or passenger enclosure within 10 feet (3,048 mm) of the call button in the main elevator lobby directing the public to the location where the permit is displayed. The font size for letters on the plaque shall be at least 18 points (¼ inch “76.2 mm”), and the plaque must state that the equipment is “Regulated by the Texas Department of Licensing and Regulation (TDLR) and the City of Houston (COH) Elevator Inspections Section” and include the department’s and section’s telephone numbers “TDLR 1-800-803-9202, COH 832-394-8861” or “Regulated by the City of Houston (COH) Elevator Inspections Section” and include the telephone number “COH 832-394-8861,” whichever is applicable, and in either instance listed above include the building management’s telephone number. These postings shall be updated by the owner of the property within 30 days if there is a change in the contact information for either TDLR or COH.

3010.2.3.1 Escalators. An operating permit for an escalator or moving sidewalk must be displayed in one of the following areas:

1. In a common area lobby or hallway location not more than 7 feet (2,133.6 mm) or less than 3 feet (914.4 mm) above the finished landing floor and within the building in which the equipment is located accessible to the public without assistance or permission during all hours in which any escalator or moving sidewalk is in operation; or
2. In a common area lobby or hallway location within the building in which the equipment is located that is:
 - 2.1 Accessible to the public without assistance or permission during all hours in which any escalator or moving sidewalk is in operation; and
 - 2.2 Identified by a plaque mounted within 10 feet (3,048 mm) of entry or exit of the escalator or moving sidewalk directing the public to the location where the permit is displayed. The font size for letters on the plaque shall be at least 18 points (¼ inch), and the plaque must state that the equipment is “Regulated by the Texas Department of Licensing and Regulation” and include the department’s telephone number 1-800-803-9202 and the building management’s telephone number. These postings shall be updated by the owner of the property within 30 days if there is a change in the contact information for TDLR.

3010.2.4 Limited operating permit. The *building official* may issue a limited permit authorizing the temporary use of any elevator, dumbwaiter, escalator, manlift, moving

walk, inclined stairway chairlift, personnel hoist or wheelchair lift for passenger or freight service during its installation or alteration.

In the case of elevators, such limited permit will not be issued until the elevator has been tested with rated load; car safety and terminal stopping equipment have been tested to determine the safety of the equipment; and permanent or temporary guards or enclosures have been placed on the car, around the hoistway and at the landing entrances on each floor. Landing entrance guards shall be provided with locks that can be released from the hoistway side only. Automatic and continuous pressure elevators shall not be placed in temporary operation from the landing push buttons unless door-locking devices and/or interlocks required by the *Elevator Safety Code* are installed and operative. All tests required by this paragraph and reports thereof must indicate compliance with all applicable provisions of the *Elevator Safety Code* before a temporary permit will be issued.

For personnel hoists, a limited permit will not be issued until the hoist has been inspected in accordance with the *Personnel Hoist Safety Code* and has been determined to be in compliance therewith.

3010.2.5 Life of limited permits. Limited permits shall be issued in the same manner as operating permits, provided that they shall be valid for a period not to exceed 90 days. However, any equipment being operated pursuant to a limited permit shall be inspected at intervals not exceeding 30 days by the *building official* or an approved agency.

3010.2.6 Posting of limited permits. Each limited permit shall be conspicuously posted at a place that is near to or visible from each entrance to permitted equipment, and the limited permit shall also include a statement that the equipment has not been finally approved.

3010.2.7 Responsibility. The person installing, relocating, or altering any equipment operating under a limited permit shall be responsible for its operation and maintenance and for all required tests and inspections until the operating permit has been issued by the *building official*.

The owner or owner's representative shall be responsible for the safe operation and proper maintenance of such equipment after the operating permit has been issued and during the period of effectiveness of any limited permit. The owner and owner's representative shall also be responsible for all initial and periodic tests required by this chapter.

3010.2.8 Special permission for employee use. Special permission may be granted by the *building official* for use of freight elevators by employees of the establishment in which they are situated if the *building official* finds that there is compliance with the requirements of Rule 207.4 of the *Elevator Safety Code*. The application therefor shall be made when the operating permit is requested, and the special permission, if granted, shall be noted on the operation permit. Except in accordance with the provisions of a special operating permit granted under this paragraph, it shall be unlawful for any elevator owner or other person in control of a freight elevator to suffer or permit the freight elevator to be used to carry any passengers other than as may be required to operate the elevator and to load and unload freight that is being carried upon the elevator.

3010.3 Approval of personnel hoists.

3010.3.1 General. A manufacturer, distributor, or agent who desires approval of a personnel hoist manufactured or distributed by him or by his principal shall submit a properly completed application meeting the requirements of this section, including proof

of licensure by the state of Texas, all data as hereafter prescribed, and payment of the fee for a manufacturer's design permit as required in Section 118 and the city fee schedule. A manufacturer, distributor, or agent shall submit a separate application, the fee, and complete data for each model varying in tower construction, capacity, speed, or method of operation.

If the *building official* finds that the hoist meets all the requirements of this code, the *Personnel Hoist Safety Code*, and all other applicable statutes and ordinances, he shall issue a permit identifying the make, model, capacity, and type of tower. If the *building official* finds that the hoist does not meet the requirements of this code, the *Personnel Hoist Safety Code*, or any other applicable statute or ordinance, the *building official* shall so notify the applicant in writing.

Manufacturer's data that must accompany the application for approval of new hoists includes:

1. Tower stress analysis, including two copies of structural specifications, drawings, and calculations, proving that the tower and base contain the factors of safety specified in the Requirements for Personnel Hoists, ANSI A10.4.
2. A letter giving the tower serial number, if any, or model description shall accompany the specifications. Such letter shall state the maximum height, wind velocity, car speed and car capacity for which the structure is designed when subjected to strain by operation of the car safety device and the maximum load and striking speed for which the buffers and base structures are designed.
3. A complete description as to the operation of the hoisting equipment and function of safety devices, including a schematic wiring diagram of safety and brake circuits and controller.
4. Periodic maintenance and inspection checklists, which must specify the frequency of each inspection. Among other things, those lists must include maximum safe tolerance of brake clearance, safety jaw clearance, and guide displacement. Any special tools or equipment required in making an inspection shall be shown and described on each list.
5. All data described in the above items 1, 2, 3, and 4 must be approved by a professional engineer registered with the State of Texas.

3010.3.2 Inspections. Inspections will be made at a time convenient to the *building official* or approved agency and the construction job superintendent at least monthly and at such additional frequencies, if any, as are stated in the application for the personnel hoist as approved by the *building official*. The *building official* or approved agency shall immediately and verbally notify the construction job superintendent of any defects that would make the personnel hoist unsafe for continued operation, and the construction job superintendent shall take the personnel hoist out of service immediately and correct any defect that would make the hoist unsafe prior to continued operation. All other defects shall be corrected as soon as is reasonably possible. Within 24 hours after the inspection, the *building official* or an approved agency shall confirm the findings in a written report to the construction superintendent. If the *building official* or approved agency has directed that the personnel hoist be taken out of service pending its repair, then it shall not be returned to service until the *building official* or approved agency has reinspected the equipment and determined that it may safely be returned to service.

3010.3.3 Penalties for violation.

3010.3.3.1 User. It shall be unlawful for any person knowingly to use or to suffer or permit the operation of a personnel hoist that was not issued a permit required by this code or that includes any defect that could make it unsafe for continued operation.

3010.3.3.2 Workers. It shall be the duty of the superintendent of each construction site to ensure that in the car of each hoist on the construction site, other than approved personnel hoists operating under a limited permit, there is conspicuously posted a card, furnished by the *building official*, stating: DO NOT RIDE THIS HOIST. VIOLATORS SUBJECT TO A \$200.00 FINE—CITY OF HOUSTON. Except as provided in Section 3010.3.6 below, it shall be unlawful for any person to ride in a car that is so posted.

3010.3.4 Manlifts. Nothing in this code or in the *Personnel Hoist Safety Code* shall be construed to prohibit the use of a manlift during construction.

3010.3.5 Hoist cage platform size. The restrictions in the *Personnel Hoist Safety Code* regarding the cage platform size do not apply if the cage is equipped with an overload safety device.

3010.3.6 Material hoist. Nothing in this chapter shall prohibit the general contractor from assigning a competent attendant to ride a material hoist during the required period of its use. This attendant, when assigned, shall:

- 1.** Prevent passengers from riding the hoist (other than the attendant);
- 2.** Prevent overloading the hoist; and
- 3.** Observe and report unsafe conditions to the construction superintendent.

3010.4 Tests, inspections.

3010.4.1 General. The owner or owner's representative shall be responsible for the safe operation and maintenance of each elevator, dumbwaiter, escalator or moving walk installation and shall cause annual inspections, tests and maintenance to be made on such conveyances as required in this section.

3010.4.2 Periodic inspections and tests. Every elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift and wheelchair lift shall be periodically inspected for compliance with the requirements of this chapter and the *Elevator Safety Code* or *Manlift Safety Code*, as applicable, at intervals not exceeding 12 calendar months, provided any such inspection may be made during the month following the last calendar month during which the inspection was due. Such periodic tests shall not be required for any such equipment located in a Group R-3 occupancy or an individual dwelling unit of a Group R-2 occupancy.

3010.4.3 Load tests and inspections. Full load and safety tests shall be performed by an elevator company in the presence of the *building official* or an approved agency. Full load and safety tests and inspections shall be performed at intervals of five years for each traction-type elevator.

3010.4.4 Inspection costs. All costs of such inspections and tests shall be paid by the owner or owner's representative.

3010.4.5 Inspection reports. After each inspection, a full and correct report of such inspection shall be filed by the authorized inspector/approved agency with the *building*

official within 5 days after the completion of the inspection. This report shall be in a format satisfactory to the *building official* and shall, at a minimum, indicate the name of the authorized inspector and the name of the authorized company or approved agency, the date of the inspection, the registration number of both the authorized inspector and the authorized inspecting company, the permanent identification number of the equipment inspected, name of the owner or the owner's representative and the tag number assigned by the *jurisdiction* to the equipment inspected. Tags and report forms shall be obtained from the *building official* by the authorized inspecting company. The report shall certify that the equipment inspected meets the requirements of this chapter and the *Elevator Safety Code* or *Manlift Safety Code*, as applicable, insofar as a thorough and diligent inspection of the equipment as installed allows. The report shall list all items that do not perform in accordance with this chapter or the said safety codes. Every report shall be signed by the persons performing the inspection and witnessing the tests, as applicable.

3010.4.6 Inspections. Inspections shall be performed or witnessed by certified and authorized inspection personnel of an authorized company or approved agency in accordance with criteria set forth by the *jurisdiction*.

3010.4.7 Registration. Each authorized inspector shall meet the qualification requirements of the certifying organization. All authorized inspectors and inspection supervisors shall be certified by an organization accredited by the certifying organization in accordance with requirements of the certifying organization and be annually registered with the *jurisdiction*. The business registration shall be authorization for such business organization to perform inspections and submit inspection reports. Only inspection reports submitted by authorized companies or approved agencies shall be acceptable when applying for a certificate of inspection.

Without limiting the requirements imposed by the *building official*, each approved agency shall be required to demonstrate that it has professional errors and omissions insurance coverage with policy limits of \$500,000.00 or more, per occurrence; worker's compensation insurance coverage; and comprehensive general liability insurance coverage with policy limits of \$1,000,000.00 or more, per occurrence. The *jurisdiction* shall be designated as an additional insured on the liability coverage, and the coverage shall include a cross-liability endorsement and a provision for 10 days' written notice to the *jurisdiction* prior to any cancellation. The *building official* shall also require an indemnification and hold harmless agreement in a form approved by the city attorney.

All coverage shall be written by an insurance firm with a rating of A or better in the most recent A.M. Best directory.

3010.4.8 Registration revocation. The *building official*, for due cause, may revoke registration of any inspecting organization or inspector. Appeals of revocations may be made to the *jurisdiction* through the *General Appeals Board* using the appeals process as set forth in Chapter 113 of this code.

3010.4.9 Delinquent inspections. Failure of the *building official* to advise the owner or owner's representative does not alleviate the responsibility of the owner or owner's representative for annual inspections or load tests as specified in Section 3010.4.2. In the event that any required report of an inspection is not filed with the *building official* by the 30th day after the final date when such equipment should have been inspected or tested, the owner of the equipment or the owner's representative shall be presumed to be in violation of the requirements of this code.

If, after the 120th day, the owner or the owner's representative has not complied with the requirements of this chapter by providing the information required, the *jurisdiction* shall have the authority to assign inspection of the equipment in question to an authorized inspection organization for completion of the necessary inspections and tests. The costs of such inspections shall be borne by the owner or the owner's representative, and the decision of the *building official* shall be final and binding on the owner or owner's representative.

3010.5 Fees for tests and inspections. Fees shall be required as set forth in Section 118 and the city fee schedule.

3010.6 Unsafe conditions. When an inspection reveals an unsafe condition, the inspector shall immediately file with the owner or owner's representative and the *building official* a full and true report of such inspection and such unsafe condition. If the *building official* finds that the unsafe condition endangers human life, the *building official* shall place on such elevator, dumbwaiter, escalator, manlift, moving walk, inclined stairway chairlift, wheelchair lift or personnel hoist, in a conspicuous place, a notice stating that such conveyance is unsafe. The owner or owner's representative shall ensure that such notice of unsafe condition is legibly maintained where it was placed by the *building official*. The *building official* shall also issue an order in writing to the owner or owner's representative requiring the repairs or alterations to be made to such conveyance that are necessary to render it safe and may order the operation thereof discontinued until the repairs or alterations are made or the unsafe conditions are removed. A posted notice of unsafe conditions shall be removed only upon authority of the *building official*.

CHAPTER 31

SPECIAL CONSTRUCTION

3103.1.2 Permit required. ~~Temporary structures that cover an area greater than 120 square feet (11.16 m²), including connection areas or spaces with a common means of egress or entrance that are used or intended to be used for the gathering together of 10 or more persons, shall not be erected, operated or maintained for any purpose without obtaining approval and where required a building permit from the building official. Temporary building shall be compliant with the applicable provisions of this code and be completely removed before 180 days after installation or upon the expiration of the time limit stated in the permit.~~

Exception: A separate temporary structure permit is not required for a construction trailer or shed used during the construction of a structure when a permit has been obtained for the construction work.

3103.5 Use period. The aggregate time associated with use or existence of temporary structures, including but not limited to tents or air-supported, air-inflated or tensioned membrane structures, shall not be or extend for a period of more than 179 days within a 12-month period on a single premises.

Exception: Buildings complying with this code for the intended use and permitted as a permanent structure are exempt.

3104.4 Reserved. Contents. ~~Only materials and decorations approved by the building official shall be located in the pedestrian walkway.~~

{EDITORIAL NOTE: DELETE SECTION 3109 TEXT IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING.}

3109.1 General. The design and construction of swimming pools, spas, and hot tubs shall comply with the requirements of the City Code and Chapter 757 of the Texas Health and Safety Code.

SECTION 3112

DRIVEWAYS, SIDEWALKS, PARKING LOTS, BUS PADS AND LANDINGS, AND ALLEYS

{REVIEW NOTE: SECTION 3112 IS COORDINATED WITH THE CITY ENGINEER ROW STANDARDS AND IS SUBJECT TO CHANGE.}

3112.1 Purpose. This section establishes the minimum regulations governing the design and construction of driveways, sidewalks, parking lots, bus pads and landings, alleys, and paving as required by this code, the Infrastructure Design Manual and the City Code. The most restrictive provision of applicable codes and ordinances shall prevail.

3112.2 Definitions. The following terms, when used in this section, shall have the meaning ascribed in Chapter 2:

ALLEY.

DRIVEWAY.

DRIVEWAY APPROACH.

HIGHWAY, STREET OR ROAD.

INFRASTRUCTURE DESIGN MANUAL.

LOADING BERTH.

LOCAL STREET OR ROAD.

MAJOR THOROUGHFARE.

PARKING LOT.

PAVING.

PEDESTRIAN.

RIGHT-OF-WAY.

ROADWAY (GENERAL).

SIDEWALK.

3112.3 Paving on private property. Driveways, sidewalks, patios, and other paving not located in the right-of-way, or not dedicated to the *jurisdiction* for the purpose of sidewalk construction, shall comply with this section.

3112.3.1 Driveways. Driveways shall comply with the provisions of Section 3112.3.2 and shall connect to a driveway approach as provided in Section 3112.4.3.

3112.3.2 Paving. All other paving regulated under this section shall meet the minimum slab provisions of Section 1610 and any loads specified in Chapter 16, as applicable. These provisions shall be in addition to any standards required by Chapter 28 of the *City Code* regarding parking in yards. All paving or improved surfaces shall comply with Section 3112.6.

3112.3.3 Parking lots. The construction of parking lots shall be as required this section and Drawings 31-01 and 31-02 of Section 3112.4.5. Parking lots shall be designed to meet the loads as specified in Chapter 16. All driveway approaches and access to the parking lot shall be approved by the Office of the City Engineer in Houston Public Works.

3112.3.3.1 General. When an area is being developed for parking, a plan shall be prepared and submitted to the *building official* showing the boundary, entrances and exits, geometric layout of parking stalls and aisles, operating plan, drainage, and surfacing or paving. The area being developed for parking shall be surfaced with materials that will not permit wind or waterborne erosion from the area.

3112.3.3.2 Exiting from lot. When the parking lot is designed to create a one-way aisle operation, an exit shall be provided to enable the vehicle exiting to enter the street in a head-out position.

3112.3.3.3 Wheel stops. A 6-inch curb/wheel stop shall be installed not less than 2.5 feet from the right-of-way line when property is improved for vehicle use within 3 feet of the right of-way line. Barrier fencing or minimum 4-inch-diameter posts spaced not more than 3 feet apart and not less than 2 feet in height may be installed on the right-of-way line as a substitute for wheel stops. If the improved area is concrete, a permanent 6-inch curb shall be installed in lieu of wheel stops.

3112.4 Work located in the *jurisdiction's* right-of-way. All work in the right-of-way shall be approved by the Office of the City Engineer in Houston Public Works. Construction or repair of any sidewalk, driveway approach, curb, gutter, or bus pad and landing shall comply with this section and Chapter 40, Article III, of the *City Code* and the *Infrastructure Design Manual*.

3112.4.1 *Jurisdiction* approval of plans and specifications. No person shall construct or cause to be constructed any driveway approach, sidewalk, private street, parking lot or alley connecting private property with a public street and there shall be no fill deposited in the right-of-way without prior approval of Houston Public Works.

3112.4.2 Plot plan. A complete site plan shall be prepared to a reasonable scale and submitted to Houston Public Works and the *jurisdiction's* Department of Planning and Development showing the following information:

1. All right-of-way lines and property lines that bound the property planned for improvement.
2. Width and design of all existing driveways, driveway approaches, sidewalks, and media openings as they exist on the ground.
3. Existing conditions between the right-of-way line and the traveled roadway, including curbs, ditches, storm sewer inlets, manholes, utility boxes, utility poles, fire hydrants, trees, etc. If median islands exist, the next median opening on each side of the property and any trees within the median adjacent to the property.
4. If open ditches exist, the diameter size and invert elevation of the nearest existing culvert pipe upstream and downstream.
5. The complete intersection when property planned for improvement fronts a "T" intersecting street.
6. All existing on-site conditions with dimensions when property is being improved with add-on construction, remodeling, accessories, repairs, erection of building parking lots or any other improvements.
7. All proposed driveways and sidewalks, and the existing right-of-way conditions for a minimum 15 feet beyond the property line on each side.

3112.4.3 Driveway approach approval. Upon receipt of an application for a driveway approach permit, the Office of the City Engineer in Houston Public Works shall make a determination, pursuant to the guidelines set out in Section 40-86 of the *City Code*, as to whether the driveway approach applied for is necessary to provide reasonable access to the private property consistent with the safety and convenience of the public.

If after review, the Office of the City Engineer in Houston Public Works finds that the plans comply with all applicable codes and ordinances, the Office of City Engineer shall approve the plans.

3112.4.4 Sidewalks. When required by Chapter 10 of the *Infrastructure Design Manual*, public sidewalks shall be constructed in accordance with the applicable *Infrastructure Design Manual* drawing number for the specified location and site conditions.

3112.4.5 Standards for design and construction. All construction regulated by this section shall be designed and constructed in accordance with the provisions of this section, including the following three drawings and the *Infrastructure Design Manual*, latest revised edition, including the drawings therein. When there is a conflict between this code and the *Infrastructure Design Manual*, the most restrictive provisions shall prevail.

1. PARKING LOT REQUIREMENTS ROW STANDARDS (T&T Drawing. No. 31-01).
2. PARKING LOT REQUIREMENT PRIVATE PROPERTY STANDARDS (T&T Drawing No. 31-02).
3. PARKING LOT REQUIREMENTS PARKING SPACE DIMENSIONS (T&T Drawing No. 31-03).

3112.4.6 Loading berth. In no case shall a “back-in” loading berth be constructed on a major thoroughfare where the vehicle will use the major thoroughfare for maneuvering purposes.

Where off-street “back-out” loading berths are constructed, the loading area shall be sufficiently designed and constructed to store the commercial motor vehicle, truck-tractor, tractor, trailer or semitrailer or combination of such vehicles within private property, and no part of the vehicle shall protrude over the property line or obstruct any public street or sidewalk area in whole or in part.

The depth of the loading berth from the right-of-way line extending into the private property shall be determined based on the types of commercial vehicles using the facility.

3112.4.7 Street curb and gutter replacement. Where construction of driveway approaches and sidewalks will require the removal and replacement of curb and gutter over a continuous run in excess of 25 percent of any one block, the permit applicant shall submit a plan to the Office of the City Engineer in Houston Public Works. In addition to all other applicable requirements in this section, the plans shall comply with the *Infrastructure Design Manual*.

3112.4.8 Alley paving. The requirements for paving a public alley are identical to those for paving a public street. Plan-profile type of drawings prepared by a licensed professional engineer in the State of Texas and approved by all appropriate *jurisdiction* departments are required. The *Infrastructure Design Manual* will govern the design and construction of alleys. A separate paving permit issued by Houston Public Works and a separate paving bond will be required prior to any construction.

3112.4.9 Driveway approach drainage. In the event an existing curb-type storm sewer inlet falls within the proposed driveway approach area, a new curb-type storm sewer inlet will be required to be constructed on the nearest remaining straight curb line. The existing inlet will be converted to a flat grate-type inlet and connected to the new inlet by a concrete pipe lead of a diameter not less than the existing lead. Failure to show the existing inlets on the plot plan in no way excuses compliance with the above requirement, even though the permit may have been issued. Refer to Houston Public Works Drawings Nos. 02632-03 and 02632-05 of the *Infrastructure Design Manual* (relocation of Type B and B-B inlets).

3112.4.10 Bonded contractor. No permit shall be issued to construct, reconstruct, repair, or regrade any driveway approach, sidewalk, culvert pipe, curb or gutter within the *jurisdiction* unless the applicant shows evidence that he has secured a bond in accordance with Section 40-95 of the *City Code*.

Exception: A homeowner will be issued a permit to install culvert pipe or construct a driveway approach where no curb cut is required in accordance with *jurisdiction* specifications without the bond required above.

3112.4.11 Responsibility of property owners. For responsibility of property owners of abutting public streets relative to construction or repair of sidewalks, driveways, driveway approaches, and culverts, see Section 40-84 of the *City Code*. For *jurisdiction*

requirements relative to altering the grades of driveways, sidewalks, culvert pipes, curbs and gutters, see Section 40-90 of the *City Code*.

3112.4.12 Driveway approaches prohibited. Driveway approaches are prohibited within any of the following areas:

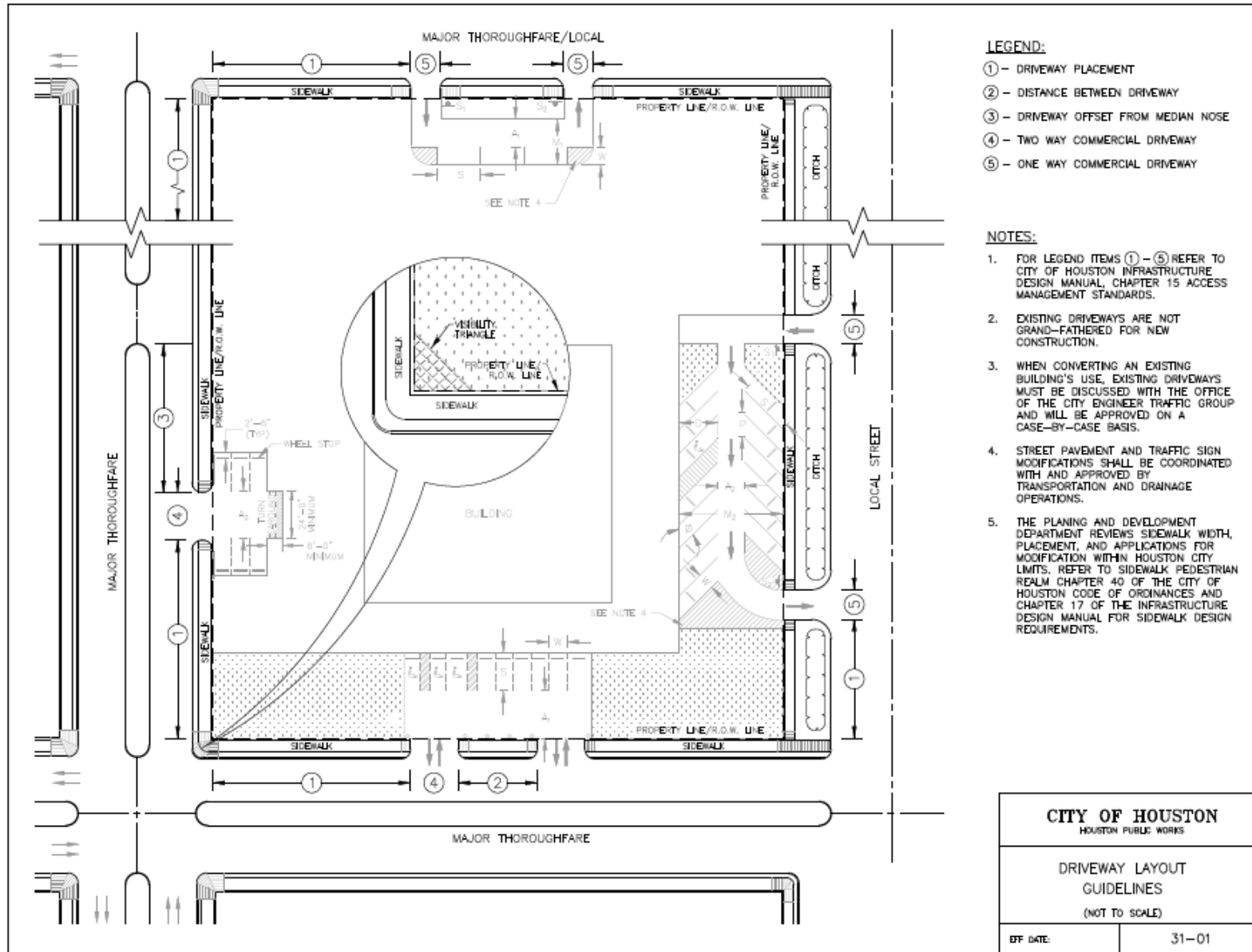
1. The areas set forth by the Texas Department of Transportation as “access denied.”
2. The areas designated “access denied” on a recorded subdivision plat or another plat required to be approved by the City of Houston Planning Commission.
3. At the end of any dead-end street not terminating in a cul-de-sac or permanent turnaround and intended to be extended in the future.
4. The limits of any intersection, with the exception that special consideration will be given to major thoroughfares with existing esplanades and streets primarily used for residential use.
5. Abutting a local street where there is less than 20 feet (6,096 mm) of unobstructed depth from the right-of-way line to any obstruction. An overhead door will not be deemed as an obstruction provided that the width of the door is equal to or greater than the width of the driveway and there is also a minimum of 20 feet unobstructed depth on the private property where vehicles can be parked.
6. An area abutting a major thoroughfare where the general design of parking does not provide the necessary depth of 44 feet (13,420 mm) to allow a vehicle when exiting to enter the thoroughfare in a head-out position.
7. Any area where Houston Public Works finds that it would not provide reasonable access to the private property consistent with the safety and convenience of the traveling public.
8. Within areas of unpaved street or alley rights-of-way, except as authorized by Section 40-340 of the *City Code*.
9. Any alley where the proposed driveway approach provides the primary access to any building or structure where required fire department access as specified by the *Fire Code* is not provided.

Where the construction of any building or structure upon a property causes a driveway to no longer comply with items 6 or 7 above, the driveway shall be removed and the area converted so that it conforms to the design of the surrounding area.

3112.5 Off-street parking. No building or structure shall be constructed, altered or moved onto any lot or building site unless off-street parking spaces are provided pursuant to the restrictions or covenants contained in or related to the subdivision plat or development plat for the property and the parking requirements established in Chapter 26 of the *City Code*.

3112.6 Drainage. All paved areas including, but not limited to, alleys, yards, courts and courtyards shall be drained into a storm sewer system where such systems are available; otherwise, they shall be drained to a place of disposal approved by the Office of the City Engineer in the Houston Public Works. For other than single family residential properties, storm water drainage shall not discharge or flow over any public sidewalk or adjoining property. When required by Chapter 9 of the *Infrastructure Design Manual*, detention shall be required.

3112.7 Bus pads and landings. When a right-of-way contains a bus stop, the engineer shall design the bus pad and landing to integrate with the sidewalk in accordance with Chapter 10, Section 10.06.H, item 12 of the *Infrastructure Design Manual*.



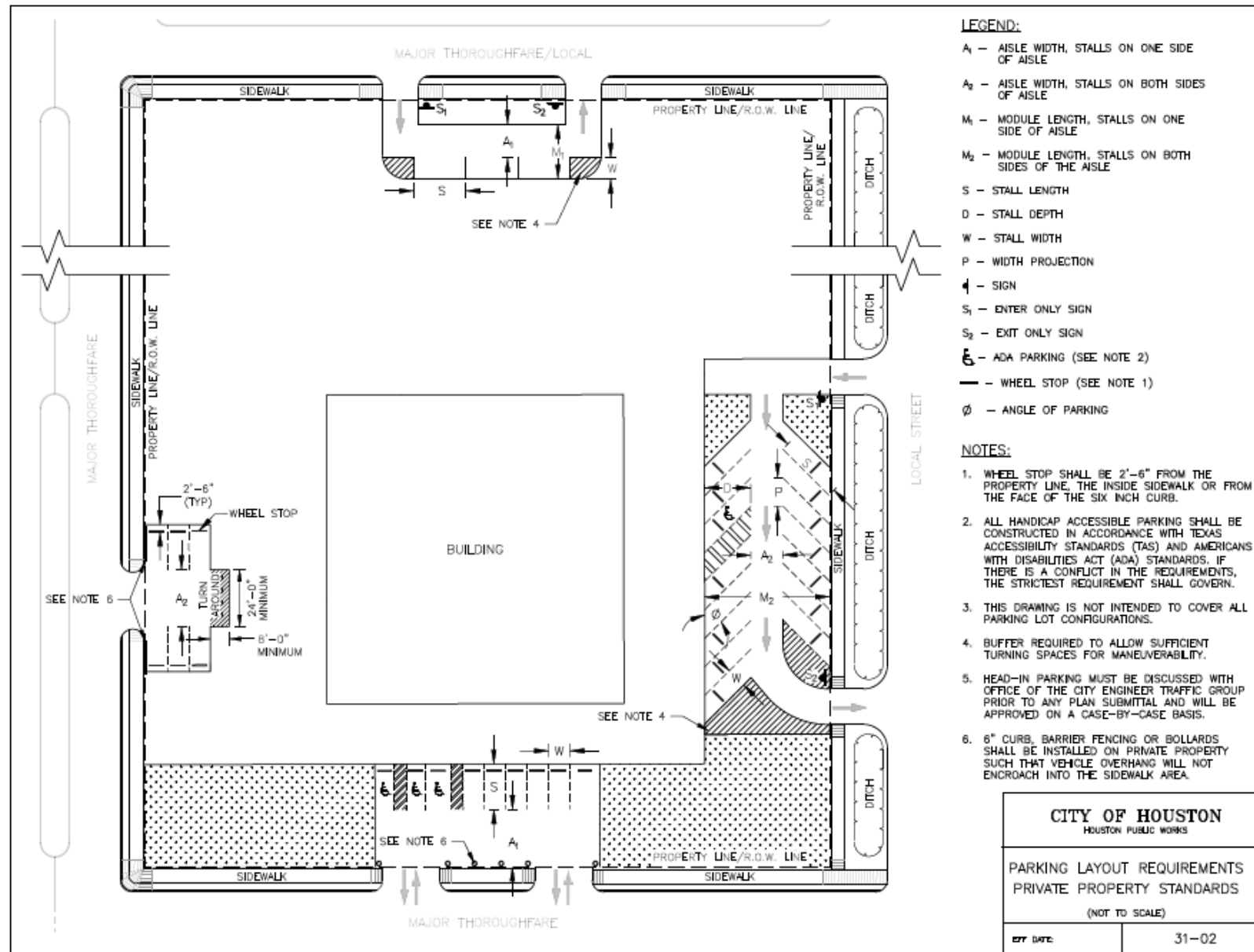


TABLE 1 — PARALLEL PARKING									
DIMENSIONS		ONE-WAY TRAFFIC				TWO-WAY TRAFFIC			
STALL WIDTH (W)	STALL LENGTH (S)	AISLE WIDTH (A ₁)	MODULE LENGTH (M ₁)	AISLE WIDTH (A ₂)	MODULE LENGTH (M ₂)	AISLE WIDTH (A ₁)	MODULE LENGTH (M ₁)	AISLE WIDTH (A ₂)	MODULE LENGTH (M ₂)
ft	ft	ft	ft	ft	ft	ft	ft	ft	ft
9.0	22.0	12.0	21.0	12.0	30.0	20.0	29.0	20.0	38.0

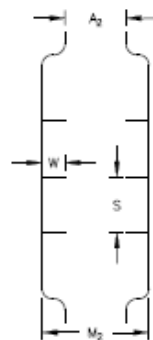
TABLE 2 — ANGLED PARKING												
ANGLE OF PARK (ø)	DIMENSIONS				ONE-WAY TRAFFIC				TWO-WAY TRAFFIC (SEE NOTE 1)			
	STALL WIDTH (W)	WIDTH PROJECTION (P)	STALL DEPTH (D)	STALL LENGTH (S)	AISLE WIDTH (A ₁)	MODULE LENGTH (M ₁)	AISLE WIDTH (A ₂)	MODULE LENGTH (M ₂)	AISLE WIDTH (A ₁)	MODULE LENGTH (M ₁)	AISLE WIDTH (A ₂)	MODULE LENGTH (M ₂)
DEGREES	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft
45	8.5	12.0	19.4	27.5	12.0	31.4	14.0	52.9	—	—	24.0	62.9
60	8.5	9.8	20.7	23.9	14.0	34.7	16.0	57.4	—	—	24.0	65.4
75	8.5	8.8	20.6	21.3	16.0	36.6	19.0	60.1	—	—	24.0	65.1
90	8.5	8.5	19.0	19.0	18.0	37.0	22.0	60.0	22.0	41.0	24.0	62.0
45	9.0	12.7	19.8	28.0	12.0	31.8	14.0	53.6	—	—	24.0	63.6
60	9.0	10.4	21.0	24.2	14.0	35.0	16.0	57.9	—	—	24.0	65.9
75	9.0	9.3	20.7	21.4	16.0	36.7	19.0	60.4	—	—	24.0	65.4
90	9.0	9.0	19.0	19.0	18.0	37.0	22.0	60.0	22.0	41.0	24.0	62.0
45	9.5	13.4	20.2	28.5	12.0	32.2	14.0	54.3	—	—	24.0	64.3
60	9.5	11.0	21.2	24.5	14.0	35.2	16.0	58.4	—	—	24.0	66.4
75	9.5	9.8	20.8	21.5	16.0	36.8	19.0	60.6	—	—	24.0	65.6
90	9.5	9.5	19.0	19.0	18.0	37.0	22.0	60.0	22.0	41.0	24.0	62.0

LEGEND:

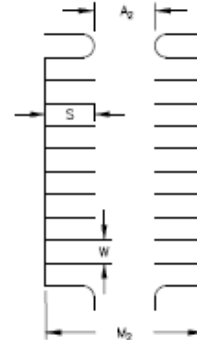
- A₁ — AISLE WIDTH, STALLS ON ONE SIDE OF AISLE
A₂ — AISLE WIDTH, STALLS ON BOTH SIDES OF AISLE
M₁ — MODULE LENGTH, STALLS ON ONE SIDE OF AISLE
M₂ — MODULE LENGTH, STALLS ON BOTH SIDES OF THE AISLE
S — STALL LENGTH
D — STALL DEPTH
W — STALL WIDTH
P — WIDTH PROJECTION
ø — ANGLE OF PARKING

NOTES:

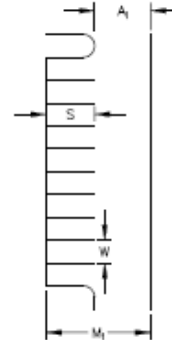
1. TWO-WAY TRAFFIC IS NOT PERMITTED FOR ANGLED PARKING WHEN BOTH THE ANGLE OF PARK IS LESS THAN 90 DEGREES AND PARKING STALLS ARE ONLY ON ONE SIDE OF THE AISLE.



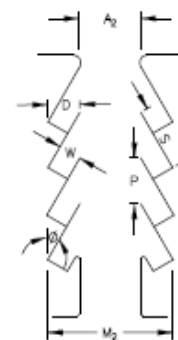
ONE-WAY/TWO-WAY
PARALLEL PARKING



ONE-WAY/TWO-WAY
ANGLED PARKING
90 DEGREE



ONE-WAY/TWO-WAY
ANGLED PARKING
90 DEGREE



ONE-WAY
ANGLED PARKING

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

PARKING LAYOUT DIMENSIONS
PRIVATE PROPERTY STANDARDS
(NOT TO SCALE)

OFF DATE

31-03

CHAPTER 32

ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY

{REVIEW NOTE: CHAPTER 32 IS COORDINATED WITH THE CITY ENGINEER ROW STANDARDS AND IS SUBJECT TO CHANGE.}

3202.1.1 Structural support. A part of a building erected below grade that is necessary for structural support of the building or structure shall not project beyond the *lot lines*, except that the footings of street walls or their supports that are located not less than 8 feet (2,438 mm) below grade shall not project more than 42 24 inches (305 610 mm) beyond the street *lot line*.

3202.2 Encroachments above grade and below 8 feet in height. Encroachments into the public right-of-way above grade and below 8 feet (2,438 mm) in height shall be prohibited except as provided for in Sections 3202.2.1 through 3202.2.3. ~~Doors and windows shall not open or project into the public right-of-way~~ Projections shall not encroach within the required width of a sidewalk.

3202.2.4 Doors. Power-operated doors and their guide rails shall not project over public property. Other doors, either when fully opened or when opening, shall not project more than 3 feet (915 mm) beyond the property line, except that in alleys no projection beyond the property line is permitted.

Exception: Doors that do not encroach within the required width of a sidewalk and that will not interfere with the sidewalk flow of pedestrian traffic as determined by the *building official* are exempt.

3202.3.1 Awnings, canopies, and marquees ~~and signs~~. Awnings, canopies, and marquees and signs shall be constructed so as to support applicable loads as specified in Chapter 16. Awnings, canopies, and marquees and signs with less than 15 feet (4 572 mm) clearance above the sidewalk shall not extend into or occupy more than two-thirds the width of the sidewalk measured from the building. Stanchions or columns that support awnings, canopies, and marquees and signs shall be located not less than 2 feet (610 mm) in from the curb line.

3202.3.3 ~~Encroachments 15 feet or more above grade.~~ Encroachments 15 feet (4 572 mm) or more above grade shall not be limited. **Entrance-type canopy.** Entrance-type canopies may have combustible coverings supported on noncombustible frames. The lowest part of such frames shall be not less than 8 feet (2,438 mm) above the grade immediately below, and the lowest part of any fringe or material attached to the covering shall be not less than 7 feet (2,133 mm) above the grade immediately below. The horizontal clearance between the entrance-type canopy and curb line shall be not less than 2 feet (610 mm). In any case, where posts may be necessary for support at the street end of such canopies, such posts shall be installed 2 feet (610 mm) from the curb line.

There shall not be any other such post on public property between these outer posts and the property line. Such canopies shall not be wider than 12 feet (3,658 mm).

3202.3.4 Pedestrian walkways. The installation of a pedestrian walkway over a public right-of-way shall be subject to the approval of the applicable governing authority. ~~The vertical clearance from the public right-of-way to the lowest part of a *pedestrian walkway* shall be not less than 15 feet (4 572 mm).~~

~~**3202.4 Temporary encroachments.** Where allowed by the applicable governing authority, vestibules and storm enclosures shall not be erected for a period of time exceeding seven months in any one year and shall not encroach more than 3 feet (914 mm) nor more than one-fourth of the width of the sidewalk beyond the street *lot line*. Temporary entrance *awnings* shall be erected with a clearance of not less than 7 feet (2 134 mm) to the lowest portion of the hood or *awning* where supported on removable steel or other *approved* noncombustible support.~~

CHAPTER 33

SAFEGUARDS DURING CONSTRUCTION

3301.1 Scope. The provisions of this chapter shall govern safety during construction and the protection of adjacent public and private properties, and in accordance with NFPA 241.

3302.2 Manner of removal. ~~Waste materials shall be removed in a manner that prevents injury or damage to persons, adjoining properties and public rights of way.~~ **Deconstruction or material removal.** Earth taken from excavations and materials or rubbish taken from buildings from day to day shall not be left upon the sidewalks or streets but shall be removed as rapidly as accumulated. When such materials are dry and likely to produce a dust when handled, they shall be kept moist so as to prevent the wind blowing the same about.

3303.8 Foundation. All concrete slabs shall be removed in conjunction with the demolition of the corresponding structure.

Exception: When a written request is submitted by the applicant and approved by the building official to use the foundation for an alternate use.

3304.1.5 Permanent excavation. Permanent excavations shall be protected by permanent means to prevent the movement of the earth of adjoining properties. Such protection shall be provided by the person causing the excavation to be made and shall be on the property and at the expense of the person causing the excavation to be made. The building official may require excavations to be protected by the construction of a substantial barricade or fence not less than 6 feet (1,828.8 mm) in height enclosing such excavated area.

3304.1.6 Protection of adjacent property. When a lot or plot is graded to a higher or lower finished grade level than the natural grade on adjacent property, the owner of such lot or plot shall provide a retaining wall or walls on his own property, to protect the adjacent property from caving of earth. Approved protection shall be provided to protect the adjacent property from overflow of water.

3304.1.7 Public property. The person causing any excavation to be made shall prevent the movement of the earth of adjoining properties and the trees and natural objects thereon or therein and shall be responsible for maintaining or restoring public sidewalks, curbs and pavements, and the properties of public utilities that may be affected by the excavation. The maintenance or restoration of sidewalks, curbs and pavements shall be performed in accordance with the grades, levels and other requirements of Houston Public Works, and the maintenance or restoration of the property of public utilities shall be in accordance with the procedures established by the owners thereof for new construction.

3304.2 Drainage. Whenever the surface of a lot or plot is excavated, filled or graded, catch basins or connected underdrains shall be installed to preclude the accumulation of surface water. Surface water shall not be drained onto adjacent property that is not in the same ownership without written permission from the owner of the adjacent property, and existing natural ground drainage of the ground area surrounding the lot or plot that is excavated, filled, or graded shall

not be obstructed. No condition shall be created, nor any existing condition maintained, whereby there will be upon any lot or plot excavations, depressions, pits, holes, gullies or other depressions that may accumulate and retain surface water. Any such condition shall be promptly abated and protected by filling in or by providing code compliant drainage.

3307.1 Protection required. Adjoining public and private property shall be protected from damage during construction, remodeling and demolition work. Protection shall be provided for footings, foundations, party walls, chimneys, skylights and roofs. Provisions shall be made to control water run-off and erosion during construction or demolition activities. The person making or causing an excavation to be made shall provide written notice to the *owners* of adjoining buildings advising them that the excavation is to be made and how that the adjoining buildings will ~~should~~ be protected. Said notification shall be delivered not less than 10 days prior to the scheduled starting date of the excavation. Such notice shall be in writing and shall state the depth and location of the proposed excavation.

3311.4 Temporary standpipes. Temporary standpipes may be provided in place of permanent systems if they are designed to furnish a minimum of 500 gallons (1,893 L) of water per minute at 50 pounds per square inch (345 kPa) pressure with a standpipe size of not less than 4 inches (102 mm). All outlets shall be not less than 2½ inches (63.5 mm). Pumping equipment sufficient to provide this pressure and volume shall be available at all times when the building reaches 150 feet (45,270 mm) above grade.

SECTION 3314

ACCESS FOR FIRE FIGHTING AND E.M.S. OPERATIONS

3314.1 Required access. Approved vehicle access for firefighting and emergency medical service shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet (30,480 mm) of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads capable of supporting vehicle loading as required by Section D102.1 of the *Fire Code* under all weather conditions up to the foundation of every structure on the site prior to the start of any vertical construction. Vehicles access shall be maintained until permanent fire apparatus access roads are available.

CHAPTER 35

REFERENCED STANDARDS

{EDITORIAL NOTE: PORTIONS OF THIS CHAPTER NOT SHOWN SHALL REMAIN AS SET FORTH IN THE 2015 IBC.}

ASHRAE

ASHRAE 1791 Tullie Circle, NE
Atlanta, GA 30329

<u>Standard Reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
170—2008	<u>Ventilation of Health Care Facilities</u>	<u>1203.1</u>

ASTM

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

<u>Standard Reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
B31.3—2012	Process Piping.....	415.11.6
<u>E 90—09(2016)</u>	<u>Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements</u>	<u>N104.1, N105.1</u>

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

<u>Standard Reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
70—2014	National Electrical Code	108.3, 415.11.1.8, 904.3.1, 907.6.1, 909.12.2, 909.16.3, 1205.4.1, 2701.1, 2702.1.2, G501.4, G1001.6, H106.1, H106.2, K101, K111.1
<u>241—19</u>	<u>Standard for Safeguarding Construction, Alteration, and Demolition Operations</u>	<u>3301.1</u>

CHAPTER 46
HOUSTON SIGN CODE

The Houston Sign Code, which is published as a separate document, constitutes Chapter 46.

CHAPTER 62

LAKE HOUSTON STRUCTURES

SECTION 6201 **PURPOSE**

6201.1 General. This chapter prescribes design requirements applicable to bulkheads, piers, jetties and pontoon- or raft-type boats constructed in or on Lake Houston as allowed in Chapter 23 of the *City Code*.

A separate permit shall be required for each structure. In addition to the building permit, a yearly license must be obtained as required in Chapter 23, Article IV, Division 2, of the *City Code*.

The *building official* shall inspect all pier, bulkhead, and jetty sites before a permit is issued and after construction is completed. Additionally, the *building official* may require a final inspection of the said sites.

All bulkheads, jetties, and piers shall be designed by and bear the seal of a professional engineer licensed by the State of Texas.

6201.2 Existing structures. All floating structures shall be brought into conformance with the requirements of this chapter. All other structures shall be subject to the requirements of Section 102.6.1 and 115.

6201.3 Definitions. For the purpose of this chapter, these terms are defined in Chapter 2:

BULKHEAD.

COMMERCIAL PIER.

JETTY.

PIER.

PRIVATE PIER.

SECTION 6202 **PIER CONSTRUCTION**

6202.1 Pier construction. All piers shall comply with the following:

6202.1.1 Projection. No pier may project more than 30 feet (9.144 meters) past the point at which a 5-foot depth of water is encountered when the lake is at spillway level. No pier shall project so as to be closer to another property than that from which it projects, at any point on such pier. No pier may project more than one-third of the distance across any body of water, inlet, bay, channel, stream, or cove. No pier may be located closer than 5 feet to an extended property line. The maximum width of a commercial pier shall not exceed 12 feet, and the maximum width of a private pier shall not exceed 8 feet. No pier shall protrude into a body of water, turn, then return back to the shore of any property. Violations of this section shall be subject to penalties as prescribed in Section 114.1

6202.1.2 Superstructures. Piers may be provided with posts, railings and roofs, but shall be without walls of any kind whatsoever. Upper decks shall be limited to 600 square feet

in total area. The total area for a superstructure, upper deck and boathouse combined shall not exceed 1300 square feet.

Exception: Enclosed storage that does not exceed 40 square feet may be provided to store fishing and boating equipment.

6202.1.3 Electric power. Electrical wiring shall comply with the *Electrical Code*.

6202.1.4 Lumber. Wood piles and all lumber used in pier construction shall be pressure treated with an approved preservative.

6202.1.5 Warning devices. Amber or yellow reflectors with 3-inch-minimum-diameter lenses shall be placed on all piers and other surface installations placed in the lake. Reflectors shall be placed not more than 8 feet apart and shall be 18 inches above the water when the lake is at spillway elevation or elevation 44½ feet above mean sea level.

6202.1.6 Design requirements. Commercial piers shall be designed for at least 100 pounds per square foot live floor load. Private piers shall be designed for at least 50 pounds per square foot live floor load.

Wave action on piers shall be computed by the following formula: $P=125h^2$ (tan angle), in which the point of application is assumed to be at $\frac{3}{8}h$; P =wave pressure, in pounds per linear foot of wave or per square foot of pier area at $\frac{3}{8}h$; h =height of wave in feet (minimum for h shall be 4 feet); and angle=maximum angle between center line of pier and wave front (minimum angle is 15 degrees).

6202.1.7 Plumbing. Plumbing shall comply with the *Plumbing Code*.

6202.1.8 Alternative materials. A pier constructed of alternative materials, when approved by the *building official* in accordance with Section 104.11, shall meet or exceed minimum structural requirements and shall support or resist a surcharge of dead weight or load against it as outlined in Section 6202.1.6 above.

6202.2 Private piers. In lieu of the design requirements in Section 6202.1.6, private piers may be constructed as follows:

6202.2.1 Piles. The minimum diameter of a pile shall be 4 inches. Piles shall be embedded at least 30 inches in firm soil.

6202.2.2 Column action. All piles shall be braced with diagonal braces with not less than 2-inch by 4-inch lumber, pressure treated, and bolted with at least ½-inch galvanized bolts. Two bents (set of diagonal braced piles) in any pier shall be connected with X braces.

6202.2.3 Framing. Ledgers shall be at least 2-inch by 6-inch nominal in size and shall be bolted with at least two ½-inch galvanized bolts.

6202.2.4 Stringers. Stringers shall be at least 2-inch by 8-inch nominal in size and spaced no more than 3 feet on center.

6202.2.5 Decking. Decking must not be less than 2 feet above 44½ feet elevation. Nominal size planks shall not be less than 2-inch by 6-inch No. 2 grade, spaced not less than ¼-inch and not more than 1 inch apart, nailed with at least two 16d galvanized nails at each bearing.

SECTION 6203 **FLOATING PIERS**

6203.1 Floating piers. The provisions of this section shall not apply to canoes, row boats, sail boats and other boats having a single hull. All floating piers, rafts, houseboats and other structures in use on the waters of Lake Houston shall comply with applicable requirements of Section 6202.2 and the following:

6203.1.1 Flotation. Flotation shall be by properly sealed barrels, drums, tanks or pontoons constructed of marine plywood, cypress, redwood, fiberglass, foam plastic or metal. Ferrous metals shall be covered with a marine rust-resistant coating.

6203.1.2 Fasteners. All barrels, drums, tanks or pontoons used as floats shall be secured in place by means of steel straps, bolts, welds or other fasteners of similar strength and permanency. All fasteners, including bolts, nails and screws used in the floats shall be coated with rust-resistant marine coatings. No strap shall be less than 16 U.S. gauge (1.6 mm) in the least dimension.

6203.1.3 Steel framing. Steel framing members shall meet the requirements of Chapter 22. All steel fasteners shall be covered with a marine rust-resistant coating or be galvanized.

6203.1.4 Wood framing. All timber shall be redwood, cypress, or any other wood that has been pressure treated against decay. The least dimension of a beam or girder shall be 4 inches (101.6 mm) in width, and the depth shall not be less than 8 inches (203.2 mm).

6203.1.5 Flooring. Flooring shall be at least 2 inches (50.8 mm) nominal thickness and shall be cypress, redwood, or any other wood that has been pressure treated against decay.

Exception: Marine or exterior-grade plywood, ¾ inch (19.05 mm) minimum, may be used for flooring if it meets the requirements of Chapter 23.

6203.1.6 Fasteners. All fasteners shall be galvanized or coated with a rust-resistant marine material.

6203.1.7 Superstructures. Rooms, cabins, houses and roofs above the platform level shall meet the requirements of Chapters 22 and 23.

6203.1.8 Projection. Notwithstanding Section 6202.1.1, floating piers shall not exceed 300 square feet (27.87091 m²) in total area, with a minimum width of 8 feet (2,438.4 mm) and a maximum width of 12 feet (3,657.6 mm).

SECTION 6204 **BULKHEAD CONSTRUCTION**

6204.1 Bulkhead construction. Bulkheads shall be constructed of wood, steel, concrete or aluminum. All wood used in construction of bulkheads shall be pressure treated with an approved preservative.

All private bulkheads shall be constructed on private property. This chapter shall not prohibit the city from constructing or causing to be constructed retaining walls or bulkheads where there is a hazard to life, limb or property or where there is evidence of pollution on the lake.

6204.2 Wood bulkheads. All bulkheads shall be designed by and bear the seal of a professional engineer licensed by the State of Texas and shall comply with the following.

6204.2.1 Piles. The minimum diameter of a pile shall be 5 inches (127 mm). Piles shall be embedded a minimum of 5 feet (1,524 mm) into firm soil. Piles shall be 1 inch (25.4 mm) larger in diameter and shall be embedded 1 foot (304.8 mm) deeper for each 5 feet (1,524 mm) above ground. Piles shall not be spaced further apart than 6 feet (1,828.8 mm) center to center.

6204.2.2 Horizontal members. Horizontal members shall be of at least 3-inch (76.2 mm) by 8-inch (203.2 mm) lumber. Two horizontal members are required for piles measuring 5 feet (1,524 mm) or less above natural ground. Three horizontal members are required for piles measuring more than 5 feet (1,524 mm) above natural ground. Horizontal members shall be attached to the wood piles with not less than ½-inch (12.7 mm) galvanized bolts, washers and nuts, or not less than two 60d common galvanized nails.

6204.2.3 Vertical members. Vertical members shall be of at least 2-inch (50.8 mm) by 6-inch (152.4 mm) nominal lumber. All vertical members shall be embedded a minimum of 3 feet (914.4 mm) into firm soil. Cracks between members shall not exceed ⅛ inch (3.175 mm). Vertical members shall be attached to each horizontal member with not less than two 16d common galvanized nails.

6204.2.4 Anchors. Anchors shall be at least 8 inches (203.2 mm) wide and not less than 4 feet in length and shall be embedded into firm soil a minimum of 30 inches (762 mm). All piles shall be secured to an anchor. Not more than three piles shall be secured to any one anchor. Anchor ties shall be a minimum of ½-inch (12.7 mm) galvanized cable with two galvanized clamps on each end or a minimum size ½-inch (12.7 mm) rod secured to the bulkhead and anchor. Other types of anchors may be used when approved by the *building official* in accordance with Section 104.11.

6204.3 Concrete bulkheads. Concrete bulkheads shall comply with the following:

6204.3.1 General. All concrete bulkheads shall be of at least four and one-half sack mix and test a minimum of 2,500 lbs./in.² at 28 days. The bulkhead shall be embedded a minimum of 36 inches (914.4 mm) into firm soil and shall not extend more than 30 inches (762 mm) above the grade of the fill behind the bulkhead. The width of the concrete shall be a minimum of 10 inches (254 mm) for the part below grade and at least 6 inches (152.4 mm) for the part above grade.

6204.3.2 Reinforcing. Reinforcement shall consist of reinforcing steel rods of at least No. 3 size placed every 18 inches (457.2 mm) vertically and every 18 inches (457.2 mm) horizontally. All intersecting steel shall be securely tied or welded to ensure position in the foundation.

6204.3.3 Anchors. If anchors are used, they must be of an approved type acceptable to the *building official*.

6204.4 Steel sheet pile bulkheads. Steel sheet pile bulkheads shall comply with the following.

6204.4.1 General. Steel shall meet standards of ASTM A 245. All piles shall be of not less than No. 12 gauge. The depth of crimp shall not be less than 1½ inches (38.1 mm) and the width of the crimp shall not be less than 3½ inches (88.9 mm). Piles shall not have less than 1-inch (25.4 mm) crimped interlocks along both vertical sides. Finished pile width shall not be less than 12 inches (304.8 mm). Piles shall be embedded not less than 4 feet (1,219.2 mm) into firm soil and shall not extend more than 30 inches (762 mm) above grade. A form-fitting driving head or sheet driver shall be used to prevent pile damage.

6204.4.2 Anchors. If anchors are used, they shall be of an approved type acceptable to the *building official*.

6204.5 Alternative materials. A bulkhead constructed of alternative materials shall meet or exceed minimum structural requirements according to accepted engineering practices and shall support or resist a surcharge of dead weight or load against it, as is necessary for it to retain. The alternative material shall also be non-polluting and non-corrosive.

SECTION 6205
JETTY CONSTRUCTION

6205.1 Jetty construction. Jetties may be built wherever a need is determined by and with the written authorization of the director of Houston Public Works where not specifically prohibited by the *City Code*. Jetties must be constructed utilizing one of the approved types of bulkheads listed in Section 6204.

APPENDIX F

RODENTPROOFING

The provisions contained in this appendix are ~~not~~ mandatory ~~unless specifically referenced in the adopting ordinance.~~

{EDITORIAL NOTE: ALL OTHER PROVISIONS OF THIS APPENDIX SHALL REMAIN AS SET FORTH IN THE 2015 IBC.}

APPENDIX J

EXCAVATION AND GRADING

The provisions contained in this appendix are ~~not~~ mandatory ~~unless specifically referenced in the adopting ordinance.~~

{EDITORIAL NOTE: CONTENTS OF APPENDIX J NOT SHOWN SHALL REMAIN AS SET FORTH IN THE 2015 IBC.}

SECTION J101 GENERAL

J101.1 Scope. The provisions of this ~~chapter~~ appendix apply to grading, excavation and earthwork construction, including fills and embankments; establish the administrative procedure for issuance of permits; and provide for approval of plans and inspection of grading construction. Where conflicts occur between the technical requirements of this ~~chapter~~ appendix and the geotechnical report, the geotechnical report shall ~~govern~~ prevail.

J101.2 Flood hazard areas. All grading, excavation and earthwork construction, including fills and embankments, that is to be performed in a floodway or a Houston special flood hazard area as defined by FEMA or Chapter 19 of the City Code shall be in conformance with Chapter 19 of the City Code and the Infrastructure Design Manual. Unless the applicant has submitted an engineering analysis, prepared in accordance with standard engineering practice by a registered design professional, that demonstrates the proposed work will not result in any increase in the level of the base flood, grading, excavation and earthwork construction, including fills and embankments, shall not be permitted in floodways that are in flood hazard areas established in Section 1612.3 or in flood hazard areas where design flood elevations are specified but floodways have not been designated.

J102.1 Definitions. The following words and terms shall, for the purposes of this appendix, have the meanings shown herein. ~~Refer to and in~~ Chapter 2 of this code ~~for general definitions.~~

APPROVAL.

AS-GRADED.

BEDROCK.

CIVIL ENGINEER.

CIVIL ENGINEERING.

EARTH MATERIAL.

ENGINEERING GEOLOGIST.

ENGINEERING GEOLOGY.

GRADE, ROUGH.

GRADING, ENGINEERED.

GRADING, REGULAR.

PROFESSIONAL INSPECTION.

SITE.

SLOPE.

SOIL.

SOILS ENGINEER (GEOTECHNICAL ENGINEER).

SOILS ENGINEERING (GEOTECHNICAL ENGINEERING).

J103.2 Exemptions. A grading *permit* shall not be required for the following if the work meets the definition of *regular grading*:

1. When approved by the *building official*, grading in an isolated, self-contained area, provided there is no danger to the public and that such grading will not adversely affect adjoining properties.
2. Excavation below finished grade for construction of basements and footings of a building, retaining wall or other structure permitted under this code. This shall not exempt any fill made with the material from such excavation or exempt any excavation having an unsupported height greater than 5 feet (1,524 mm) after the completion of such structure.
3. Cemetery graves.
4. Refuse disposal sites controlled by other regulations.
5. Excavations for wells, tunnels or trenches for utilities.
6. Mining, quarrying, excavating, processing or stockpiling of rock, sand, gravel, aggregate or clay controlled by other regulations, provided such operations do not affect the lateral support of, or significantly increase stresses in, soil on adjoining any adjacent or contiguous properties.
7. Exploratory excavations performed under the direction of ~~a registered design professional~~ soil engineers or engineering geologists.

Exemption from the permit requirements of this appendix shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this *jurisdiction*.

J103.3 State and federal requirements. This appendix is cumulative of all state and federal laws and regulations, including, but not limited to, Chapter 756 of the *Texas Health and Safety Code* and regulations issued thereunder and the U.S. Department of Labor Occupational Safety and Health Administration standards. No provision of this appendix, nor any permit issued hereunder, shall be construed to authorize any work to be performed in a manner inconsistent with state or federal requirements. It is the responsibility of the permit holder to ensure compliance therewith.

{EDITORIAL NOTE: DELETE SECTION J104 TEXT IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING.}

J104.1 Permits required. Except as exempted in Section J103, no person shall do any grading without first obtaining a grading permit from the *building official*. A separate permit shall be obtained for each site, and a single permit may cover both excavations and fills on one site.

J104.1.1 Grading permit fees. Fees shall be assessed in accordance with the provisions of this section, Section 118, and the city fee schedule. A fee for each grading permit shall be paid to the *building official* as set forth in Section 118.2.1. Separate permits and fees shall apply to retaining walls or major drainage structures as required elsewhere in this code. There shall be no separate charge for standard terrace drains and similar facilities.

J104.1.2 Bond required. The *building official* may require bonds in such form and amounts as may be deemed necessary to ensure that the work, if not completed in accordance with the approved plans and specifications, will be corrected to eliminate hazardous conditions.

In lieu of a surety bond, the applicant may file a cash bond or instrument of credit with the *building official* in an amount equal to that which would be required in the surety bond.

J104.2 Application. The provisions of Section 105.3 are applicable to grading. Additionally, the application shall state the estimated quantities of work involved.

J104.3 Grading destination. Grading in excess of 1,000 cubic yards (765 m³) shall be performed in accordance with an approved grading plan prepared by a Texas professional engineer and shall be designated as “*engineered grading*.” Grading involving less than or equal to 1,000 cubic yards (765 m³) shall be designated “*regular grading*” unless the permittee chooses to have the grading performed as *engineered grading* or the *building official* determines that the property is located in a Houston special flood hazard area as defined in Chapter 19 of the *City Code* and special conditions or unusual hazards exist, in which case *grading* shall conform to the requirements for *engineered grading*.

J104.4 Engineered grading requirements. Application for a *grading* permit shall be accompanied by two sets of plans and specifications, as well as supporting data consisting of a *soils engineering* report and *engineering geology* report. The plans and specifications shall be prepared and signed by a Texas professional engineer.

Specifications shall contain information covering construction and material requirements.

Plans shall be drawn to scale upon substantial paper or cloth and shall be of sufficient clarity to indicate the nature and extent of the work proposed and show in detail that they will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations. The first sheet of each set of plans shall display the location of the work, the name and address of the owner, and the name of the person who prepared them.

The plans shall include the following information:

1. General vicinity of the proposed *site*.
2. Property limits and accurate contours of existing ground and details of terrain and area drainage.
3. Limiting dimensions, elevations or finish contours to be achieved by the *grading* and proposed drainage channels and related construction.
4. Detailed plans of all surface and subsurface drainage devices, walls, cribbing, dams and other protective devices to be constructed with, or as a part of, the proposed work, together with a map showing the drainage area and the estimated runoff of the area served by any drains.
5. Location of any buildings or structures on the *site* upon which the work is to be performed and the location of any buildings or structures on property adjacent to

the site that are within 15 feet (4,572 mm) of the property or that may be affected by the proposed *grading* operations.

6. The dates of *soils engineering* and *engineering geology* reports together with the names, addresses, and phone numbers of the firms or individuals who prepared the reports.

Recommendations included in the *soils engineering* report and the *engineering geology* report shall be incorporated in the *grading* plans or specifications. Specific recommendations contained in the *soils engineering* report and the *engineering geology* report that are applicable to the proposed *grading* shall at minimum be included by reference in the *engineered grading* plans.

J104.5 Soils engineering report. The soils engineering report required by Section J104.4 shall include data regarding the nature, distribution, and strength of existing soils; conclusions and recommendations for grading procedures; design criteria for corrective measures, including buttress fills, when necessary; and opinion on adequacy for the intended use of sites to be developed by the proposed grading as affected by soils engineering factors, including the stability of slopes.

J104.6 Engineering geology report. The *engineering geology* report required by Section J104.4 shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and opinion on the adequacy for the intended use of sites to be developed by the proposed *grading*, as affected by geologic factors.

J104.7 Liquefaction study. The *building official* may require a geotechnical investigation in accordance with Section 1803 when, during the course of an investigation, all of the following conditions are discovered:

1. Shallow ground water, 50 feet (15,240 mm) or less;
2. Unconsolidated sandy alluvium; and
3. Seismic Zones C and D.

The report of the investigation shall address the potential for liquefaction.

J104.8 Regular grading requirements. Each application for a *grading* permit shall be accompanied by a plan in sufficient clarity to indicate the nature and extent of the work. The plans shall give the location of the work, the name of the owner, and the name of the person who prepared the plan. The plan shall include the following information:

1. General vicinity of the proposed *site*;
2. Limiting dimensions and depth of cut and fill; and
3. Location of any buildings or structures on the site upon which the work is to be performed and the location of any buildings or structures within 15 feet (4,572 mm) of the proposed grading.

J104.9 Issuance. The provisions of Section 105.3 are applicable to grading permits. The *building official* may require that grading operations and project designs be modified if delays occur which incur weather-generated problems not considered at the time the permit was issued.

{EDITORIAL NOTE: DELETE SECTION J105 TEXT IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING.}

SECTION J105 **GRADING INSPECTIONS**

J105.1 General. Grading operations for which a permit is required shall be subject to inspection by the *building official*. Professional inspection of grading operations shall be provided by a Texas professional engineer retained to provide such services in accordance with Section J105.5 for engineered grading and as required by the *building official* for regular grading.

J105.2 Civil engineer. The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade and surface drainage of the development area. If revised plans are required by a code official during the course of the work, they shall be prepared by the civil engineer.

J105.3 Soils engineer. The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this appendix. Revised recommendations if any relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the *building official*, and the civil engineer.

J105.4 Engineering geologist. The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.

J105.5 Permittee. The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this code. The permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator among the consultants, the contractor, and the *building official*. In the event of changed conditions, the permittee shall be responsible for informing the *building official* of such change and shall provide revised plans for approval.

J105.6 Building official. The *building official* shall inspect the project at the various stages of work requiring approval to determine the adequate control is being exercised by the professional consultants.

J105.7 Notification of noncompliance. If, in the course of fulfilling their respective duties under this appendix, the civil engineer, the soils engineer, or the engineering geologist finds that the work is not being done in conformance with this appendix or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the *building official*.

J105.8 Transfer of responsibility. If the civil engineer, the soils engineer, or the engineering geologist of record is changed during grading, the work shall be stopped until the replacement has agreed in writing to accept responsibility within the area of the consultant's technical competence for approval upon completion of the work. It shall be the duty of the permittee to notify the *building official* in writing of such change prior to the recommencement of such grading.

J105.9 Hazards. Whenever the *building official* determines that any existing excavation, embankment, or fill on private property has become a hazard to life and limb, endangers property, or adversely affects the safety, use, or stability of a public way or drainage channel, the owner or agent in control of the property upon which the excavation or fill is located, upon receipt of notice

in writing from the *building official*, shall within the period specified therein repair or eliminate such excavation or embankment so as to eliminate the hazard and be in conformance with the requirements of this code.

J105.10 Final reports. Upon completion of the rough *grading* work and at the final completion of the work, the following reports and drawings and supplements thereto are required for *engineered grading* or when *professional inspection* is performed for *regular grading*, as applicable.

1. An as-built *grading* plan prepared by the Texas professional engineer engaged to provide such services in accordance with Section J105.5 showing original ground surface elevations, *as-graded* ground surface elevations, lot drainage patterns, and the locations and elevations of surface drainage facilities and of the outlets of subsurface drains. As-constructed locations, elevations and details of subsurface drains shall be shown as reported by the *soils engineer*. A Texas professional engineer shall provide a special inspection report to the field inspector that states, to the best of their knowledge, the work within their area of responsibility was done in accordance with the final approved *grading* plan and applicable provisions of this appendix chapter.
2. A report prepared by the *soils engineer* is engaged to provide such services in accordance with Section J105.5, including locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any changes made during *grading* and their effect on the recommendations made in the approved *soils engineering* investigation report. *Soils engineers* shall provide a special inspection report to the field inspector that states, to the best of their knowledge, the work within their area of responsibilities is in accordance with the approved *soils engineering* report and applicable provisions of this appendix.
3. A report prepared by the *engineering geologist* is engaged to provide such services in accordance with Section J105.5, including a final description of the geology of the *site* and any new information disclosed during the *grading* and the effect of same on recommendations incorporated in the approved *grading* plan. *Engineering geologists* shall provide a special inspection report to the field inspector that states, to the best of their knowledge, the work within their area of responsibility is in accordance with the approved *engineering geologist* report and applicable provisions of this appendix.

J105.11 Notification of completion. The permittee shall notify the *building official* when the grading operation is ready for final inspection. Final approval shall not be given until all work, including installation of all drainage facilities and their protective devices, and all erosion-control measure have been completed in accordance with the final approved *grading* plan and the required special inspection reports have been submitted.

J106.1 Maximum slope. The slope of cut surfaces shall be no steeper than is safe for the intended use, and shall be not more than one unit vertical in two units horizontal (50-percent slope) unless the owner or the owner's authorized agent furnishes a geotechnical report soils engineering or an engineering geology report, or both, justifying a steeper slope stating that the site has been investigated and giving an opinion that a cut at a steeper slope will be stable and not create a hazard to public or private property.

Exceptions:

1. A cut surface shall be permitted to be at a slope of 1.5 units horizontal to one unit vertical (67-percent slope) provided that all of the following are met:
 - 1.1 It is not intended to support structures or surcharges.
 - 1.2 It is adequately protected against erosion.
 - 1.3 It is no more than 8 feet (2,438 mm) in height.
 - 1.4 It is approved by the building code official.
 - 1.5 Ground water is not encountered.
2. A cut surface in bedrock shall be permitted to be at a slope of one-unit horizontal to one unit vertical (100-percent slope).

J107.1 General. Unless otherwise recommended in the ~~geotechnical~~ soils engineering report, fills shall comply with the provisions of this section.

In the absence of an approved soils engineering report, these provisions may be waived for minor fills not intended to support structures.

J107.2 Surface preparation. The ground surface shall be prepared to receive fill by removing vegetation, topsoil and other unsuitable materials; and scarifying the ground to provide a bond with the fill material. The area beyond the toe of fill shall be sloped for sheet overflow or a paved drain shall be provided. When fill is to be placed over a cut, the bench under the toe of fill shall be at least 10 feet (3,048 mm) wide, but the cut shall be made before acceptance by the soils engineer or engineering geologist, or both, as a suitable foundation for fill and placement of the fill.

J107.4 Fill material. Fill material shall not include organic, frozen or other deleterious materials. Except as permitted by the building official, no rock or similar irreducible material greater than 12 inches (305 mm) in any dimension shall be included in fills.

Exception: The building official may permit placement of larger rock when the soils engineer properly devises a method of placement and continuously inspects its placement and approves the fill stability. The following conditions shall also apply:

1. Prior to issuance of the grading permit, potential rock disposal areas shall be delineated on the grading plan.
2. Rocks of a size greater than 12 inches (305 mm) in maximum dimension shall be placed 10 feet (3,048 mm) or more below grade, measured vertically.
3. Rocks shall be placed so as to assure filling of all voids with well-graded soil.

J107.6 Maximum slope. The slope of fill surfaces shall be no steeper than is safe for the intended use. Fill slopes steeper than one-unit vertical in two units horizontal (50-percent slope) shall be justified by a ~~geotechnical~~ an approved soils engineering report ~~or engineering data.~~

J108.4 Modification of slope location. The *building official* may approve alternate setbacks. The *building official* may require an investigation and recommendation by a qualified engineer or engineering geologist to demonstrate that the intent of this section has been satisfied.

J109.1 General. Unless otherwise indicated ~~by a registered design professional~~ on the approved grading plan, drainage facilities and terracing shall be provided in accordance with the requirements of this section.

Exception: Drainage facilities and terracing need not be provided where the ground slope is not steeper than one unit vertical in three units horizontal (33-percent slope).

J109.5 Subsurface drainage. Cut and fill slopes shall be provided with subsurface drainage as necessary for stability.

J109.6 Disposal. All drainage facilities shall be designed to carry waters to the nearest practicable drainage way approved by the *building official* or other appropriate *jurisdiction* as a safe place to deposit such waters. Erosion of ground in the area of discharge shall be prevented by installation of nonerosive downdrains or other devices.

Building pads shall have a drainage gradient of 2 percent toward approved drainage facilities, unless waived by the *building official*.

Exception: The gradient from the building pad may be 1 percent if all of the following conditions exist throughout the permit area:

1. No proposed fills are greater than 10 feet (3,048 mm) in maximum depth.
2. No proposed finish cut or fill slope faces have a vertical height in excess of 10 feet (3,048 mm).
3. No existing slope faces steeper than 1 unit vertical in 10 units horizontal (10% slope) have a vertical height in excess of 10 feet (3,048 mm).

APPENDIX K

{EDITORIAL NOTE: DELETE APPENDIX K TEXT IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING.}

CONVENTIONAL LIGHT-FRAME WOOD CONSTRUCTION FOR HIGH-WIND AREAS

SECTION K101 GENERAL

K101.1 Scope. This appendix applies to regular-shaped buildings that are not more than three stories in height and are of conventional light-frame construction.

Exception: Detached carports and garages not exceeding 700 square feet (65 m²) and accessory to Group R-3 occupancies need only comply with the roof-member-to-wall-tie requirements of Section K103.8.

SECTION K102 DEFINITION

K102.1 General. The following terms, for the purposes of this appendix, shall have the meaning ascribed in Chapter 2:

CORROSION RESISTANT or NONCORROSIVE.

SECTION K103 COMPLETE LOAD PATH AND UPLIFT TIES

K103.1 General. Blocking, bridging, straps, approved framing anchors or mechanical fasteners shall be installed to provide continuous ties from the roof to the foundation system. Tie straps shall be 1½-inch (28.6 mm) by 0.036-inch (0.91 mm) (No. 20 gage) sheet steel and shall be corrosion-resistant as herein specified. All metal connectors and fasteners used in exposed locations or in areas otherwise subject to corrosion shall be of corrosion-resistant or noncorrosive material. The number of common nails specified is the total required and shall be equally divided on each side of the connection. Nails shall be spaced to avoid splitting of the wood.

Exception: Pre-manufactured connectors that provide equal or greater tie-down capacity may be used, provided that they are installed in compliance with all the manufacturer's specifications.

K103.2 Wall-to-foundation tie. Exterior walls shall be tied to a continuous foundation system or an elevated foundation system in accordance with Section K105.

K103.3 Sills and foundation tie. Foundation plates resting on concrete or masonry foundations shall be bolted to the foundation with not less than ½-inch-diameter (13 mm) anchor bolts with 7-inch-minimum (178 mm) embedment into the foundation and spaced not more than 4 feet (1,219 mm) on center.

K103.4 Floor-to-foundation tie. The lowest-level exterior wall studs shall be connected to the foundation sill plate or an approved elevated foundation system with bent tie straps spaced not more than 48 inches (1,219 mm) on center. Tie straps shall be nailed with a minimum of 4 ten penny nails.

K103.5 Wall framing details. The spacing of studs in exterior walls shall be in accordance with Chapter 23. Mechanical fasteners complying with this appendix shall be installed at a maximum of 32 inches (813 mm) on center as required to connect studs to the sole plates, foundation sill plate and top plates of the wall. The fasteners shall be nailed with a minimum of 8 eight penny nails.

Where openings exceed 32 inches (813 mm) in width, the required tie straps shall be at each edge of the opening and connected to a doubled full-height wall stud. When openings exceed 12 feet (3,658 mm) in width, two ties at each connection or a manufactured fastener designed to prevent uplift shall be provided.

K103.6 Wall sheathing. All exterior walls and required interior main cross-stud partitions shall be sheathed in accordance with Chapter 23.

K103.7 Floor-to-floor tie. Upper-level exterior wall studs shall be aligned and connected to the wall studs below with tie straps placed a minimum of 32 inches (813 mm) on center and connected with a minimum of 6 eight penny nails per strap.

K103.8 Roof-members-to-wall tie. Tie straps shall be provided from the side of the roof-framing member to the supporting member below the roof. Tie straps shall be placed no further apart than every roof-framing member and connected with a minimum of 8 eight penny nails.

K103.9 Ridge ties. Opposing common rafters shall be aligned at the ridge and be connected at the rafters with tie straps spaced a maximum of 32 inches (813 mm) on center and connected with 8 eight penny nails.

K103.10 Gable-end walls. Gable-end wall studs shall be continuous between points of lateral support that are perpendicular to the plane of the wall. Gable-end wall studs shall be attached with approved mechanical fasteners at the top and bottom. Eight 8 penny nails shall be required for each fastener. Fasteners shall be spaced a maximum of 32 inches (813 mm) on center.

SECTION K104

ROOFS

K104.1 Roof sheathing. Solid roof sheathing shall be applied and shall consist of a minimum 1-inch-thick (25.4 mm) nominal lumber applied diagonally or a minimum 15/32-inch-thick (11.9 mm) wood structural panel or particle board (OSB) or other approved sheathing applied with the long dimension perpendicular to supporting rafters. Sheathing shall be nailed to roof framing in an approved manner. The end joints of wood structural panels or particle board shall be staggered and shall occur over blocking, rafters, or other supports.

K104.2 Roof covering. Roof coverings shall be approved and shall be installed and fastened in accordance with Chapter 15 and with the manufacturer's instructions.

K104.3 Roof overhang. The roof eave overhang shall not exceed 3 feet (914 mm) unless an analysis is provided showing that the required resistance is provided to prevent uplift.

The roof overhang at gabled ends shall not exceed 2 feet (610 mm) unless an analysis showing that the required resistance to prevent uplift is provided.

SECTION K105

ELEVATED FOUNDATION

K105.1 General. When approved, elevated foundations supporting not more than one story and meeting the provisions of this section may be used. The *building official* shall require a foundation investigation prior to authorizing the final approval of such work.

K105.2 Material. All exposed wood-framing members shall be treated wood. All metal connectors and fasteners used in exposed locations shall be corrosion-resistant or noncorrosive steel.

K105.3 Wood piles. The spacing of wood piles shall not exceed 8 feet (2,438.4 mm) on center. Square piles shall not be less than 10 inches (254 mm), and tapered piles shall have a tip of not less than 8 inches (203 mm). Eight-inch-round (203 mm) piles shall have a minimum embedment length of 5 feet (1,524 mm) and shall project not more than 8 feet (2,438.4 mm) above undisturbed ground surface. Eight-inch (203 mm) taper piles shall have a minimum embedment length of 6 feet (1,828.8 mm) and shall project not more than 7 feet (2,133.6 mm) above undisturbed ground surface.

K105.4 Girders. Floor girders shall consist of solid sawn timber, built-up 2-inch-thick (51 mm) lumber, or trusses. Splices shall occur over wood piles. The floor girders shall span in the direction parallel to the potential floodwater and wave action.

K105.5 Connections. Wood piles may be notched to provide a shelf for supporting the floor girders. The total notching shall not exceed 50 percent of the pile cross section. Approved bolted connections with ¼-inch (6.4 mm) corrosion-resistant or noncorrosive steel plates and ¾-inch-diameter (19 mm) bolts shall be provided. Each end of the girder shall be connected to the piles using a minimum of two ¾-inch-diameter (19 mm) bolts.

APPENDIX L

{EDITORIAL NOTE: DELETE APPENDIX L TEXT IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING.}

LIFE-SAFETY REQUIREMENTS FOR EXISTING BUILDINGS

L101 GENERAL. Provisions formerly located in Appendix L of this code have been relocated to Appendix D of the *Existing Building Code*. Any reference to Appendix L of this code in any code or pamphlet shall be a reference to Appendix D in the *Existing Building Code* until such document is corrected.

APPENDIX N

AIRPORT SOUND ATTENUATION

REQUIREMENTS

SECTION N101

GENERAL

N101.1 Purpose. The purpose of this appendix is to set forth sound attenuation specifications for buildings when such sound attenuation is required by Chapter 9, Article VI, of the *City Code* to achieve an interior sound level of 45 dBA or less.

N101.2 Applicability. These provisions shall apply under circumstances where an airport land use permit is required under Section 9-381(a)(2) and (3) of the *City Code* and are in addition to other applicable building standards set forth elsewhere in this code.

N101.3 Alternate compliance. Alternative means or methods which equal or exceed the standards set forth in these provisions may be used when approved by the *building official* in accordance with Section 104.11.

SECTION N102

DEFINITIONS

N102.1 Definitions. The following terms, for the purposes of this appendix, shall have the meaning ascribed in Chapter 2:

SOUND TRANSMISSION CLASS (STC).

SECTION N103

WALLS

N103.1 General. The specific exterior wall assemblies set forth in Sections N103.2 and N103.3 shall include the interior finishes set forth therein.

Exception: Exterior wall assemblies or materials that have been tested or listed with a minimum STC rating of 40.

N103.2 Brick veneer. When exterior walls are constructed using brick veneer, a minimum of ½-inch gypsum drywall shall be applied as the interior finish.

N103.3 Vinyl or cement sidings. When exterior walls are constructed using vinyl or cement sidings, a minimum of 5⁄8-inch gypsum drywall shall be applied as the interior finish.

N103.4 Other assemblies and materials. All other exterior wall assemblies or materials shall have a tested or listed minimum STC rating of 40.

SECTION N104

WINDOWS

N104.1 Windows. All windows shall have a minimum STC rating of 40 when tested in accordance with ASTM E 90.

N104.2 Insulation at windows. The cavity between the framing and the window frame shall be insulated with fiberglass or foam insulation to the depth of the window frame.

SECTION N105 **DOORS**

N105.1 Doors. All exterior doors shall be provided with a minimum STC rating of 40 when tested in accordance with ASTM E 90.

Exception: An exterior door may have a tested or listed STC rating of less than 40 when installed with a storm door which when combined achieve a minimum tested or listed STC rating of 40.

SECTION N106 **ROOF/CEILING ASSEMBLIES**

N106.1 General. Roof/ceiling assemblies shall be constructed in accordance with the requirements of Section N106.2 or N106.3.

Exception: Roof/ceiling assemblies or materials that have been tested or listed with a minimum STC rating of 40.

N106.2 Ceilings with unconditioned attic space above. Ceilings with unconditioned attic space above shall be insulated with a minimum of ½-inch gypsum drywall on the interior ceiling side covered with a minimum of 12 inches of blown-in fiberglass insulation.

N106.3 Ceilings without attic space above. Ceilings without attic space above shall be insulated with a minimum of 5⁄8-inch gypsum drywall on the interior side filled with a minimum of 9 inches of fiberglass batt insulation with a 1-inch air space between the roof sheathing and the fiberglass.

APPENDIX R

REUSE OF MATERIALS

SECTION R101 GENERAL

R101.1 Scope. The reuse of materials shall be allowed in accordance with the provisions of this section.

R101.2 Intent. This appendix is intended to encourage the reuse of materials when possible and divert construction debris from landfills. This appendix is not mandatory but specifies parameters for when materials may be considered for reuse where integrity of the materials under consideration has not been compromised.

R101.3 General notice. The user should be vigilant regarding lead, asbestos, radon, PCBs, and other potentially harmful substances that are no longer allowed in buildings. Buildings built before 1978 may have used lead paint. Asbestos may be found in the insulation, fireproofing, floors, walls, or roof. Newer buildings may have asbestos in the floors or roof. Any fluorescent light fixtures manufactured prior to 1979 may contain PCBs; new capacitors should be labeled: NO PCBs.

SECTION R102 DEFINITIONS

R102.1 General. The following terms, for the purposes of this appendix, shall have the meaning ascribed in Chapter 2:

GOOD CONDITION.

RECYCLING.

REUSED MATERIALS.

SECTION R103 ACCEPTABLE APPLICATIONS

R103.1 Acceptable applications. The reused materials are allowed as identified in Table R103.1.

TABLE R103.1
REUSED MATERIALS – ACCEPTABLE APPLICATIONS FOR USED MATERIALS

<u>CODE</u> <u>SECTION</u>	<u>ORIGINAL</u> <u>MATERIAL USE</u>	<u>PERMITTED</u> <u>REUSE APPLICATION</u>	<u>COMMENTS</u>	<u>EXCLUSIONS</u>
<u>CONCRETE ASPHALT</u>				
3112	Asphalt	Reuse for driveways and sidewalks or road base	-	1, 7

3112	Concrete	As fill or aggregate for concrete mix, garden borders, driveways (as gravel), road base	-	<u>1, 7</u>
3112	Pilings	See concrete	-	<u>3</u>
MASONRY AND STONE				
-	Brick and stone veneer	Horizontal surfaces on site and interior floors, nonstructural walls, and veneer	-	<u>3</u>
-	Pavers	Nonstructural paving or floors and veneer	-	<u>3</u>
-	Concrete blocks and products	Finishes, interior walls, low fences, and base for porous paving	Reused in original structural capacity.	<u>3</u>
-	Stone-sandstone, slate, granite, and marble	Finishes, roofing (slate)	-	<u>3</u>
2103.6, exception	Glass block	Original use	-	<u>5</u>
METALS				
-	Cold-formed metal framing—studs, joists, rafters, purlins and girts	Repetitive members in original capacity, structural if identifiable	Steel with mill test certificates may be reused in original capacity; steel design values for materials manufactured after 1910 can be found in Design Guide 15: <i>AISC Rehabilitation and Retrofit Guide</i> ; weldability for sections produced prior to the 1950s need testing.	<u>4</u>
-	Metal joists	If identifiable, can be used for structure		<u>4</u>
Chapter 17	Structural steel— columns, pillars, and posts	Reuse in structural capacity with special inspection		<u>4</u>
WOOD, AGRI-FIBER, AND PLASTIC MATERIALS				
-	Columns, pillars, and posts	Reuse in original capacity.	-	-
-	Dimensional lumber, 4-foot-long minimum unstamped (includes roughhewn)	Install as one dimension higher than required, or: (1) Floor plates; (2) Second top plates; (3) Fillers, fire-blocking, and nailers; and (4) Strut-bracing, bridging, and ledgers (if ledger is one dimension larger than what otherwise might be used	For species not easily recognized may need special inspection. ⁴	-
-	Dimensional lumber (stud capacity), with original stamp (includes roughhewn)	Reused in original capacity: (1) Studs (cripple, trim and jack), joists and rafters; or (2) Wind bracing	-	<u>8</u>
-	Glue-laminated beams, I-joists, laminated veneer lumber, parallel strand lumber and oriented strand lumber (unstamped)	Install as per dimensional lumber	-	-
-	Trusses	-	Trusses to be inspected by structural engineer as installed.	<u>4</u>
-	Utility poles (untreated)	-	-	<u>3</u>
-	Oriented strand board (OSB) and plywood	Reuse in original capacity	-	<u>8</u>
-	Plastic lumber	Reuse in original capacity	-	-
-	Masonite and chipboard	Reuse in original capacity	-	<u>8</u>
WINDOWS DOORS INSULATION SIDING AND ROOFING				

Chapter 7	Insulation– batt, gently used	Reuse in horizontal capacities only, such as attics or sound attenuation in cavities.	25% reduction in R-value to be assumed.	<u>2</u>
Chapter 7	Insulation– board, gently used	Reuse in original capacity.	Polyisocyanurate to be reduced by R-2 per board; extruded and/or expanded polystyrene to remain the same R-value and reused in the same orientation (horizontal or vertical).	<u>2</u>
-	Windows	Reuse in original capacity or as decor	-	<u>2</u>
-	Doors and door assemblies	Reuse in original capacity	-	<u>2, 5</u>
-	Glass sheet and plexiglass	Reuse in original capacity or as decor	-	<u>2</u>
-	Stained Glass	Reuse in original capacity	-	<u>2</u>
-	Siding–cement board, wood, vinyl, metal panels	Reuse in original capacity	-	<u>5</u>
-	Soffits–cement board, wood, perforated metal panels, aluminum panels	Reuse in original capacity	-	<u>5</u>
-	Roof tiles	Reuse in original capacity, or as fencing or ornamental decoration.	-	-
-	Metal roof panels	Reuse in original capacity	-	-
FINISHES				
Section 803	Acoustical ceiling tiles	Reuse in original capacity	-	<u>5</u>
Section 804	Carpet and carpet pad	Reuse in original capacity	-	-
Section 803	Drywall	Reuse in original capacity	-	-
Chapter 8	Flooring–wood	Reuse in original capacity	-	-
-	Cement board	Reuse in original capacity	-	-
-	Hinges and other hardware	Reuse in original capacity	-	<u>1, 5</u>
General Exclusions. <ol style="list-style-type: none"> <u>1. TAS – Texas Accessibility Standards.</u> <u>2. Must comply with the <i>Energy Conservation Code</i>.</u> <u>3. For structural reuse applications, review, and stamp of plans by an engineer.</u> <u>4. For structural reuse of material, the material and its new application must be inspected and certified by an engineer.</u> <u>5. Not allowed in fire assemblies, unless tested or marked for such use.</u> <u>6. Energy Policy Act (EPA) of 1995 (water flush/flow rates).</u> <u>7. In accordance with <i>jurisdiction</i> planning requirements, not permitted in driveway approach or sidewalks located in the right-of-way.</u> <u>8. Material should be stamped. For structural steel, the material shall be identifiable.</u> 				

Administrative Code Provisions for the *202014 National Electrical Code*



Adopted by Ord. No. 2021-1037¹

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¹. The City Secretary shall insert the number of the adopting ordinance.

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Chapter 1

TITLE AND GENERAL

SECTION 101—TITLE

These regulations shall be known as the *City of Houston Electrical Code*, ~~may be cited as such and will be referred to hereinafter referred to~~ as "this code," and also known as the *Electrical Code*. ~~This code shall be considered as a part of the *City of Houston Construction Code*.~~

The *City of Houston Construction Code* collectively includes this volume and certain other codes, pamphlets, specifications and documents that are adopted in or by reference through the adopting ordinance, City of Houston Ordinance No. 2021-1037⁴, which appears in the preamble of the *Building Code*.

All electrical licensing requirements shall be in accordance with (1) this code, and (2) the Texas Electrical Safety and Licensing Act (*Texas Occupations Code*, Chapter 1305) and the Administrative Rules of the Texas Department of Licensing and Regulation, 16 *Texas Administrative Code*, Chapter 73, whichever is more restrictive.

SECTION 102—APPLICATION TO EXISTING ~~ELECTRICAL~~ PREMISES WIRING (SYSTEMS) AND EQUIPMENT

102.1 Additions, Alterations or Repairs. Additions, alterations or repairs may be made to any ~~premises wiring electrical (system) and equipment without requiring the existing premises wiring electrical (system) and equipment to comply with all the requirements of this code, provided the additions, alterations or repairs conform to that required for a new~~ premises wiring (system) and equipment and provided further that no hazard to life, health or ~~safety property~~ will be created by the additions, alterations or repairs.

Minor additions, alterations and repairs to existing ~~premises wiring electrical (systems)~~ and equipment may be made in accordance with the law in effect at the time the original installation was made, when approved by the *building official*, if it is found that no hazard to life, health or ~~safety property~~ will be created by the additions, alterations or repairs.

102.2 Existing Installations. ~~Premises wiring Electrical (systems)~~ and equipment lawfully in existence at the time of the adoption of this code may have their use, maintenance and repair continued if the use, maintenance and repair is in accordance with the original design and no hazard to life, health or property has been created by the ~~premises wiring electrical (system) and equipment~~.

102.3 Changes in Building Occupancy. ~~Premises wiring Electrical (systems)~~ and equipment that are part of any building or structure undergoing a change in use or occupancy, as defined in the *Building Code*, shall comply with all requirements of this code that may be applicable to the new use or occupancy.

102.4 Maintenance. All ~~premises wiring electrical (systems)~~ and equipment, both existing and new, and all parts thereof, shall be maintained in proper operating condition in accordance with the original design and in a safe and hazard-free condition. All devices or safeguards that are required by this code shall be maintained in conformance with this code. The owner shall be responsible for the maintenance of the ~~premises wiring electrical (system)~~. To determine compliance with this subsection, the *building official* may cause any ~~electrical premises wiring~~

⁴ The City Secretary shall insert the number of the adopting ordinance.

(systems) to be reinspected whenever there is reason to believe that the system is not being maintained in accordance with this section.

102.5 Moved Building. Premises wiring Electrical (systems) and equipment that are a part of buildings or structures moved into or within the city shall comply with the provisions of this code for new installations.

SECTION 103—DEFINITIONS

For the purpose of this code, certain terms, phrases, words and their derivatives shall be construed as specified in this section. Where terms are not defined, they shall have their ordinarily accepted meanings within the context in which they are used. Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular. Words used in the singular include the plural and the plural the singular. Words used in the masculine gender include the feminine and the feminine the masculine. Where terms are not defined in this code such terms shall have the meanings ascribed in the *Construction Code* and standards of the National Fire Protection Association.

APPRENTICE ELECTRICIAN is a person undertaking "electrical work," as defined in this code, under the direct, personal supervision and control of either a licensed master electrician, line master electrician, sign master electrician, journeyman electrician, journeyman lineman, sign journeyman electrician, residential journeyman electrician or maintenance electrician.

APPROVED, as to materials, equipment and method of construction, refers to approval by the *building official* as the result of investigation and tests conducted by the *building official*, or by reason of accepted principles or tests by recognized authorities or technical or scientific organizations.

APPROVED AGENCY is an established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when the agency has been approved by the *building official* after he or she finds that the agency provides reliable testing or inspection services.

~~**BUILDING** is a structure that stands alone or is cut off from adjoining structures by fire walls or one-hour fire barriers with all openings therein protected by approved fire-resistance rated assemblies.~~

BUILDING CODE is the *City of Houston Building Code*, as adopted and amended by this jurisdiction.

BUILDING OFFICIAL is the ~~jurisdiction's~~ Director of Houston Public Works, ~~or a~~ the duly authorized representative designated by the director to act as the chief construction code enforcement official of the jurisdiction; also known as *chief building official*. The term also includes the Houston Airport Systems building official who may be designated by the building official to perform *Construction Code* permitting and enforcement activities on Houston Airport Systems premises.

CITY is the City of Houston, ~~being~~ the jurisdiction that has adopted this code.

CITY CODE is the *Code of Ordinances, City of Houston, Texas*.

CONSTRUCTION CODE. Has the meaning ascribed in Section 1-2 of the *City Code*.

CONTRACTOR is a person, firm or corporation engaged in the business of performing electrical maintenance work, electrical work, outside electrical work, residential electrical work or sign electrical work.

ELECTRICAL DIVISION is the Electrical Division of the city's Houston Public Works and Engineering Department.

ELECTRICAL DIVISION MANAGER is the person designated by the *Building Official* to be the Electrical Division Manager.

ELECTRICAL MAINTENANCE WORK is the repair of existing damaged premises wiring (systems) and/or replacement of existing fixed motors, transformers, devices or fixed appliances of the same type and rating in the same location. The term does not include the installation of additional electrical work, electrical equipment or electrical apparatus.

ELECTRICAL WORK is the new or replacement installation ~~installing, maintaining, alteration~~ ~~altering~~, repairing or erecting of any premises wiring (systems), wiring apparatus, devices, appliances, fixtures or equipment under the terms and provisions of this code, except poles and guy anchors installed by a telephone, telegraph, signal and/or electric utility company as a part of its distribution system.

EXISTING PERMIT is a permit that is not finalized.

~~_____ **FIREWALL**, for the purposes of this code, shall mean a minimum one hour fire barrier as defined in the *Building Code*.~~

JOURNEYMAN ELECTRICIAN is a person undertaking "electrical work," as defined in this code, under the supervision, direction and control of a licensed master electrician.

JOURNEYMAN LINEMAN is a person undertaking "outside electrical work," as defined in this code, under the supervision, direction and control of a licensed master or line master electrician.

JURISDICTION is the governmental unit that has adopted this code under due legislative authority.

LINE MASTER ELECTRICIAN is a person who is the holder of a line master electrician license issued under Chapter 4 of this code.

LINE MASTER ELECTRICIAN OF RECORD is a line master electrician who is engaged in a master-contractor relationship, as provided by Chapter 4 of this code.

LISTED and **LISTING** are terms referring to equipment and materials that are shown in a list published by an approved agency, which listing states that the equipment complies with recognized safety standards.

MAINTENANCE ELECTRICIAN is a person who is the holder of a maintenance electrician license issued under Chapter 4 of this code.

MASTER ELECTRICIAN is a person who is the holder of a master electrician license.

MASTER ELECTRICIAN OF RECORD is a master electrician who is engaged in a master-contractor relationship, as provided by Chapter 4 of this code.

MULTIPLE OCCUPANCY BUILDING is a building that has more than one tenant regardless of whether the tenants' uses are of the same or different occupancy classifications or use groups as classified by the *Building Code*.

OCCUPANCY is the purpose for which a building, or part thereof, is used or intended to be used.

OUTSIDE ELECTRICAL WORK is the assembly, maintenance, installation and erection of all electrical equipment and appurtenances that are part of an outside distribution system generally located outside of any building. Work performed under this term shall include, but not be limited to, the installation, repair or maintenance of substations, street lighting, pole lines, underground duct banks, electrical decorations, traffic signals and parking lot lighting.

PERSON is an individual, partnership, corporation or other legal entity.

POOL is an outdoor or indoor structure intended for swimming or recreational bathing, including an ~~in-ground~~ inground structure, aboveground structure, hot tub, spa, portable spa, or non-portable wading pool.

POOL-RELATED ELECTRICAL DEVICE is equipment for a pool that:

- (a) Is installed as a unit;
- (b) Is directly connected to an electrical circuit; and
- (c) Performs a specific function.

POOL-RELATED ELECTRICAL MAINTENANCE is electrical work that is limited to the connection or disconnection of a pool-related electrical device to an existing electrical circuit other than by inserting or removing a plug from an electrical outlet.

POTENTIAL IMMINENT HAZARD is a condition or a combination of several different conditions regulated by the *City of Houston Construction Code*, within or on the property, that are more likely than not to pose a hazard to the occupants or integrity of the structure, as determined by the *building official*.

RESIDENTIAL APPLIANCE is equipment, including a pool-related electrical device, that:

- (a) iIs installed as a unit in a single family or multifamily dwelling that does not exceed four stories;
- (b) iIs directly connected to an electrical circuit; and
- (c) pPerforms a specific function.

RESIDENTIAL APPLIANCE INSTALLATION is electrical work that is limited to the connection or disconnection of a residential appliance, including a pool-related electrical device, to an existing electrical circuit other than by inserting or removing a plug from an electrical outlet.

RESIDENTIAL APPLIANCE INSTALLATION CONTRACTING is the business of residential appliance installation, including pool-related electrical maintenance.

RESIDENTIAL APPLIANCE INSTALLATION CONTRACTOR is a business entity, other than an electrical contractor or electrical sign contractor, that is engaged in residential appliance installation contracting, including pool-related electrical maintenance.

RESIDENTIAL APPLIANCE INSTALLER is a person, other than a licensed electrician, who is licensed to perform residential appliance installation, including pool-related electrical maintenance.

RESIDENTIAL ELECTRICAL WORK is the installation, maintenance, alteration, repair or erection of any wiring apparatus, devices, appliances, fixtures or equipment that by ordinance can be wired with nonmetallic sheathed cable. This work will be limited to single family or multifamily dwellings (and their accessory structures) of wood frame construction not exceeding four stories.

RESIDENTIAL WIREMAN (RESIDENTIAL JOURNEYMAN ELECTRICIAN) is a person undertaking "residential electrical work" as defined in this code, under the supervision, direction and control of a licensed master electrician.

SERVICE CABLE TAP BOX is an enclosure designed with busbars for the purpose of terminating service conductors from the electric utility point of supply and terminating service conductors to individual tenant services.

SIGN ELECTRICAL WORK is the manufacture or installation, or both, of electric signs, conductors and equipment for signs, outline lighting, and inside lighting with high-voltage gas tubes as defined in the *National Electrical Code*.

SIGN JOURNEYMAN ELECTRICIAN is a person undertaking "sign electrical work," as defined in this code, under the supervision, direction and control of a licensed master or sign master electrician.

SIGN MASTER ELECTRICIAN is a person who is the holder of a sign master electrician license issued under Chapter 4 of this code.

SIGN MASTER ELECTRICIAN OF RECORD is a sign master electrician who is engaged in a master-contractor relationship, as provided by Chapter 4 of this code.

STATE ELECTRICAL LICENSE is a license issued or recognized by the Texas Electrical Safety and Licensing Act (*Texas Occupations Code*, Chapter 1305).

SECTION 104—CONFLICTING PROVISIONS

Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall prevail. Where, in any specific instance case, provisions of this code, including adopted appendices, specify different sections of the City Code, the Building Code, the City of Houston Mechanical Code, the City of Houston Plumbing Code, the Residential Code for One- and Two-Family Dwellings of the City of Houston, the City of Houston Commercial Energy Conservation Code, the City of Houston Residential Energy Conservation Code, the City of Houston Fire Code and this code specify different materials, different methods of construction, or other requirements that differ from those provided in the City Code or other volumes of the Construction Code, including adopted appendices, other than the Fire Code and its adopted appendices and standards, the most restrictive shall prevail govern. Where, in any specific instance, provisions of this code, including adopted appendices, specify different materials, different methods of construction, or other requirements that differ from those provided in the Fire Code, including its adopted appendices and standards, and the building official and the fire marshal are unable to mutually reconcile the requirements by issuing a written interpretation, then either of them may refer the matter to the General Appeals Board created under the Building Code, which shall conduct a review of the matter and issue a written code interpretation based upon the apparent intent of the codes involved. Notwithstanding any other provision, interpretations that are issued by the General Appeals Board shall not be subject to further appeal. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

In any case where the *City of Houston Electrical Code* differs from the *National Electrical Code*, the *City of Houston Electrical Code* shall apply prevail.

SECTION 105—ALTERNATE MATERIALS AND METHODS OF CONSTRUCTION

The provisions of this code are not intended to prevent the use of any material or method of construction not specifically prescribed by this code, provided an alternate has been approved and its use authorized by the *building official*. The *building official* shall approve an alternate, provided he or she finds that the proposed design is satisfactory and complies with the provisions of this code and that the materials, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in suitability, strength, effectiveness, fire resistance, durability and safety.

The *building official* shall require that sufficient evidence or proof be submitted to substantiate any claims regarding the use of alternates. The details of any action granting approval of an alternate shall be recorded and entered in the files of the *building official*.

SECTION 106—MODIFICATIONS

Whenever there are practical difficulties involved in carrying out the provisions of this code, the *building official* may grant modifications for individual cases upon determining that: (1) a special individual reason makes the strict letter of this code technically impractical; (2) the modification is in conformity with the intent and purpose of this code; and (3) the modification does not lessen health, life safety and fire safety requirements. The details of actions granting modifications shall be recorded and entered in the files of the *building official*.

SECTION 107—TESTS

Whenever there is insufficient evidence of compliance with any of the provisions of this code or evidence that materials or construction do not conform to the requirements of this code, the *building official* may require tests as evidence of compliance to be made at no expense to the city.

Test methods shall be as specified by this code or by other recognized test standards. In the absence of recognized and accepted test methods for the proposed alternate, the *building official* shall determine test procedures that are reasonably reliable and designate the use thereof.

All tests shall be made by an approved agency. Reports of tests shall be retained by the *building official* for the period required for the retention of public records.

SECTION 108—HEARING PROCEDURES FOR ADMINISTRATIVE APPEALS

108.1 Hearing Notices. Unless otherwise specifically provided, ~~Whenever~~ notice is to be given to any person concerning the right to a hearing, the notice may be given by personal hand delivery or by certified mail, return receipt requested.

If the notice relates to work being performed under a permit issued under this code, then the notice shall be given to the master electrician, line master electrician or sign master electrician who obtained the permit, as well as the contractor and the owner of the building.

If notice is being given to a building owner or to a tenant therein, and the *building official* is unable to determine the name or address of the person after checking the building and the applicable records of Houston Public Works, the records of the County Appraisal District, and the records of the electrical utility company, the gas utility company, and the water utility provider, notice shall be mailed to the billing addresses of the building as shown on the records of the electrical utility company and shall be posted on or in view of each entrance to the building.

Additionally, if any notice is mailed to a building owner or a building tenant and is returned without delivery, notice shall be effective if posted on or in view of each entrance to the building.

108.2 Hearings. Except where otherwise specifically provided, all hearings held pursuant to this code shall be conducted by the Director of Houston Public Works or a representative, who shall hereinafter be referred to as the hearing official. The director shall not designate any person to be a hearing official under this code who has taken any part in the investigation of the matter that is the subject of the hearing, nor any person who directly supervised the investigation. The hearing official shall consider only the evidence presented at the hearing in rendering a decision. The decision of the hearing official shall be final, shall be set forth in writing, and shall be served on each party in the same manner as a notice of a right to a hearing.

SECTION 109—PENALTIES

Where no specific penalty is otherwise provided in this code, the violation of any provision of this code shall constitute a misdemeanor punishable upon conviction by a fine of not less than \$500.00 nor more than \$2,000.00. Each day that any violation continues shall constitute and be punishable as a separate offense. Where any such conduct constitutes a violation of state penal law, the offense shall be punishable as provided in the applicable state law. In prosecutions under this code, the various provisions hereof that are designated as an “exception” or “exceptions” shall not be treated as exceptions within the meaning of Section 2.02 of the Texas Penal Code, and, instead, they shall constitute defenses to prosecution within the meaning of Section 2.03 of the Texas Penal Code.

~~Any person who violates or causes a violation of any provision of this code shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not more than \$2,000.00 nor less than \$400.00 unless otherwise specified herein; provided, however, if a person is convicted of any offense under this code that is also a violation of the penal laws of the State of Texas, the person shall be subject to the penalties set out in the penal laws of Texas for the offense. Each day that any violation continues shall constitute and be punishable as a separate offense.~~

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Chapter 2

ORGANIZATION AND ENFORCEMENT

SECTION 201—POWERS AND DUTIES

201.1 General. The *building official* is hereby authorized and directed to enforce all provisions of this code.

201.2 Deputies. In accordance with procedures prescribed by law, the *building official* may appoint technical officers and inspectors and such other employees as shall be authorized from time to time.

201.3 Right of Entry. When it is necessary to make an inspection to enforce any of the provisions of this code, or ~~where whenever~~ the *building official* has reasonable cause to believe that there exists in a structure building or ~~upon a~~ premises a condition that is contrary to or in violation of this code that makes the structure building or premises unsafe, dangerous or hazardous, the *building official* ~~is authorized to may enter the structure building or premises at all reasonable times to inspect the same or to perform any duty imposed on the building official by this code, provided that if the such structure building or premises is be occupied, the that building official shall first present proper credentials be presented to the occupant and entry requested entry. If such structure or premises is unoccupied, the building official shall first make a reasonable effort to locate the owner or other person having charge or control of the structure or premises and request entry.~~ If entry is refused, the *building official* or an authorized representative shall have recourse to ~~the every remedy remedies~~ provided by law to secure entry.

When, due to emergency, immediate entry is necessary to make an inspection to protect life or property, or when the *building official* ~~has shall have first~~ obtained a proper inspection warrant or other remedy provided by law to secure entry, no owner or occupant or any other person having charge, care or control of any building or premises shall fail or neglect, after proper request is made as herein provided, to promptly permit entry therein by the *building official* for the purpose of inspection and examination pursuant to this code.

201.4 Stop Work Order. Whenever any work is being done contrary to the provisions of this code, the *building official* may order the work stopped by notice in writing served on any persons engaged in the doing or causing the work to be done, and the persons shall forthwith stop the work until authorized by the *building official* to proceed with the work. At the time a stop work order is issued, the person doing the work and the permit holder shall be given notice of a right to a hearing pursuant to Section 108 of this code. Upon request, a hearing shall be held within three business days unless the permit holder or the person doing the work requests an extension of time.

A stop work order shall remain in effect pending any hearing that has been requested, unless the stop work order is withdrawn by the *building official*.

201.5 Authority to Disconnect Utilities in Emergencies. The *building official* shall have the authority to have the utility company disconnect any electric power or energy service supplied to a building or any premises wiring electrical (system) or equipment regulated by this code in case of emergency when necessary to eliminate potential imminent hazard to life, health or property. The *building official* shall, whenever possible, notify the serving utility and the owner and occupant of the building (or user of the ~~electrical system~~ premises wiring (system) or equipment if the owner is not located in a building) of the decision prior to the disconnection and shall notify those persons in writing of the disconnection immediately thereafter. The notice shall also inform the owner and occupant of the building (or the user if the premises wiring electrical (system) or equipment is not

within a building) of a right to a hearing pursuant to Section 108 of this code. Upon request, a hearing shall be conducted within three business days unless the owner requests an extension of time.

201.6 Authority to Condemn Premises Wiring Electrical (System) and Equipment.

Whenever the *building official* ascertains that any ~~electrical system~~ premises wiring (system) or equipment regulated by this code has become hazardous to life, health or property, the *building official* may order in writing that the ~~electrical~~ premises wiring (system) or equipment be either removed or restored to a safe condition, as appropriate. The written notice itself shall fix a time limit for compliance with the order and shall inform the owner and the occupant of the right to a hearing pursuant to Section 108 of this code. No person shall use or maintain any defective ~~electrical~~ premises wiring (system) or equipment after receiving a notice.

When equipment or installation is to be disconnected, a written notice of the disconnection and causes therefor shall be given within 24 hours to the serving utility and to the owner and occupant of the building, structure or premises. The notice shall inform the owner and occupant of the right to a hearing pursuant to Section 108 of this code. Upon request, a hearing shall be conducted within three business days unless the owner requests an extension.

When any ~~electrical system~~ premises wiring (system) or equipment is maintained in violation of this code, and in violation of a notice issued pursuant to this section, the *building official* shall institute any appropriate action to prevent, restrain, correct or abate the violation.

201.7 Connection after Order to Disconnect. No person shall either make connections from any energy source or power supply or supply power to any ~~electrical~~ premises wiring (system) or equipment that has been disconnected or ordered to be discontinued by the *building official*, until the *building official* authorizes the reconnection and use of the ~~electrical~~ premises wiring (system) or equipment.

201.8 Liability. Except as otherwise provided by law, the *building official* shall not personally be liable in damages for any act or omission arising out of any official action taken to implement and enforce the provisions of this code. Additionally, except as otherwise provided by law, the *building official* shall not personally be liable in damages for any action or omission taken in the course and scope of employment. Where and to the extent consistent with the provisions of Chapter 2, Article X, of the *City Code*, the city shall provide legal representation and indemnification for any suit brought against the *building official* or other employees because of acts or omissions performed in the enforcement of this code.

201.9 Cooperation of Other Officials and Officers. The *building official* may request, and shall receive, so far as is required in the discharge of their duties, the assistance and cooperation of other officials of the city.

SECTION 202—UNSAFE ~~ELECTRICAL SYSTEMS~~ PREMISES WIRING (SYSTEMS) OR EQUIPMENT

All ~~electrical~~ premises wiring (systems) or equipment regulated by this code that are unsafe, or that constitute a fire hazard, have sustained disaster damage or are otherwise dangerous to human life are, for the purpose of this section, unsafe. Any use of ~~electrical~~ premises wiring (systems) or equipment regulated by this code constituting a hazard to safety, health or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster damage or abandonment is, for the purpose of this section, an unsafe use.

All unsafe ~~electrical~~ premises wiring (systems) or equipment shall be abated by repair, rehabilitation, demolition or removal in accordance with the procedures set forth by law for the

abatement of dangerous buildings. As an alternative, the *building official* or another employee or official of the city as designated by the governing body may institute any other appropriate action to prevent, restrain, correct or abate the violation.

SECTION 203—ELECTRICAL BOARD

203.1 Electrical Board Composition. There is hereby created an Electrical Board consisting of 11 members. Position Nos. 1 through 10 shall be filled by persons appointed by the mayor and confirmed by the City Council. Each of the 11 positions of the board shall be numbered. The mayor shall designate a member to be chairman.

Position Nos. 1, 2, 3 and 4 shall be filled by duly licensed master electricians.

Position No. 5 shall be filled by an electrical engineer in the employ of an electric utility company operating under a city franchise.

Position Nos. 6 and 7 shall be filled by consulting or practicing engineers ~~who are directly connected with~~ in the electrical construction industry ~~and who~~ are licensed professional engineers of the State of Texas.

Position Nos. 8, 9 and 10 shall be filled by representatives from the city at large.

Position No. 11 shall be filled by the Electrical Division Manager, who shall serve as secretary of the Electrical Board. The Electrical Division Manager, from time to time, may designate, in writing, a member of the city's Electrical Inspection Section to act as his or her duly authorized representative. The representative shall be entitled to all rights and privileges of the position. A copy of the designation, specifying the dates the person shall act as representative of the Electrical Division Manager shall be filed with the minutes of the board ~~Board~~.

203.2 Eligibility of Board Members. A person who meets the qualifications for the positions set forth in Section 203.1 of this code shall not be disqualified from serving on the board ~~Board~~ or from performing any duties of board membership because the person is employed by the IBEW, IEC, NECA or any other labor or trade organization that provides or sponsors electrician training. The provisions of this section shall be regarded as an exception to Section 18-3 of the *City Code*.

203.3 Compensation and Terms. Each member of the board ~~Board~~ shall receive \$50 per diem for services while attending meetings of the board ~~Board~~. A member of the board who is employed by the city shall be paid only for those meetings he or she attends that are neither held during, nor continue beyond, regular working hours.

The terms of office for appointees to Position Nos. 1, 3, 5, 7 and 9 shall expire on the 2nd day of January of odd-numbered years, and the terms of office for appointees to Position Nos. 2, 4, 6, 8 and 10 shall expire on the 2nd day of January of even-numbered years. However, each member shall continue in office until a successor has been appointed and qualified. The adoption of this code shall not terminate the term of office of any person currently serving on the board ~~Board~~. Any person who is currently serving on the board ~~Board~~ shall continue to serve in the position for which he or she was appointed and confirmed until a successor is appointed and qualified.

203.4 Methods of Transacting Business. Half of the members then serving on the board ~~Board~~ present at any meeting shall constitute a quorum for the transaction of any business of the board ~~Board~~. A majority vote of the members present at any meeting at which a quorum is present shall prevail.

203.5 Legal Counsel. Any ~~board-Board~~ meeting and hearing shall be attended by an attorney from the city's legal staff when requested by the ~~board-Board~~. The attorney's sole duty shall be to advise the ~~board-Board~~ members of legal matters that may arise.

203.6 Duties of the Board. The duties and responsibilities of the ~~board-Board~~ shall include the following:

1. Hear all cases involving revocation of a license or registration.
2. Conduct those hearings and appeals that are provided in this code to be conducted by the Electrical Board.
3. Hear appeals from decisions of the *building official* concerning interpretation of this code and the use of alternate materials and wiring methods; provided, however, the ~~board-Board~~ shall not have jurisdiction to hear any matter that is the subject of any case pending before the municipal courts.

203.7 Appeals to Electrical Board. Any interested person dissatisfied with a decision of the *building official* concerning interpretations of this code or the use of alternate materials and wiring methods shall have the right to appeal to the ~~board-Board~~ pursuant to the following procedures. Petitions for hearings before the ~~board-Board~~ shall be in writing and filed with the secretary of the ~~board-Board~~. A hearing on the matter shall be held by the ~~board-Board~~ within 30 calendar days of the date the petition was filed. The ~~board-Board~~ shall affirm, modify or reverse the action or decision of the *building official* and shall render all decisions and findings in writing to the *building official* who shall cause a duplicate copy to be mailed to the appellant.

Any interested person aggrieved and affected by a decision of the ~~board-Board~~ may appeal to the City Council by delivering a written notice of appeal to the City Secretary within 10 calendar days from the date of deposit of the decision of the ~~board-Board~~ in the mail. Appeals are subject to and shall be made as provided by City Council Rule 12. See Section 2-2 of the *City Code*.

SECTION 204—FAILURE TO CORRECT WORK

If any electrical contractor, master electrician, line master electrician or sign master electrician fails to correct any defect, error or deficiency in any of his or her work installed under the authority of an electrical permit within 10 calendar days after written notification thereof, the *building official* may serve the master electrician of record and contractor with notice that a hearing will be held by the Electrical Board at which time the *building official* will seek either the suspension or revocation of the contractor's and ~~master's~~ master electrician of record's licenses and/or registrations. In the notice, the *building official* shall specify the grounds on which he or she will rely in seeking the suspension or revocation of the licenses and/or registrations. This section shall be cumulative of all other remedies provided for under the laws of the State of Texas and ordinances of the city and may be applied in addition to prosecution for any applicable crimes committed.

SECTION 205—TAMPERING

It shall be unlawful for any person to bridge, tamper with or change from its original installation, any fuse of any type installed in any panelboard, main switch or switchboard, or to alter or change any circuit breaker so that the fuse or circuit breaker will not function properly. It is a defense to prosecution under this section that the work was done upon previous approval of the *building official*.

SECTION 206—DISPLAY OF LICENSE

A contractor shall display the contractor's business name and the number of the license issued by the state or the city on each vehicle owned or operated by the contractor.

The information required to be displayed must be:

1. Printed in letters and numbers that are at least ~~two~~2 inches high and 3/8 inches in width and in a color that contrasts with the color of the background surface; and
2. Permanently affixed in conspicuous places on both sides of the vehicle.

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Chapter 3

PERMITS AND INSPECTIONS

SECTION 301—PERMITS

301.1 Permits Required. It shall be unlawful for any person to install, alter, repair, replace or remodel any ~~electrical~~ premises wiring (system) or equipment regulated by this code, except as specified in Section 301.2 of this code, or cause the same to be done, unless the person has an active ~~current~~ permit for the work or is working under the supervision of a person who has a permit.

301.2 Exempt Work. Exemption from the permit requirements of this code shall not be deemed to grant authorization for any work to be done in violation of the provisions of this code or any other laws or ordinances.

An electrical permit shall not be required for the following:

1. Motors, office furnishings (as defined by NFPA 70, Article 605) or other appliances energized by means of a cord or cable having an attachment plug end to be connected to an approved receptacle when the cord or cable is permitted by this code. **Note:** This exception does not apply to manufactured wiring systems as defined in NFPA 70, Article 604.
2. Repair or replacement of fixed motors, transformers or fixed approved appliances of the same type and rating in the same location.
3. Temporary decorative lighting, which shall not be in place more than 90 calendar days.
4. Repair or replacement of current-carrying parts of a switch, contactor or control device.
5. Reinstallation of attachment plug receptacles, but not the outlets therefor.
6. Repair or replacement of any overcurrent device of the same capacity in the same location.
7. Installation of temporary wiring, apparatus, devices, appliances or equipment used by a recognized electrical training school or college for the purpose of training, which installation shall not be in place more than 90 calendar days.
8. Electrical wiring, devices, appliances, apparatus or equipment operating at less than 50 volts and not capable of supplying or controlling more than 50 watts of power.
9. Sound equipment, private or public telephone system, thermostat wiring or burglar alarm system, provided, however, a permit shall be required to wire any such system to the source of electricity.
10. Installation and maintenance of railway crossing signal devices, when performed ~~by due authority of~~ the railroad in accordance with the standards of the American Railroad Association, and in collaboration with and with the approval of the Director of Houston Public Works.
11. The installation, maintenance or alteration of premises ~~electrical~~ wiring, apparatus, devices, appliances or equipment to be installed by an electric utility company for its own use in the generation, transmission, distribution, sale or utilization of

electrical energy. However, no electric utility company shall do any wiring on a customer's premises other than wiring that is a part of the company's distribution system, which shall be construed to include metering equipment, wherever located, and transformer vaults in which the company's transformers are located; nor shall any of its employees do any work other than that done for said company as provided for herein by virtue of this exception.

12. Erection, assembly, installation, repair, maintenance or servicing of elevator equipment, X-ray equipment, proton therapy equipment, and medical electronic equipment, other than for the power wiring connection of the first component, provided that the components of the equipment can be rendered safe from fire and shock hazards during operation by disconnection from electrical power sources.
13. Removal of premises electrical wiring.

301.3 Franchised Work. Except as otherwise provided by law, no person or electric utility company that does not operate under a franchise granted by the city shall have the right to install any electrical conduit, wires, ducts, poles or equipment of any character for the transmission, distribution or utilization of electric energy, or for the operation of signals or the transmission of data intelligence—on, over or under the streets in the city, without first obtaining from the City Council a franchise right or grant for the particular installation so desired to be made, and any installation so made under a franchise or grant shall be in strict conformity with all rules, regulations and ordinances of the city pertaining thereto. Compliance with this provision shall not be construed to excuse compliance with any other provision of the ordinances of the city.

301.4 Annual Maintenance Permit. Upon making written application and payment of all applicable fees, a person having ownership or control over a building property may obtain an annual maintenance permit for the keeping in safe repair of any and all electrical maintenance work as defined by this code on existing premises wiring (systems), electrical installations, apparatus and equipment in the building and on the real property on which the building is located if the applicant employs a person as a full-time employee who will actually perform the electrical maintenance work. A "full-time employee" shall mean an employee who works for the maintenance permit holder at least 36 hours per week. A permit for maintenance electrical work shall be valid for only one premises.

The fee for an annual maintenance permit specified in the city fee schedule ~~and~~ shall be paid to the *building official*. An annual maintenance permit shall expire on September 30th of each year.

301.4.1 Maintenance Records. Each time that an electrical maintenance employee working under an annual maintenance permit performs electrical maintenance work, the employee shall make a record of the work. The records shall be maintained in a location agreed upon by the owner and the *building official* and made available upon request for inspection and copying by the *building official* and must be held on file for at least two years. These records shall contain the following information:

1. Name and address where the work is performed.
2. Name of owner.
3. Date the work is performed.
4. General nature of the work performed.
5. Name of employee performing the work.

301.5 Permits Issued to Licensed Contractor. No permit shall be issued under any master electrician license or registration unless the master electrician ~~is in compliance~~ complies with the requirements of Section 403 of this code or is employed by an electrical contractor who ~~is in compliance~~ complies with that section.

SECTION 302—ELECTRICAL PERMITS

302.1 Application. Only a licensed and registered electrical contractor shall obtain an electrical permit. To obtain an electrical permit, the applicant shall first file an application on a form furnished by the ~~Building Inspection Division~~ Houston Public Works, Electrical Inspections Section for that purpose. Each application shall:

1. Identify and describe the work to be covered by the permit for which the application is made.
2. Describe the land on which the proposed work is to be done by the legal description, street address or similar description that will readily identify and definitely locate the proposed building or work.
3. Indicate the use or occupancy for which the proposed work is intended.
4. Be accompanied by plans, diagrams, computations and other data as required in Section 302.2 of this code.
5. Be signed or authorized electronically by the properly licensed master electrician of record, line master electrician of record or sign master electrician of record, as applicable, who is registered with the city.
6. Give such other data and information as may be required by the *building official*.
7. Identify the name of the electrical contractor who has contracted for the work.

A master electrician may apply for a permit for any electrical work. A line master electrician may apply only for a permit relating to outside electrical work. A sign master electrician may apply only for a permit relating to sign electrical work.

302.1.1 Time limitation of application. An application for which no permit is issued within 180 days following the date of application shall become inactive, and plans and other data submitted for review thereafter shall be returned to the applicant or destroyed by the building official. The building official is authorized to grant one or more extensions of time for additional periods not to exceed 180 days each, for a maximum of two years from the date of the original application, upon written request and justifiable cause demonstrated by the applicant. If an application for permit does not result in a permit within two years after the date of original application, the permit application shall expire. In order to renew action on an application after expiration, the applicant shall submit a new permit application and plans and shall pay a new plan review fee.

302.2 Plans and Specifications. Plans, calculations, diagrams and other data shall be submitted in two or more sets with each application for a permit. The *building official* may require all plans, computations and specifications to be prepared by a master electrician of record and/or prepared and sealed by a professional engineer licensed in the State of Texas in compliance with The Texas Engineering Practice Act (*Texas Occupations Code*, Chapter 1001).

EXCEPTION: *The building official may waive the submission of plans, calculations, etc., if he determines that the nature of the work is such that review of plans is not necessary to ~~obtain compliance~~ comply with this code.*

302.3 Information on Plans. Plans shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations.

SECTION 303—PERMIT ISSUANCE

303.1 Issuance. The application, plans and specifications and other data filed by an applicant for a permit shall be reviewed by the *building official*. The plans and specifications may be reviewed by other departments of the city to verify compliance with any applicable laws under their jurisdiction. If the *building official* finds that the work described in an application for a permit and the plans, specifications and other data filed therewith conform to the requirements of this code and other pertinent laws and ordinances, and that all applicable fees have been paid, the *building official* shall issue a permit therefor to the owner or owner's authorized agent ~~applicant~~.

When the *building official* issues a permit where plans and specifications are required, the *building official* shall endorse in writing or stamp the plans and specifications "APPROVED." Approved plans and specifications shall not be changed, modified or altered without authorization from the *building official*, and all work shall be done in accordance with the approved plans and specifications.

The *building official* may issue a permit(s) for the construction of part of ~~an electrical system~~ premises wiring (systems) and equipment before the entire plans and specifications for the whole system have been submitted or approved, provided adequate information and detailed statements have been filed complying with all pertinent requirements of this code. The holder of the permit shall proceed at his or her own risk without assurance that the permit for the entire building, structure or building service will be granted.

303.2 Retention of Plans. One set of approved plans and specifications shall be returned to the applicant and shall be kept on the site of the building or work at all times during which the work authorized by the permit is in progress. One set of approved plans, specifications and computations shall be retained by the *building official* until final approval of the work.

303.3 Validity of Permit. The issuance or granting of a permit or approval of plans and specifications shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other applicable laws, or ordinances of the jurisdiction. ~~No Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction~~ law shall not be valid.

The issuance of a permit based on construction documents, ~~plans~~, specifications, and other data shall not prevent the *building official* from thereafter requiring the correction of errors in the construction documents ~~plans~~, specifications and other data, or from preventing construction, occupancy or use of a structure ~~building operations being carried on thereunder~~ when in violation of this code or of any other applicable law.

A permit and all its privileges are issued to the property owner of the property for which the permit is issued, regardless of who submits the application or pays the fees. Where a Texas license is required to perform specific work, a permit shall be valid only for work performed under the licensed master electrician, sign master electrician or line master electrician named on the application.

A name change on the existing permit must be obtained if the licensed master electrician, sign master electrician or line master electrician listed on the existing permit is no longer responsible for the work performed. Provided that a refund has not been issued, the property owner has not changed, and written authority to amend the permit to designate a different master electrician, sign master electrician or line master electrician has been provided by the property owner to the building official, the building official shall issue an amended permit. A name change fee and an administrative fee shall be charged as provided in Section 118.1 of the *Building Code* and the city fee schedule.

In the case of the death or dissolution of the original property owner or master electrician, sign master electrician or line master electrician, pursuant to a timely name change request submitted within 45 calendar days after such death or dissolution, the permit will be transferred to the new property owner or amended to designate the new master electrician, sign master electrician or line master electrician at no fee except for the administrative fee established in Section 118.1.1 of the *Building Code* and the city fee schedule. Failure to apply for a name change within the requisite 45 calendar days shall subject to the applicable permit fees established in Section 118 of the *Building Code* and the city fee schedule based on the on the scope of work for remaining construction and uninspected work.

303.4 Expiration. Every permit issued shall become inactive on the 180th day after its issuance unless the work authorized by such permit has commenced and been inspected by a city inspector within 180 days after its issuance, or if the work authorized on the site by such permit is suspended or abandoned for a period of 180 days after the date the work was commenced. The building official is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.

For purposes of this subsection, the determination of whether work has commenced under a permit or whether work has been suspended or abandoned under a permit shall be based upon whether the permit holder requests an inspection of the work performed under the permit by the *building official*. If work is not commenced under a permit within two years after the date of issuance or is abandoned at any time for a period of two years, the permit shall expire.

In order to recommence work under an expired permit, the permit holder shall pay the full permit fee applicable and submit plans that comply with this code for the previously uninspected portion of the work.

EXCEPTION: *The building official may, upon request, perform a final inspection of work for which the permit has expired or reactivate a permit for the purpose of issuing a certificate of occupancy or a certificate of compliance.*

303.4.1 Extensions. The building official is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.

303.5 Validity. A permit shall be valid only for work done under the master electrician of record, line master electrician of record or sign master electrician of record who signed the application. A new permit must be obtained if the person who signed the application ceases to have a contractor-master relationship as stated in Section 403.5 and 403.6 of this code. The cost of the new permit shall be charged at no fee except for the administrative fee as established for this provision in the city fee schedule. ~~Applicants who fail to re-permit any applicable work within the timeframes established by this code shall be subject to full permit fees in the amount stated in the City fee schedule.~~

303.6 Suspension or Revocation. ~~The building official may, in writing, is authorized to~~ suspend or revoke a permit and may revoke approval of any plans issued under the provisions of this code

whenever the permit is issued in error or on the basis of incorrect, ~~inaccurate, or incomplete~~ information, ~~supplied,~~ or in violation of any ordinance, ~~regulation, or provision of this code or law.~~ Any suspension or revocation shall be accompanied by notice of a right to a hearing as provided in Section 108 of this code. Upon written request, the hearing shall be afforded within three business days from receipt of the request.

SECTION 304—FEES

304.1 Permit Fees. The fee for each permit shall be as set forth in the city fee schedule.

~~Except as provided by Sections 403.5 and 403.5.1, the total value to be used in computing the permit fee pursuant to *Building Code* Section 109.3 shall be the total value of all construction work for which the permit is issued. Additions to existing work shall be charged for at the same rate as for new work.~~ The moving and relocating of electrical equipment for which a permit inspection fee is not otherwise provided for in Section ~~118~~ 117 of the *Building Code*, will be charged at the minimum fee.

304.2 Plan Review Fees. Where plans are lost or changed so as to require an additional plan review or when a plan review is required and ~~there is no~~ building permit is required, a plan review fee shall be charged at the rate provided for in Sections 118.1.11 and 118.2.8 of the Building Code and the city fee schedule.

304.3 Expiration of Plan Review. Applications for which no permit is issued within 180 calendar days following the date of application shall expire by limitation, and plans and other data submitted for review may thereafter be returned to the applicant or destroyed by the *building official*. The *building official* may extend the time for action by the applicant for a period not exceeding 180 calendar days on request by the applicant showing that circumstances beyond the control of the applicant have prevented action from being taken. No application shall be extended more than once. In order to renew action on an application after expiration, the applicant shall resubmit plans.

304.4 Investigations and Fees: for Work without a Permit. —~~1. Investigation.~~ Whenever any work for which a permit is required by this code has been commenced without first obtaining a permit, a special investigation shall be made before a permit may be issued for the work.

~~2. Fee.~~ An investigation fee, in addition to the permit fee, shall be collected whether or not a permit is then or subsequently issued. The investigation fee, which is intended to cover additional costs associated with inspection of work commenced without a permit, shall be equal to the amount of the permit fee that would be required by this code if a permit were to be issued, subject to applicable minimum investigation fees stated in the city fee schedule. The payment of an investigation fee shall not exempt any person from compliance with all other provisions of this code or from any criminal penalty prescribed by law.

304.5 Fee Refunds. —~~1.—~~The *building official* may authorize the refunding of any fee paid hereunder that was erroneously paid or collected ~~if the fee has been paid or collected because of due to an error made by one or more a city employees.~~ This provision shall not be applicable if ~~the error was caused by~~ occurred because of incorrect information provided by the applicant.

~~2.—~~The *building official* may authorize ~~the a~~ refunding of not more than 90 percent of the amount in excess of the minimum permit fee paid when no work has been done under a permit issued in accordance with this code. If work has been done under the permit, no refund ~~may shall~~ be authorized. The originally paid administrative fee ~~established by the city fee schedule shall not be~~ and the plan review portion of the permit fee shall be nonrefundable.

3.—The *building official* shall not authorize ~~the a~~ refunding of any fee paid except upon written application filed by the original permittee holder not later than 180 calendar days after the date of the fee payment of the fee.

304.6 Annual fee increase. Notwithstanding any maximum fee established pursuant to the Construction Code, the fees in this or in any volume of the Construction Code, as adjusted according to this section, shall be automatically increased on the first day of each subsequent calendar year as provided in Section 1-13 of the City Code. **Registration Fees.** The fee for each registration shall be as set forth in the city fee schedule.

304.7 License or Registration Suspension. When the *building official* has authorized work to begin prior to the issuance of a permit due to an emergency situation, any failure on the part of the contractor to pay all applicable permit fees within 20 calendar days of the date the *building official* has authorized the work to begin shall be grounds for the suspension of the contractor's and master's licenses and/or registrations. At least 10 calendar days prior to the suspension, the *building official* shall give the contractor and master notice of the date the licenses and/or registrations will be suspended if the fees are not paid and inform the contractor and master that they may have a hearing before the Electrical Board if either or both of them submit a written request therefor to the secretary of the board ~~Board~~ at least three business days prior to the date the suspension will become effective. If the contractor and/or master timely requests a hearing, the suspension shall not become effective until the board ~~Board~~ has heard the matter and rendered its decision as to whether all applicable permit fees have been paid. If the board finds that all applicable permit fees have not been paid, the contractor's and master's licenses and/or registrations shall be suspended until they have been paid. If the contractor's and master's licenses and/or registrations remain suspended for six months, the licenses and/or registrations shall automatically be revoked.

SECTION 305—INSPECTIONS

305.1 General. All ~~electrical~~ premises wiring (systems) and equipment installed under provisions of this code shall be subject to inspection by the *building official*. No portion of any ~~electrical~~ premises wiring (system) or equipment intended to be concealed shall be concealed until inspected and approved. Neither the *building official* nor the city shall be liable for expenses entailed in the removal or replacement of any material required to allow inspection. When the installation of the ~~electrical~~ premises wiring (system) and equipment is complete, an additional and final inspection shall be made. ~~Electrical~~ Premises wiring (systems) and equipment regulated by this code shall not be connected to the energy source until inspected and authorized by the *building official*.

305.2 Operation of Electrical Equipment. The requirements of this section shall not be construed to prohibit the operation of any ~~electrical~~ premises wiring (system) or equipment installed to replace existing equipment. The ~~Building Inspection Division~~ Houston Public Works Electrical Inspections Section shall endeavor to inspect work within three working days following the receipt of an inspection request. In any instance in which the inspection is not made within three working days, the requestor may submit a written notice of inspection request to the Electrical Division Manager who shall ensure that the inspection is completed by the end of the next business ~~city work~~ day following receipt of the written inspection request.

305.3 Inspection Requests. It shall be the duty of the person doing the work authorized by a permit to notify the *building official* that the work is ready for inspection.

305.4 Other Inspections. In addition to the called inspections required by this code, the *building official* may make or require other inspections of any work to ascertain compliance with the

provisions of this code and other applicable laws. If a permit has not been issued for the work and city inspectors are refused permission to inspect, they may pursue legal action up to and including seeking obtain a search warrant as authorized by law to make the inspections.

305.5 Moving and Relocating of Work. The moving and or relocating of portions of a electrical premises wiring (system) or electrical equipment for which a permit inspection is required shall require the payment of a fee that, if fee is not otherwise provided for in Section 118-447 of the Building Code or the city fee schedule, will be charged at the minimum fee.

305.6 Reinspections. The building official may assess a reinspection fee for each inspection or reinspection when an inspector arrives to perform the inspection and finds the portion of work for which inspection is called is not complete or when corrections called for in a previous inspection report have not been made.

This section is not to be interpreted as requiring a reinspection fee the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or reinspection.

The building official may assess reinspection fees when the inspection record card is not posted or otherwise available on the work site, when the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, or for deviating from plans requiring the approval of the building official.

To obtain a reinspection, the applicant shall make a request and pay the reinspection fee in accordance with Section 118 of the Building Code and the city fee schedule.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

A reinspection fee in the amount specified in the city fee schedule and established in Section 117 of the Building Code shall be assessed for each inspection or reinspection when the portion of work for which inspection is called is not complete or when corrections called for are not made.

—This provision is not to be interpreted as requiring reinspection fees the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for inspection or reinspection.

SECTION 306—CONNECTION APPROVAL

306.1 Energy Connections. Any electrical system—premises wiring (system) or equipment regulated by this code shall not be connected to a source of energy or power until approved by the building official.

306.2 Temporary Connections. The building official may authorize the temporary connection, with proper permits, of electrical systems—premises wiring (systems) or equipment to a source of energy or power for the purpose of testing the equipment, or for use under a temporary certificate of occupancy.

EXCEPTION: *In an emergency situation where power is inadvertently interrupted, the Building Official may authorize a temporary connection, subject to later permitting and inspection.*

No permit for temporary use shall be valid for a period longer than 90 calendar days. Except as otherwise provided below, at expiration of the authorized period, the building official shall issue written instructions to the electric utility company or other person having control of the supply of energy or power to the installation to disconnect service to the temporary installation,

unless he or she has granted a permanent approval or an additional temporary approval. At least 10 calendar days prior to the proposed date of disconnection, the *building official* shall give written notice to the electric utility company or other person having control of the supply of energy or power to the temporary installation and to the owner of the building, setting forth the date that the electricity will be disconnected unless permanent approval of the connection has been obtained or an additional permit for temporary use has been issued. The notice shall be posted on or in view of each principal entrance to the building for the information of all persons who occupy the building. Any person affected by the proposed disconnection of electricity may request a hearing on the matter. The request shall be in writing and delivered to the office of the Electrical Division Manager at least ~~three-city work~~ business days prior to the proposed date of disconnection. If a hearing is requested, a hearing date shall be set by the *building official*, and the hearing shall be held prior to the disconnection of the electricity, unless the person asking for the hearing requests a delay in that hearing.

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Chapter 4

LICENSING AND REGISTRATION REQUIREMENTS

SECTION 401—LICENSE OR REGISTRATION REQUIRED

401.1 General. There is hereby established a city licensing or registration requirement for contractors and for persons performing electrical maintenance work, electrical work, outside electrical work, residential electrical work and sign electrical work.

401.2 Required. It shall be unlawful for any person who does not hold a current and valid applicable city license or registration issued under this chapter or an applicable state electrical license to perform electrical work, electrical maintenance work, outside electrical work, residential electrical work or sign electrical work.

It shall be unlawful for any person to employ or utilize any person who does not hold a current and valid applicable city license or registration issued under this chapter or an applicable state electrical license to perform electrical work, electrical maintenance work, outside electrical work, residential electrical work or sign electrical work.

The city shall not issue new electrical licenses other than contractor licenses. A person who holds a current and valid city electrical license may renew such license as provided in this code.

A person who holds a current valid state electrical license is not *required* to hold a city registration, provided that a holder of a state electrical contractor license or a state electrical sign contractor license must hold a city registration to perform work as a contractor.

401.3 Contractors. Any licensed or registered electrical contractor may contract with another licensed or registered electrical contractor for electrical work. A licensed or registered electrician employed by the prime electrical contractor may have direct, personal supervision and control of the project.

401.4 Documentation. A holder of a state electrical license, a city license, or a city registration must carry such current and valid documentation on his or her person at all times while performing the work for which he or she is licensed or registered.

SECTION 402—LICENSES AND REGISTRATIONS

402.1 Applications. Applications for all licenses and registrations shall be made in writing to the Electrical Division, stating the name and address of the applicant, the applicant's appropriate state electrical license, if applicable, and such other relevant information as may be required by the Electrical Division.

Before a license or registration is issued under this code, the applicant must pay the fee, if any, required for the license or registration as set forth in the city fee schedule.

402.2 Duration of City License or Registration. Any city license issued under previous versions of the *City of Houston Electrical Code* prior to September 1, 2004, and valid as of such date, shall remain in effect until September 1, 2006, unless renewed for successive one-year terms. Any registration issued under this chapter shall expire on the expiration or suspension date of the registrant's state electrical license ~~or upon suspension of such license~~.

402.3 License or Registration Issuance. Upon determining that an applicant meets all of this chapter's requirements for a license or registration, the Electrical Division shall issue the license or registration. No license or registration issued in accordance with the provisions of this chapter shall be assignable or transferable. Any registration issued under this chapter shall expire on the expiration or suspension date of the registrant's state license ~~or upon suspension of such license~~.

402.4 Revoked License or Registration. City licenses issued under previous versions of the *City of Houston Electrical Code* and licenses and registrations issued under this chapter may be revoked by the Electrical Board for any reason defined in this code, provided, however, if the Electrical Board finds that the public interest will be adequately protected by the issuance of a warning or by a suspension of the license or registration for a definite period of time not exceeding one year, it shall issue a warning or order a suspension. If a registration is revoked, the Electrical Board shall not accept an application from that person for a new registration for one year following the date of revocation. Notice shall be sent to the Texas Department of Licensing and Regulation of any disciplinary action taken by the Electrical Board against any master or contractor.

402.5 Revocation Reasons. Following 10 calendar days' notice by personal delivery or certified mail and after a hearing before the Electrical Board, at which the person may be accompanied by an attorney ~~at law~~ of their choice, the Electrical Board may revoke or suspend that person's license or registration for any of the following reasons:

1. Fraud or misrepresentation in obtaining a city license, registration, or permit.
2. Violating on more than one occasion, either willfully or maliciously, or by reason of incompetence, any provision of this code.
3. Defrauding of any person for whom a service has been rendered or contracted to be rendered.
4. Securing a permit for electrical work not actually performed by the master electrician, line master electrician, or sign master electrician ("master") or by licensed employees under the master's control, supervision, direction and responsibility. (This provision is intended to prevent a master from securing a permit for the purpose of evading the spirit and intent of this code by entering into any simulated scheme, transaction or device whereby electrical work will be done by persons who are not employees of the master or employees of the master's employer.)
5. Securing a permit under any pretext for an installation ~~concerning for~~ which the applicant has no valid contract. (This provision is intended to prevent a master electrician, line master electrician or sign master electrician from securing a permit for the purpose of evading the spirit and intent of this code by any simulated scheme, transaction or device, or performing electrical work without a valid permit.)
6. Performing any electrical work as defined herein for which no electrical permit has been obtained.
7. For failure of any master electrician, line master electrician or sign master electrician to provide full-time active participation and day-to-day management of all electricians performing work under all permits issued under his or her signature.
8. Acting as a master electrician, line master electrician or sign master electrician for more than one electrical contractor (including him ~~or herself~~ if self-employed) at one time, ~~unless the master owns more than 50 percent of the electrical contracting business.~~

The Electrical Division may withhold the issuance of a registration to an applicant by the same process used for revocation or suspension as described above. In addition to constituting grounds for revocation or suspension of a license or registration, violation of any of Items 1 through -8 are declared to be unlawful and may result in criminal prosecution. Criminal prosecution shall not preclude administrative action by the Electrical Division or Electrical Board and vice versa.

402.6 License or Registration Transfer. No master electrician, line master electrician or sign master electrician shall assign or in any way convey his or her city license or registration, use thereof or any rights thereunder to anyone by power of attorney or any other process or become involved in any type of agreement, assignment or use whereby he or she will not have supervision, direction, control or responsibility for the electrical work for which an electrical permit has been obtained under his or her city license or registration.

402.7 City License. A person who holds a license issued pursuant to this code may renew his or her city license by paying the annual renewal fee provided in the city fee schedule.

SECTION 403—CONTRACTOR REGISTRATION OR LICENSE

403.1 General. No person shall undertake any work as a contractor unless that person has been registered with the city as a contractor or unless that person holds a current and valid city license as a contractor.

An applicant for a contractor registration must have a valid state license as an electrical contractor, an electrical sign contractor, or a residential appliance installation contractor.

403.2 Contractor's Responsibility. The licensed or registered contractor will be responsible for ensuring that all work performed under his or her license or registration is properly permitted, that all personnel working under his or her license or registration are properly licensed or registered, and that all work is performed in accordance with this code.

403.3 Scope of License or Registration. In the event that the applicant is or has employed a line master electrician or a sign master electrician in lieu of a master electrician, the scope of the contractor license ~~or and~~ registration shall ~~will~~ be restricted to that work for which the applicant or the master is licensed.

403.4 Contractor's Records. For purpose of enforcing this section, the *building official* may, during normal working hours, examine and make copies of contracts, employment records, and payroll records for the preceding 24 months. Should the contractor fail or refuse to make a full, true and accurate disclosure of these records, the *building official* may, after written notification by certified mail, withhold the issuance of electrical permits to that contractor and master electrician until there has been a full and accurate disclosure of the records. This provision shall be cumulative of all other remedies provided herein.

403.5 Termination of Master-Contractor Relationship. Upon the death or termination of the designated master electrician of record, sign master electrician of record or line master electrician of record, who is not also the contractor, the contractor shall be permitted to continue operating under the master's license or registration for a period not to exceed ~~30~~ 45 calendar days from the date of the termination of the relationship. When the relationship terminates, no additional permits will be granted until a new master electrician of record, sign master electrician of record, or line master electrician of record is employed and a name change is obtained for all existing active permits under the terminated master-contractor relationship ~~are re-permitted as specified in Section 303.3 of this code~~.

403.5.1 Death of Master/Contractor. Upon the death of the contractor, when the contractor is the designated master electrician of record, sign master electrician of record or line master electrician of record of the company, no additional permits will be granted until a valid master electrician of record and a contractor is employed and all active permits under the deceased master/contractor are re-permitted. The cost of the new permit shall be charged at no fee when permitted under the valid master and contractor within 45 calendar days of the death of the contractor, except for the administrative fee established in the city fee schedule. Applicants who fail to repermit any applicable work within the timeframes established by this code shall be subject to permit fees in the amount stated in the city fee schedule for the remaining uninspected work.

403.6 Master-Contractor Relationship. The master electrician of record, sign master electrician of record or line master electrician of record and the contractor shall register with the Electrical Division. Upon termination of the master-contractor relationship, notice shall be given by the master electrician of record, sign master electrician of record, line master electrician of record or the contractor to the *building official* within five-city-work-business days. The termination of the master electrician of record, sign master electrician of record or line master electrician of record shall cause all permits taken out under the terminated-master's master electrician of record's license to be voided 45-30 calendar days after the date of termination. No additional permits will be granted until a new master electrician of record is employed and a name change is obtained for all existing active permits under the previous master electrician of record, are re-permitted as specified in Section 303.3 of this code. The master electrician of record shall must play an active role in the business for which he or she is the registered master electrician of record. This section in no way shall be construed as preventing the master from having other sources of income.

403.7 Contractor Business Location. To apply for a registration, an applicant must provide to the city a physical address (not a post office box).

403.8 Insurance. To apply for or renew a city contractor's license, an applicant must provide evidence of the following to the Electrical Division:

1. That the applicant is a city licensed master electrician, line master electrician or sign master electrician or has such a person in his or her employment as a full-time employee.; and
2. That the applicant is in compliance ~~complies~~ with Section 1305.159(a)(3) of the *Texas Occupations Code* regarding workers' compensation coverage.

SECTION 404—MASTER ELECTRICIAN

A master electrician may:

1. Perform all electrical work, including electrical work performed by a sign master electrician and a line master electrician.
2. Supervise an electrician.
3. Serve as a master electrician of record for a contractor.

The master electrician of record shall not have a city electrical contractor's registration for more than one contracting business.

SECTION 405—LINE MASTER ELECTRICIAN

405.1 General. A line master electrician may:

1. Perform outside electrical work as defined in this code.
2. Supervise an electrician performing outside electrical work.
3. Serve as a line master electrician of record for a contractor.

405.2 License. A line master electrician license shall authorize only outside electrical work. The line master electrician will otherwise be under the same rules, regulations, rights, privileges and duties imposed on or enjoyed by a master electrician.

SECTION 406—SIGN MASTER ELECTRICIAN

406.1 General. A sign master electrician may:

1. Perform sign electrical work.
2. Supervise an electrician performing sign electrical work.
3. Serve as a sign master electrician of record for a contractor.

406.2 License or Registration. Sign master electricians shall also comply with requirements as set out in the Sign Code, Chapter 46 of the *Building Code*. The sign master electrician license shall authorize only electrical sign work. The sign master electrician will otherwise be under the same rules, regulations, rights, privileges and duties imposed on or enjoyed by a master electrician.

406.3 Scope of Work. A sign master electrician shall be permitted to manufacture, install and do wiring that is required to connect the sign, outline lighting or inside lighting to an existing circuit or circuits that have been approved by the *building official* for connection of the specific load covered by the permit issued. Should the available circuit or circuits not be adequate for the specific sign and outline lighting load to be connected, then a contractor shall be employed by the owner or the owner's agent to install the necessary wiring required to provide the required capacity and circuits for the proposed signs and outline lighting. However, a sign master electrician shall be permitted to install the necessary service and circuits for an isolated sign and/or outline lighting installation.

406.4 Isolated Sign. For the purposes of this section, an isolated sign and/or outline lighting installation shall be defined as an installation in which neither the meter nor service supplying the installation or any of the signs or outline lighting are mounted on or in any building or structure that is not a part of the signs or outline lighting.

406.5 Circuits. As applied in this section, signs or outline lighting on the exterior of a building must have the circuit or circuits available on the exterior of the building. Nothing herein is intended to limit or repeal the effect of the Sign Code, but shall be cumulative thereof.

406.6 Shop Inspection. All work performed and materials, apparatus, devices, appliances, fixtures or equipment used shall conform with the full requirements of this chapter. Any electric sign built within the city for installation within the city, that is not listed and labeled, shall have a shop inspection by the *building official* before the sign is shipped out of the shop. The shop inspection fee shall be separate from and shall be double that required for signs as specified in the *Building Code*. After approval by the *building official*, an inspector shall attach an approval label or stamp to the sign. Signs constructed outside the city, but erected within the city, shall be subject to the same rules and regulations as apply to signs constructed within the city, except that inspections shall be performed by an approved agency.

EXCEPTION: *When unlisted component parts are utilized to reconfigure or construct a sign, the licensed sign contractor ~~will~~ shall assume liability.*

SECTION 407—JOURNEYMAN ELECTRICIAN

No person shall undertake any work as a journeyman electrician unless the person has received a city or state electrical license as a journeyman electrician.

SECTION 408—JOURNEYMAN LINEMAN

No person shall undertake any work as a journeyman lineman unless the person has received a state or city electrical license as a journeyman electrician or a journeyman lineman.

SECTION 409—SIGN JOURNEYMAN ELECTRICIAN

No person shall undertake any work as a sign journeyman electrician unless the person has received a state or city electrical license as a sign journeyman electrician or a journeyman electrician.

SECTION 410—RESIDENTIAL WIREMAN (RESIDENTIAL JOURNEYMAN ELECTRICIAN)

No person shall undertake any work as a residential wireman (residential journeyman electrician) unless the person has received a state or city electrical license as a residential wireman or a journeyman electrician.

SECTION 411—APPRENTICE ELECTRICIAN

411.1 General. No person shall undertake any work as an apprentice electrician unless the person has received a state or city electrical license as an apprentice electrician.

411.2 Work Performed. An apprentice electrician licensed under this section shall be permitted to perform work as an apprentice, an apprentice lineman, a sign apprentice electrician, residential apprentice and an apprentice maintenance electrician under the supervision of a master electrician, journeyman electrician, maintenance electrician, or a residential wireman.

SECTION 412—MAINTENANCE ELECTRICIAN

412.1 General. No person shall undertake work as a maintenance electrician unless the person has received a state or city electrical license as a maintenance electrician or a journeyman electrician.

412.2 Work Performed. A maintenance electrician licensed under this section shall be permitted to perform electrical maintenance work under the general supervision of a master electrician, on behalf of an electrical contractor.

412.3 Exempt work. A maintenance electrician license is not required if:

1. The work is performed by a person who does not engage in electrical work for the public;
2. The work is performed by a person regularly employed as a maintenance person or maintenance electrician for a business; and

3. The electrical work does not involve the installation of electrical equipment during new construction as defined by rules adopted under Chapter 151 of the *Texas Tax Code*.

SECTION 413—RESIDENTIAL APPLIANCE INSTALLER

413.1 General. No person shall undertake work as a residential appliance installer unless the person has received a state electrical license as a residential appliance installer or any other license recognized for such purpose in this code.

413.2 Work Performed. A residential appliance installer listed under this section shall be permitted to perform work defined as residential appliance installation.

SECTION 414—APPEALS FROM LICENSING AND REGISTRATION DECISIONS OF ELECTRICAL BOARD

Any holder of a license or registration whose license or registration has been revoked, placed on probation, or suspended by the *building official*, where such action and/or decision was proposed and upheld by the Electrical Board, shall have the right of appeal to City Council as provided in Section 203.7 of this code. The City Council shall affirm, modify or reverse the action and/or decision of the Electrical Board. The action of the City Council shall be final. If no appeal is taken within the time and in the manner herein above provided, the ruling of the Electrical Board shall be final. The action of the Electrical Board shall be in effect during the appeal process before City Council and will remain in effect until modified or reversed by action of City Council on the appeal. The action of the Electrical Board shall remain in effect unless and/or until reversed or modified as provided for herein. In the event of suspension or revocation of licenses and/or registrations, the effective date will be 10 calendar days immediately following the action of the Electrical Board. A master whose license or registration has been suspended or revoked will not be issued any new permits after the action of the Electrical Board or during the 10 calendar day period following the action of the Electrical Board. All licenses and registrations shall be submitted to the secretary of the Electrical Board within 10 calendar days after the date of revocation or suspension.

SECTION 415—RESERVED REGISTRATION FEES

~~To obtain a registration, an applicant shall pay the applicable registration fee as stated in the city fee schedule.~~

~~———— All fees shall be prorated for each month the license is to be in effect based on a 12 month period.~~

~~———— An administrative fee payable pursuant to Section 117 of the Building Code shall be charged upon the preparation of each fee or deposit receipt issued by the *building official*. This fee shall apply regardless of whether the fee or deposit is payable pursuant to this code or the City Code. This fee shall be in addition to all other applicable fees or deposits. When paid for a deposit or fee receipt, this fee shall neither constitute nor be refundable as a part of the deposit.~~

SECTION 416—LICENSE AND RENEWAL FEES

To obtain a contractor license or renew an existing city license the applicant shall pay the applicable city license fee set forth for this provision in the city fee schedule.

All fees shall be prorated for each month the license is to be in effect based on a 12-month period.

An administrative fee payable pursuant to Section ~~417~~ 118.1.2 of the *Building Code* shall be charged upon the preparation of each fee or deposit receipt issued by the *building official*. This fee shall apply regardless of whether the fee or deposit is payable pursuant to this code or the *City Code*. This fee shall be in addition to all other applicable fees or deposits. When paid for a deposit or fee receipt, this fee shall neither constitute nor be refundable as a part of the deposit.

SECTION 417—CONTINUING EDUCATION FOR CITY LICENSE RENEWAL

~~417.1 General.~~ Master, journeyman, apprentice, and maintenance electricians shall annually complete a four-hour code review course, approved by the state, based on the *National Electrical Code*.

EXCEPTION: *Apprentice electricians in an approved apprenticeship training program.*

Chapter 5 BUILDING STANDARDS

SECTION 501—WIRING SYSTEMS

501.1 General. Any type of wiring or wiring systems may be used in the city as approved in the *National Electrical Code* adopted in Section 502 of this code, except where specifically provided herein.

Refer to Section 403 of the *Building Code* for high-rise building requirements and to Chapter 46 of the *Building Code* for the Sign Code.

501.2 Electric Utility Company. All changes in the service standards and area practices that are promulgated by the electric utility company shall be submitted to the Electrical Board for review and comment at least 30 calendar days prior to enactment.

For the purposes of this code, the distribution system of any electric, telephone, telegraph, signal and/or electric utility company shall not extend to any electrical apparatus or equipment that the company does not own or control.

If a licensed or registered contractor needs access to metering and service equipment under control of an electric utility company to perform certain electrical work, the electric utility company must unlock and/or make accessible all metering and service equipment within four hours of the time the contractor requests the action, if possible. Licensed or registered contractors may access metering and service equipment.

SECTION 502—ADOPTED STANDARDS

The following codes, pamphlets and specifications are hereby adopted, authentic copies of which are filed with the City Secretary as part of this code, and shall govern and be observed and followed in all ~~electrical-premises wiring~~ (systems) and in the construction, installation, repair, alteration, operation and maintenance of ~~electrical-premises wiring~~ (systems) apparatus or fixtures:

- (1) The *National Fire Protection Association Pamphlet No. 70, National Electrical Code, 2020* ~~2014~~-Edition.
- (2) The *2012 National Electrical Safety Code*. When the provisions of the *National Electrical Safety Code* and the *National Electrical Code* are in conflict, the *National Electrical Code* shall prevail.

In case of conflict between the provisions of the standards listed in the above paragraphs and the provisions of this code, the provisions of this code shall prevail.

SECTION 503—METERS

503.1 General. The meter cabinets and electrical metering equipment through which service is rendered by the electric utility company to domestic establishments and buildings combining domestic establishments with commercial or industrial usage shall be installed where readily accessible on the exterior of the building. Fireproof meter cabinets or meters sockets shall be approved by the electric utility company and installed by the master electrician performing the work, said meter cabinets to be located so the center of the opening of the meter dial shall not be less than 5 feet (1524 mm) nor more than 6 feet (1829 mm) above mean ground level so that the

cabinet is readily accessible to the electric utility company for service. On apartment buildings, where space limitations will not permit placing all meters at the same height, they may be arranged in two tiers, with the openings for the meter dials in lower tiers as near as practicable to 5 feet (1524 mm) above the mean ground level and second tier placed as near as practicable above the first. Where space limitations will not permit placing of meter cabinets as outlined above, the electric utility company, subject to the approval of the *building official*, may determine the arrangement to be used. All service outlets shall be located so as to permit placing the electric utility company's service wires on the wall of the building next to the supply. Locations may also be modified with the approval of the *building official* for occupancies intended primarily for handicapped persons.

503.2 Location of Meters. Meters will be located on a building so as to be accessible as determined by the electric utility company and may only be placed on the front or street side of the building with the written consent of the owners filed with the *building official*.

503.3 Relocation of Meters. Where meter loops are installed in inaccessible places in houses or buildings and the electric utility company desires to relocate said meter loops for convenience in the rendering of its service, it may, upon request to the *building official*, have a licensed or registered contractor reinstall meter loops to a point where the same would be located if the house or building were having a new system of wiring installed, and all the work done at the request of the electric utility company shall be performed without cost to the owner unless the location is the result of the wiring having been condemned by the *building official* for practices in violation of the provisions of this code or any applicable city ordinance.

503.4 Separate Meters. No permit, certificate or other authorization issued by the city under the provisions of this code for the construction or occupancy of a new apartment house or conversion to a condominium shall be issued unless the construction plan submitted by the applicant as part of the process for the approval of the permit, certificate or other authorization provides for individual electric metering by the utility company or submetering by the owner of each dwelling unit for the measurement of the quantity of electricity, if any, consumed by the occupants within that dwelling unit in accordance with the provisions of Chapter 184 of the *Texas Utilities Code* and regulations issued thereunder.

SECTION 504—SERVICES AND FEEDERS

504.1 General. All services, feeders, and underground branch circuits shall be installed in raceways, busways, cable trays, or metal sheath cables approved by this code.

EXCEPTIONS:

1. *Type SE multi-conductor cable having a bond wire and an insulated neutral wire will be permitted for feeders on wood-frame residential occupancies, provided the conductors have a disconnecting means and are protected by an approved current-limiting device. Each feeder shall be installed only in a location or in a manner that is not subject to mechanical damage and shall also be installed in accordance with other sections of this code and the National Electrical Code.*
2. *Aerial feeders.*
3. ~~*Feeders in cable trays.*~~

504.1.1 Available Fault Current Labeling. In lieu of the maximum available fault current marking as required by 110.24, a permanently affixed label shall be applied with the available fault current at the time of installation and calculation. The label shall be 2" inches

* by 3" inches in size and shall be blue lettering on a contrasting background. This label shall also include the date of the calculation.

504.2 Service Disconnect. Service disconnecting means shall be located so that the height to the center of the operating handle shall not be less than 4 feet (1219 mm) and not more than 6 feet 7 inches (2.0 m) above the floor of finish grade, except as installed in freestanding or building-type switchgear built to the National Electrical Manufacturers Association's specifications. When necessary to install tiered metering on multifamily dwellings, it shall be permissible to vary the heights of the disconnecting means within 2 feet 6 inches to 6 feet 6 inches (762 mm to 2.0 m) above finished grade.

504.2.1 Meter Disconnect/Service Disconnect. Where approved, in existing spaces or configurations where there is insufficient space to provide the additional disconnect, the service disconnect and the meter disconnect may be ~~permitted to be~~ the same.

504.3 Grounding Electrode System. All grounding electrodes as described in the *National Electrical Code, 2020-2014 Edition*, Section 250.52(A)(1) through (A)(~~8~~6), that are present at each building or structure served shall be bonded together to form the grounding electrode system. Grounding electrodes as described in the *National Electrical Code, 2020-2014 Edition*, Sections 250.52-(A)(1), ~~(A)(2)~~, through (A)(3), and (A)(7), shall be supplemented with a rod electrode as described in Section 250.52-(A)(5)~~(b)~~. Where no other grounding electrode is present a rod electrode shall be permitted to be the sole grounding electrode.

EXCEPTION: *Concrete-encased electrodes of existing buildings or structures shall not be required to be part of the grounding electrode system where the steel reinforcing bars or rods are not accessible for use without disturbing the concrete.*

504.4 Multi-tenant services. In structures designed for multiple tenants, where additional services are likely, a buss conductor service cable tap box shall be required. The service cable tap box shall be weatherproof and comply with the following:

1. The service cable tap box shall be lockable with provisions to accept the utility locks.
2. Covers shall be fastened with machine screws or bolts. Hinged covers shall not be permitted.
3. Covers shall have two handles for cover removal.
4. Busbars shall be protected from physical damage and held firmly in place.
5. Busbars shall be sized to physically accommodate the maximum number of tenant services anticipated and predrilled.
6. Busbars shall be stepped.
7. The phase arrangement on 3-phase horizontal common power and vertical buses shall be A, B, C from front to back, top to bottom, or left to right, as viewed from the front of the service cable tap box. The B phase shall be that phase having the higher voltage to ground on 3-phase, 4-wire, delta-connected systems. The phases shall be permanently marked.
8. The bottom of the service cable tap box shall be a minimum of 6 inches above finished grade.
9. The service cable tap box shall ~~be in compliance~~ comply with Utility Service Standards.

EXCEPTION: *Residential Occupancies.*

10. All other requirements of the utility provider.

SECTION 505—NONMETALLIC SHEATHED CABLE

505.1 Approved installations. Nonmetallic sheathed cable shall be permitted for temporary installations in addition to those allowed by National Electrical Code, 2020 Edition, Article 334.

SECTION 506—CONDUIT

Electrical metallic tubing (EMT) shall not be buried in ground or embedded in concrete supported by earth. Flexible or pliable raceways shall be used only for temporary work, branch circuits, and for permanent connections to vibrating, rotating and movable equipment and fixtures.

SECTION 507—TEMPORARY SAW POLES

Temporary saw poles shall be constructed of weatherproof electrical materials consisting of a minimum of 60-ampere switch or circuit breaker panel and grounded receptacle mounted on at least a solid 4-inch by 4-inch (102 mm by 102 mm) timber or equivalent wood structure. Service conductors shall be 6 AWG or larger installed in conduit.

SECTION 508—ELECTRICAL MATERIAL AND EQUIPMENT

No electrical materials, apparatus, devices, appliances, fixtures, or equipment shall be sold or installed in the city unless they are in conformance with the provisions of this code, the laws of the State of Texas and any applicable rules and regulations issued under the authority of the state statutes.

The maker's name, trademark, or other identification symbol shall be placed on all electrical materials, apparatus, devices, appliances, fixtures, and equipment used or installed under the provisions of this code.

All electrical materials and equipment shall be listed and labeled for intended use and shall be included in a list published by an approved agency.

EXCEPTION: *Proton therapy equipment, when in its experimental stage.*

SECTION 509—ELECTRICAL FENCES

This code does not regulate electrically charged fences installed in accordance with Section 28-10 of the *City Code*.

SECTION 510—LOCATION

510.1 Except as otherwise provided in this ~~Code~~ code, no ~~electrical system~~ premises wiring (system) and/or equipment, or part thereof, shall be located in any lot other than the lot that is the site of the building, structure, or premises served by such facilities unless the ~~electrical system~~ premises wiring (system) and/or equipment, or part thereof, is located in an easement.

~~SECTION 511—TAMPER RESISTANT RECEPTACLES~~

~~511.1~~ When tamper-resistant receptacles are required by this code, they will not be required when the building is wired with aluminum wiring.

SECTION 512 – SWIMMING POOLS

~~512.1~~ ~~Swimming pools.~~ Equipment or lighting over 50 volts shall not be installed in newly constructed swimming pools.

SECTION 513—FULL CUTOFF FIXTURES

~~513.1~~ For purposes of this section, abutting development shall have the definition ascribed to it by Section 42-1 of the *City Code*. Full cutoff fixtures as defined in the *Building Code* shall be required for any wall mounted outdoor fixtures installed on an abutting development installed within 30 feet of an abutting single-family residential property. All pole mounted fixtures installed on an abutting development within 30 feet of an abutting single-family residential property shall be full cutoff fixtures with house side shields.

SECTION 514—ARTICLES NOT ADOPTED

~~514.1~~ The following provisions of the *National Electrical Code, 2020-2014 Edition* are not adopted.

1. ~~Sections 210.12(A)(2), (3), (4);~~
- ~~2.~~ Section 240.91(B), regarding protection of conductors;
- ~~23.~~ Section 312.5(Ce), regarding where cables are secured, however (the exceptions to Section 312.5 are to remain hereby adopted); and
- ~~34.~~ Section 645.25 regarding engineering supervision.

Houston Amendments to the *2015 International Existing Building Code*



Adopted by Ord. No. 2021-1037¹

Passed December 1, 2021²

Effective April 1, 2021³

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1. The City Secretary shall insert the number of the adopting ordinance.
 2. The City Secretary shall insert the date passage and approval of the adopting ordinance.
 3. The City Secretary shall insert the effective date of the adopting ordinance.

CHAPTER 1

SCOPE AND ADMINISTRATION

[A] 101.1 Title. These regulations shall be known as the City of Houston Existing Building Code of [NAME OF JURISDICTION], hereinafter referred to as “this code,” and also known as the Existing Building Code.

The Construction Code collectively includes this volume and certain other codes, pamphlets, specifications and documents that are adopted in or by reference through the adopting ordinance, City of Houston Ordinance No. 2021-1037⁴.

[A] 101.2 Scope. The provisions of the ~~International-Existing Building Code~~ shall apply to the repair, alteration, change of occupancy, addition to and relocation of existing buildings.

[A] 101.3 Intent. The intent of this code is to provide flexibility to permit the use of alternative approaches to achieve compliance with minimum requirements to safeguard the public health, safety and welfare insofar as they are affected by the repair, alteration, change of occupancy, addition to and relocation of existing buildings. The provisions of this code shall not apply to any activity for which local regulation is preempted by federal or state law.

[A] 101.6 Appendices. ~~The code~~ building official is authorized to require rehabilitation and retrofit of buildings, structures or individual structural members in accordance with the appendices of this code if such appendices have been individually adopted. Appendices A, B, C, and D, including any amendments thereto adopted by this jurisdiction, are hereby adopted and shall be incorporated into and made part of this code. Wherever in this code reference is made to an appendix, the provisions in the appendix shall not apply unless specifically adopted in this section.

[A] 102.1 General. Where this is a conflict between a general requirement and a specific requirement, the specific requirement shall prevail ~~be applicable~~. Where in any specific instance ~~case~~ ~~different sections~~ provisions of this code, including adopted appendices, specify different materials, different methods of construction or other requirements that differ from those provided in the City Code or other volumes of the Construction Code, including adopted appendices, other than the Fire Code, and its adopted appendices and standards, the most restrictive shall prevail ~~govern~~. Where, in any specific instance, provisions of this code, including adopted appendices, specify different materials, different methods of construction, or other requirements that differ from those provided in the Fire Code, including its adopted appendices and standards, and the building official and the fire marshal are unable to mutually reconcile the requirements by issuing a written interpretation, then either of them may refer the matter to the General Appeals Board created under the Building Code, which shall conduct a review of the matter and issue a written code interpretation based upon the apparent intent of the codes involved. Notwithstanding any other provision, interpretations that are issued by the General Appeals Board shall not be subject to further appeal.

4. The City Secretary shall insert the number of the adopting ordinance.

SECTION 103
DEPARTMENT OF BUILDING SAFETY CODE ENFORCEMENT

[A] 103.1 Creation of enforcement agency. ~~The Department of Building Safety~~ Building Code Enforcement is hereby created within the jurisdiction's department known as Houston Public Works, and the official in charge thereof shall be known as the ~~code~~ building official.

[A] 104.2.1 Determination of substantially improved or substantially damaged existing buildings and structures in flood hazard areas. ~~For application for reconstruction, rehabilitation, repair, alteration, addition to or other improvement of existing buildings or structures located in flood hazard areas, the building official shall determine where the proposed work constitutes substantial improvement or repair of substantial damage. Where the building official determines that the proposed work constitutes substantial improvement or repair of substantial damage, and where required by this code, the building official shall require the building meet the requirements of Section 1612 of the International Building Code shall be designed and constructed in accordance with ASCE 24 and Chapter 19 of the City Code, whichever is more restrictive.~~

[A] 104.6 Right of entry. Where it is necessary to make an inspection to enforce the provisions of this code, or where the ~~code~~ building official has reasonable cause to believe that there exists in a structure or upon a premises a condition that is contrary to or in violation of this code that makes the structure or premises unsafe, dangerous, or hazardous, the code official is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises be unoccupied, the code official shall first make a reasonable effort to locate the owner, owner's authorized agent or other person having charge or control of the structure or premises and request entry. If entry is refused, the ~~code~~ building official shall have recourse to the remedies provided by law to secure entry.

When, *building official* has obtained a proper inspection warrant or other remedy provided by law to secure entry, no owner or occupant or any other person having charge, care or control of any building or premises shall fail or neglect, after proper request is made as herein provided, to promptly permit entry therein by the *building official* or *code official* for the purpose of inspection and examination pursuant to this code.

[A] 104.8 Liability. ~~The code official, member of the Board of Appeals, or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties. Except as otherwise provided by law, the *building official* shall not personally be liable in damages for any act or omission arising out of any official action taken to implement and enforce the provisions of this code. Additionally, except as otherwise provided by law, the *building official* shall not personally be liable in damages for any act or omission taken in the course and scope of employment. Where and to the extent consistent with the provisions of Chapter 2, Article X, of the City Code, this jurisdiction shall provide legal representation and indemnification for any suit or claim brought against the *building official* or any deputies because of acts or omissions performed in the implementation or enforcement of this code.~~

This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating, or controlling any building, structure or system or other construction for any damages to persons or property caused by defects, nor shall the code enforcement agency or the jurisdiction be held as assuming any such liability by reason of the inspections authorized by this code or any permits or certificates issued under this code.

~~**R104.8.1 Legal defense.** Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representatives of the *jurisdiction* until the final termination of the proceedings. The *building official* or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.~~

[A] 104.10 Modifications. Wherever there are practical difficulties involved in carrying out the provisions of this code, the *code official* shall have the authority to grant modifications for individual cases upon application of the owner or owner's authorized representative, provided the *code official* shall first find that special individual reason makes the strict letter of this code impractical, the modification is in compliance with the intent and purpose of this code and such modification does not lessen health, accessibility, life and fire safety, or structural requirements. The details of action granting modifications shall be recorded and entered in the files of Building Code Enforcement ~~the Department of Building Safety.~~

[A] 105.1 Required. Any owner or owner's authorized agent who intends to repair, add to, alter, relocated, demolish, or change the occupancy of a building or to repair, install, add, alter, remove, convert, or replace any electrical, gas, mechanical, or plumbing system, the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the ~~*code building official*~~ and obtain the required permit, and no person shall cause, suffer or permit the same such work to be done unless a separate permit for each building or structure has first been obtained.

~~**[A] 105.1.2 Annual permit records.** The person to whom an annual permit is issued shall keep a detailed record of *alterations* made under such annual permit. The *code official* shall have access to such records at all times, or such records shall be filed with the *code official* as designated.~~

[A] 105.2 Work exempt from permit. Exemptions from building permit requirements of this code shall not be deemed to grant exemption from permits required by other codes or ordinances, and shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any ~~other~~ codes, laws or ordinances of this jurisdiction. ~~Permits~~ Building permits shall not be required for the following:

Building:

1. ~~Sidewalks and driveways~~ Uncovered decks accessory to a one- or two-family dwelling, not more than 30 inches (762 mm) above grade and not over any basement or story below and ~~that are~~ not part of an accessible route.
2. Painting, tarping, wall papering, tiling, carpeting, cabinets, and counter tops repair and replacement, and similar finish work.

3. Temporary motion picture, television, and theater stage sets and scenery.
4. Shade cloth structures constructed for nursery or agricultural purposes, ~~and~~ not including service systems.
5. Window awnings supported by an exterior wall of Group R-3 or Group U occupancies.
6. Movable cases, counters, and partitions not over 69 inches (1,753 mm) in height.
7. Approved exemptions set out in any volume of the *Construction Code*.

Except for exempt work undertaken for, by or on the premises of the state or the federal government, building permits shall be required for work undertaken for, by or on the premises of any political subdivision or unit of government (including, but not limited to, the jurisdiction) in the same manner and to the same extent as for work performed by, for, or on the premises of other persons. The fees prescribed in this code shall be applicable to all permits issued to or for governmental agencies.

Counties are required to comply with the provisions of the *Construction Code*. Except as provided by Section 212.903 of the *Texas Local Government Code*, a county shall notify the *building official* of each work project that is undertaken. The *building official* shall, upon request and demonstration of capacity, allow a county to self-permit and self-inspect work that is performed by or for the county on county-owned buildings and facilities for which a permit is required. No fee shall be imposed hereunder for work that a county is authorized to self-permit and self-inspect.

Electrical:

~~**Repairs and maintenance:** Minor *repair* work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles.~~

~~**Radio and television transmitting stations:** The provisions of this code shall not apply to electrical equipment used for radio and television transmissions, but do apply to equipment and wiring for power supply, the installations of towers, and antennas.~~

~~**Temporary testing systems:** A permit shall not be required for the installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.~~

Gas:

1. ~~Portable heating appliance.~~
2. ~~Replacement of any minor part that does not alter approval of equipment or make such equipment *unsafe*.~~

Mechanical:

1. ~~Portable heating appliance.~~
2. ~~Portable ventilation equipment.~~
3. ~~Portable cooling unit.~~
4. ~~Steam, hot, or chilled water piping within any heating or cooling equipment regulated by this code.~~

5. ~~Replacement of any part that does not alter its approval or make it unsafe.~~
6. ~~Portable evaporative cooler.~~
7. ~~Self-contained refrigeration system containing 10 pounds (4.54 kg) or less of refrigerant and actuated by motors of 1 horsepower (746 W) or less.~~

Plumbing:

1. ~~The stopping of leaks in drains, water, soil, waste, or vent pipe; provided, however, that if any concealed trap, drainpipe, water, soil, waste, or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work, and a permit shall be obtained and inspection made as provided in this code.~~
2. ~~The clearing of stoppages or the repairing of leaks in pipes, valves, or fixtures, and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes, or fixtures.~~

[A] 105.2.1 Emergency replacements or repairs. ~~Where~~ An owner or owner's authorized agent shall submit an application for a permit to the building official for emergency equipment replacements and or repairs requiring a permit must be performed in an emergency situation, the permit application shall be submitted within no later than the next working business day after initiation of the replacement or repair to the code official.

[A] 105.3 Application for permit. To obtain a *permit*, the applicant shall first file an application therefor in writing on a form furnished by Building Code Enforcement ~~the department of building safety~~ for that purpose. Such application shall:

1. Identify and describe the work to be covered by the *permit* for which application is made.
2. Describe the land on which the proposed work is to be done by legal description, street address or similar description that will readily identify and definitely locate the proposed building or work.
3. Indicate the use and occupancy for which the proposed work is intended.
4. Be accompanied by *construction documents* and other information as required in Section 107.
5. State the valuation of total aggregate square footage of any new structure, addition(s), alteration, and the square footage of new paving, and linear feet of new sidewalks and curbs located within the right-of-way associated with the proposed work.
6. Be signed by the applicant, or the applicant's authorized agent.
7. Give such other data and information as required by the *building official*.

[A] 105.3.2 Time limitation of application. An application for which no permit is issued within 180 days following the date of application shall become inactive, and plans and other data submitted for review thereafter shall be returned to the applicant or destroyed by the code official. The code official is authorized to grant one or more extensions of time

for additional periods not to exceed 180 days each, for a maximum of two years from the date of the original application, upon written request and justifiable cause demonstrated by the applicant. If an application for permit does not result in a permit within two years after the date of original application, the permit application shall expire. In order to renew action on an application after expiration, the applicant shall submit a new permit application and plans and shall pay a new plan review fee. An application for a permit for any proposed work shall be deemed to have been inactive abandoned 180 days after the date of filing, unless such application has been pursued in good faith or a permit has been issued; except that the code official is authorized to grant one or more extensions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and justifiable cause demonstrated.

[A] 105.4 Validity of permit. Permit validity shall be governed by Section 105.4 of the Building Code. The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. The issuance of a permit based on construction documents and other data shall not prevent the code official from requiring the correction of errors in the construction documents and other data. The code official is authorized to prevent occupancy or use of a structure where in violation of this code or of any other ordinances of this jurisdiction.

[A] 105.5 Expiration. Every permit issued shall become invalid inactive on the 180th day after its issuance unless the work on the site authorized by such permit is has commenced and been inspected by a city inspector within 180 days after its issuance, or if the work authorized on the site by such permit is suspended or abandoned for a period of 180 days after the time date the work is was commenced. The building official is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.

If work has not commenced under a permit within two years after the date of issuance or is suspended or abandoned at any time for a period of two years, the permit shall expire. In order to recommence work associated with an expired permit, the permit holder shall re-permit the project and pay the full permit fee applicable for any previously uninspected portion of the original scope of work. Where the original plans with building official approval are not available for completion of field inspections, a lost plan recheck shall be submitted for building official approval. Appropriate plan review fees shall apply.

Exception: For the purpose of issuing a certificate of occupancy or a certificate of compliance, the building official may, upon request, reactivate a permit and perform a final inspection of work.

[A] 105.6 Suspension or revocation. The code building official is authorized to suspend or revoke a permit issued under the provisions of this code wherever the permit is issued in error or on the basis of incorrect, inaccurate, or incomplete information or in violation of any ordinance or regulation or any of the provisions of this code. Prior to taking such action, the building official shall provide notice to the building owner or to a tenant therein of a right to a hearing on the matter pursuant to Section 117 of the Building Code.

[A] 106.3 Examination of documents; fees. The code official shall examine or cause to be examined the submittal documents and shall ascertain by such examinations whether the construction or occupancy indicated and described is in accordance with the requirements of this code the Construction Code and other pertinent laws or ordinances.

Where plans or other data is required to be submitted in accordance with the *Construction Code*, a plan review fee shall be paid at the time of submitting construction documents for review. The plan review fees for any proposed work shall be charged as described in Section 118.1.11 of the *Building Code* and the *city fee schedule*.

When approved plans are lost or changed so as to require an additional plan review or when a plan review is required and there is no building permit required, a plan review fee shall be charged as described in Section 118.2.8 of the *Building Code* and the *city fee schedule*.

106.3.4.1 Deferred submittal plan review fees. A plan review fee shall be paid at the time of submitting construction documents for review of deferred submittal plans. The fee for any deferred submittal review shall be charged at the rate shown in the city fee schedule for a minimum permit fee plus applicable administrative fee. The plan review fees specified in this subsection are separate fees from the permit fees.

[A] 106.5 Retention of construction documents. One set of approved construction documents shall ~~may~~ be retained by the ~~code~~ building official for a period of not less than the period required for retention of public records.

[A] 107.3 Temporary power. The ~~code~~ building official is authorized to give permission to temporarily supply and use power in part of an electric installation before such installation has been fully completed and the final certificate of completion has been issued. The part covered by the temporary certificate shall comply with the requirements specified for temporary lighting, heat or power in the *Electrical Code* NFPA 70.

[A] 108.2 Schedule or permit fees. On buildings, electrical, gas, mechanical, and plumbing systems or *alterations* requiring a permit, a fee for each permit shall be paid as required in accordance with Section 118 of the *Building Code* and the schedule as established by the applicable governing authority city fee schedule.

[A] 108.3 Building permit valuations. The applicant for a permit shall provide an estimated permit value at time of application. Permit valuations shall include total value of work including materials and labor for which the permit is being issued, such as electrical, gas, mechanical, plumbing equipment, and permanent systems. If, in the opinion of the ~~code~~ building official, the valuation is underestimated on the application, the permit shall be denied unless the applicant can show detailed estimates to meet the approval of the ~~code~~ building official. Final building permit valuation shall be set by the ~~code~~ building official. The value to be used in computing the permit fee for alterations, remodeling or repairs shall be the total value of all construction work for which the permit is issued based on the current building valuation data sheet published by the International Code Council.

[A] 108.4 Work commencing before permit issuance. Any person who commences any work before obtaining the necessary permits shall be subject to an ~~additional investigation~~ fee ~~established by the code official~~ equal to the amount of the permit fee and applicable minimum investigation fees required by the *Building Code* that shall be in addition to the required permit fees.

[A] 108.6 Refunds. The ~~code~~ building official is ~~authorized to establish a refund policy~~ may authorize the refund of any fee paid hereunder that was erroneously paid or collected due to an error by a city employee. This provision shall not be applicable if the error occurred because of incorrect information provided by the applicant.

The *building official* may authorize the refund of not more than 90 percent of the amount in excess of the minimum permit fee established in Section 118.1.3 of the *Building Code* and the city fee schedule for the permit fee paid when no work has been done under a permit issued in

accordance with this code. If work has been done under the permit, no refund shall be authorized. The originally paid administrative fee and the plan review portion of the permit fee shall be nonrefundable.

The *building official* shall not authorize a refund of any fee paid except on written application filed by the original permit holder or an authorized successor in the event of the death or incapacity of the original permit holder not later than 180 calendar days after the date of fee payment.

[A] 109.3.3 ~~Reserved. Lowest floor elevation.~~ ~~For additions and substantial improvements to existing buildings in flood hazard areas, upon placement of the lowest floor, including basement, and prior to further vertical construction, the elevation documentation required in the International Building Code shall be submitted to the code official.~~

[A] 109.3.5 ~~Lath or gypsum board inspection.~~ ~~Lath and gypsum board inspections shall be made after lathing and gypsum board, interior and exterior, is in place but before any plastering is applied or before gypsum board joints and fasteners are taped and finished.~~

~~Exception:~~ ~~Gypsum board that is not part of a fire-resistance-rated assembly or a shear assembly.~~

[A] 109.3.7 Other inspections. ~~In addition to the inspections specified above, the *code building official* is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of this code and other laws that are enforced by the Department of Building Safety Building Code Enforcement.~~

109.3.10 Reinspection. A reinspection fee may be assessed for each inspection or reinspection when an inspector arrives to perform the work and finds the portion of work for which inspection is called is not complete or when corrections called for in a previous inspection report have not been made.

This section is not to be interpreted as requiring inspection fees the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or reinspection.

The code official may assess reinspection fees when the inspection record card is not posted or otherwise available on the work site, or when the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, or for deviating from plans requiring the approval of the *building official*.

To obtain a reinspection, the applicant shall make a request and pay the reinspection fee in accordance with Section 118 of the *Building Code* the city fee schedule.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

[A] 110.1 Altered area use and occupancy classification change. Altered areas of a building and relocated buildings, or portion thereof, such as an individual business lease space, shall not be used or occupied, and change in the existing use or occupancy classification of a building or portion thereof shall not be made until the *code building official* has issued a separate certificate of occupancy for each lease space therefor as provided herein. For purposes of this section, a *lease space* means a leasehold or tenancy held or occupied by an individual or entity for its sole

use and may include one or more rooms. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction.

Exceptions:

1. Certificates of occupancy are not required for work exempt from permits under Section 105.2.
2. One- and two-family dwellings, Group U occupancies, and individual dwelling units or sleeping units do not require a certificate of occupancy.

[A] 110.2 Certificate issued. After the *code official* inspects the building and does not find violations of the provisions of this code or other laws that are enforced by ~~the Department of Building Safety~~ Building Code Enforcement, the ~~code~~ building official shall issue a certificate of occupancy that shall contain the following:

1. The building *permit* number or project number.
2. The address of the structure.
3. The name and address of the owner, and where applicable, the tenant and ~~or the~~ owner's authorized agent.
4. A description of that portion of the structure for which the certificate is issued.
5. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code for the occupancy and division of occupancy and the use for which the proposed occupancy is classified.
6. The name of the *building official*.
7. The edition of the code under which the *permit* was issued.
8. The use and occupancy, ~~in accordance with the provisions of the International Building Code~~ of the building or portion thereof.
9. The type of construction as defined in Chapter 6 of the ~~International Building Code~~.
10. The design *occupant load* and any impact the *alteration* has on the design occupant load of the area not within the scope of the work.
11. ~~If a fire alarm protection systems is are provided, and whether the fire alarm protection systems is are required.~~
12. If a fire sprinkler system is provided, the type of system provided, and whether the fire sprinkler system is required.
13. Any special stipulations and conditions of the building permit.

[A] 110.4 Revocation. The ~~code~~ building official is authorized to, in writing, suspend or revoke a certificate of occupancy ~~or completion~~ issued under the provisions of this code, after notice of a right to a hearing on the matter pursuant to Section 117 of the Building Code has been delivered to the owner or occupant and the applicable processes thereunder have been performed, wherever the certificate is issued in error or on the basis of incorrect information supplied, or where it is determined that the building or structure or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.

110.5 Posting. The owner or occupant shall post the certificate of occupancy in a conspicuous place on the premises, and it shall not be removed except by the *building official*.

[A] 112.1 General. ~~In order to~~ Except as provided below for mechanical and plumbing issues, the General Appeals Board, in accordance with the provisions of the *Building Code*, shall hear and decide appeals of orders, decisions, or determinations made by the ~~code~~ building official relative to the application and interpretation of this code, ~~there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business.~~

[A] 112.2 Mechanical. The Mechanical Code Review Board, in accordance with the provisions of the *Mechanical Code*, shall hear and decide appeals of orders, decisions or determinations made by the *building official* relative to the application and interpretation of mechanical installations and repair associated with this code. ~~Limitations on authority.~~ An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equally good or better form of construction is proposed. The board shall not have authority to waive requirements of this code.

[A] 112.3 Plumbing. The Plumbing Code Review Board, in accordance with the provisions of the *Plumbing Code*, shall hear and decide appeals of orders, decisions or determinations made by the *building official* relative to the application and interpretation of fuel gas and plumbing associated with this code. ~~Qualifications.~~ The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.

[A] 113.1 Unlawful acts. It shall be unlawful for any person, firm, or corporation to *repair*, alter, extend, add, move, remove, demolish, or change the occupancy of any building or equipment regulated by this code or cause same to be done in conflict with or in violation of any of the provisions of this code.

Where no specific penalty is otherwise provided in this code, the violation of any provision of this code shall constitute a misdemeanor punishable upon conviction by a fine of not less than \$500.00 nor more than \$2,000.00. Each day that any violation continues shall constitute and be punishable as a separate offense. Where any such conduct constitutes a violation of state penal law, the offense shall be punishable as provided in the applicable state law. In prosecutions under this code, the various provisions hereof that are designated as an "exception" or "exceptions" shall not be treated as exceptions within the meaning of Section 2.02 of the *Texas Penal Code*, and, instead, they shall constitute defenses to prosecution within the meaning of Section 2.03 of the *Texas Penal Code*.

[A] 113.4 Violation penalties. Any person who violates a provision of this code or fails to comply with any of the requirements thereof or who *repairs* or alters or changes the occupancy of a building or structure in violation of the approved construction documents or directive of the ~~code~~ *building official* or of a permit or certificate issued under the provisions of this code shall be subject to penalties as prescribed ~~by law in~~ Section 113.1.

[A] 114.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, the owner's authorized agent or ~~to~~ the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work will be permitted to resume.

At issuance of a stop work order, the person performing the work and the permit holder shall be given notice of a right to a hearing on the matter by the *building official*, who shall deliver the notice to the persons performing the work, if present at the site, or otherwise conspicuously post the notice at the site. Upon request from the property owner, the owner's authorized agent or the person doing the work, a hearing shall be held within three business days of receiving the

stop work order, unless the permit holder or person who was doing the work requests an extension of time. Any stop work order that has been issued shall remain in effect pending any hearing that has been requested unless the *building official* withdraws the stop work order.

[A] 115.1 Conditions. Buildings, structures or equipment that are or hereafter become *unsafe*, shall be taken down, removed or made safe as the *code official* deems necessary and as provided for in this code. **Unsafe buildings or structures.** All buildings or structures regulated by this code that are structurally inadequate or unsafe, or not provided with adequate egress, or that constitute a fire hazard, or are otherwise dangerous to human life are, for the purposes of this section, unsafe buildings or structures. Any use of buildings or structures constituting a hazard to safety, health, or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster, damage, or abandonment is, for the purposes of this section, an unsafe use. Parapet walls, cornices, spires, towers, tanks, statuary and other appendages or structural members that are supported by, attached to, or a part of a building and that are in deteriorated condition or otherwise unable to sustain the design loads that are specified in this code are hereby designated as unsafe building appendages.

All such unsafe buildings, structures or appendages shall be abated, repaired, rehabilitated, demolished, or removed in accordance with the procedures set forth in the *Property Maintenance Code* and Chapter 10, Articles VIII and X of the *City Code*.

In matters of fire safety design and construction, including, but not limited to, egress (corridors, exit numbers, stairs, fire escapes and fire escape signs), wall and ceiling finish, enclosure of vertical shafts, basement access, standpipes and occupancy separation, a building shall not be deemed to be a fire hazard if it is in compliance with the most restrictive of:

1. The provisions of the Appendix D (Life-Safety Requirements for Existing Buildings) of this code, if applicable;
2. The building code that was applicable when the building was constructed; or
3. If the occupancy classification of the building or a portion thereof has changed since it was constructed, then the applicable building code that was in effect when the occupancy classification was changed.

Any building not situated within the jurisdiction at the time of its construction or change of occupancy classification shall be governed by the design and construction code and related laws applicable in the jurisdiction in which it was constructed at the time of its construction or change of occupancy and by the provisions of Appendix D (Life-Safety Requirements for Existing Buildings) of the this code. To the extent of any conflict among the requirements of any applicable codes, the most restrictive will apply. However, compliance with the aforesaid provisions shall not be deemed to excuse life-threatening defects of maintenance, sanitation, repair of casualty damage, security from unauthorized entry, structural stability, electrical systems, gas systems, plumbing systems, heating or cooling systems or other building systems.

Exception: For a building under construction or contract at the time of its annexation by the jurisdiction, see the Annexation Ordinance (Ordinance No. 78-2672), a copy of which is published in the preamble of this volume.

[A] 115.2 Record. The *code official* shall cause a report to be filed on an *unsafe* condition. The report shall state the occupancy of the structure and the nature of the *unsafe* condition.

[A] 115.3 Notice. If an *unsafe* condition is found, the *code official* shall serve on the owner, the owner's authorized agent or person in control of the structure a written notice that describes the condition deemed *unsafe* and specifies the required *repairs* or improvements to be made to abate the *unsafe* condition, or that requires the *unsafe* building to be demolished within a stipulated

time. Such notice shall require the person thus notified to declare immediately to the ~~code official~~ acceptance or rejection of the terms of the order.

~~[A] 115.4 Method of service.~~ Such notice shall be deemed properly served if a copy thereof is delivered to the owner or the owner's authorized agent personally; sent by certified or registered mail addressed to the owner or the owner's authorized agent at the last known address with the return receipt requested; or delivered in any other manner as prescribed by local law. If the certified or registered letter is returned showing that the letter was not delivered, a copy thereof shall be posted in a conspicuous place in or about the structure affected by such notice. Service of such notice in the foregoing manner upon the owner's authorized agent or upon the person responsible for the structure shall constitute service of notice upon the owner.

~~[A] 115.5 Restoration.~~ The building or equipment determined to be *unsafe* by the ~~code official~~ is permitted to be restored to a safe condition. To the extent that *repairs, alterations, or additions* are made or a *change of occupancy* occurs during the restoration of the building, such *repairs, alterations, additions, or change of occupancy* shall comply with the requirements of this code.

SECTION 118

PRIVATE PLAN REVIEW AND INSPECTION SERVICES

118.1 Private plan review and inspection services shall be allowed as specified in Sections 119 of the *Building Code* and Section 115 of the *Residential Code*.

CHAPTER 2

DEFINITIONS

201.3 Specific construction and Terms defined in other codes. Where specific rules of construction or terms are not addressed or defined in this code and are addressed or defined in the City Code or another volume of the other International Construction Codes, such terms or specific constructions herein shall have the meanings ascribed to them in those codes or other volumes, as applicable to the construction and proposed scope of work hereunder.

SECTION 202

GENERAL DEFINITIONS

{Editorial Note: ALL PORTIONS OF SECTION 202 NOT SHOWN REMAIN AS SET FORTH IN THE 2015 IEBC.}

[A] ALTERATION. Any construction or renovation to an existing structure other than a *repair or addition*. Also, a change to an existing building, or an electrical, gas, mechanical or plumbing system that involves an extension, addition or change to the arrangement, type or purpose of the original installation that requires a permit. Alterations are classified as Level 1, Level 2 and Level 3 in this code.

AUTHORITY HAVING JURISDICTION. The director of Houston Public Works. This definition shall include the authority having jurisdiction's duly authorized representative.

BUILDING CODE. The City of Houston Building Code, as adopted and amended by this jurisdiction.

BUILDING OFFICIAL. The director of Houston Public Works or the duly authorized representative designated by the director to act as the chief construction code enforcement official of the jurisdiction; also known as *chief building official*. The term also includes the Houston Airport Systems building official who may be designated by the building official to perform *Construction Code* permitting and enforcement activities on Houston Airport Systems premises.

CERTIFICATE OF COMPLIANCE. A certificate stating that materials and products meet specified standards or that the scope of work under a specific permit was done in compliance with approved construction documents. Any reference in the *Construction Code* to a "CC", certificate of completion, or a certificate of inspection issued by this jurisdiction, is a reference to a certificate of compliance as defined herein.

CITY CODE. The Code of Ordinances, City of Houston, Texas.

CITY FEE SCHEDULE. The schedule of fees charged by the city for various permits, licenses, authorizations and services, which is maintained on the city's website.

[A] CODE OFFICIAL. The officer or other designated authority charged with the administration and enforcement of this code.

CODE OFFICIAL. The Houston Fire Department and Building Code Enforcement employees, including but not limited to, plan analysts, field inspectors, and other technical staff charged with the administration and enforcement of this code as specifically delegated by the *authority having jurisdiction*. The *code official* is authorized to approve designs, construction, equipment, materials, installations, processes, procedures, practices, and other duties necessary to verify and document compliance with the *Houston Construction Code*, the *Houston Fire Code*, Ordinances, and other laws and policies as specifically delegated by the *chief building official*, *fire chief*, and the *authority having jurisdiction*.

CONSTRUCTION CODE. Has the meaning ascribed in Section 1-2 of the *City Code*.

ELECTRICAL CODE. The *City of Houston Electrical Code*, as adopted and amended by this *jurisdiction*.

EXISTING BUILDING CODE. The *City of Houston Existing Building Code*, as adopted and amended by this *jurisdiction*.

FIRE CODE. The *City of Houston Fire Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL BUILDING CODE. Any reference herein to the *International Building Code* shall be construed as referring to the *City of Houston Building Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL ENERGY CONSERVATION CODE. Any reference herein to the *International Energy Conservation Code* shall be construed as referring to the *City of Houston Residential Energy Conservation Code* or the *City of Houston Commercial Energy Conservation Code*, both as adopted and amended by this *jurisdiction*.

INTERNATIONAL EXISTING BUILDING CODE. Any reference herein to the *International Existing Building Code* shall be construed as referring to the *City of Houston Existing Building Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL FIRE CODE. Any reference herein to the *International Fire Code* shall be construed as referring to the *City of Houston Fire Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL FUEL GAS CODE. Any reference herein to the *International Fuel Gas Code* shall be construed as referring to the *City of Houston Plumbing Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL MECHANICAL CODE. Any reference herein to the *International Mechanical Code* shall be construed as referring to the *City of Houston Mechanical Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL PLUMBING CODE. Any reference herein to the *International Plumbing Code* shall be construed as referring to the *City of Houston Plumbing Code*, as adopted by this *jurisdiction*.

INTERNATIONAL PROPERTY MAINTENANCE CODE. Any reference herein to the *International Property Maintenance Code* shall be construed as referring to Chapter 10, Article IX, of the *City Code*, which is also known as the *Houston Building Standards Code*.

INTERNATIONAL RESIDENTIAL CODE. Any reference herein to the *International Residential Code* shall be construed as referring to the *City of Houston Residential Code*, as adopted and amended by this jurisdiction.

JURISDICTION. The governmental unit that has adopted this code under due legislative authority.

MECHANICAL CODE. The *City of Houston Mechanical Code*, as adopted and amended by this jurisdiction.

ONE- AND TWO-FAMILY DWELLING. An individual free-standing structure containing not more than two *dwelling units*, also referred to as a *dwelling*, *duplex* or single-family dwelling depending on the number of *dwelling units* within.

PLUMBING CODE. The *City of Houston Plumbing Code*, as adopted and amended by this jurisdiction.

PROPERTY MAINTENANCE CODE. Chapter 10, Article IX, of the *City Code* relating to abatement of dangerous buildings, also known as the *Houston Building Standards Code*, as adopted and amended by this jurisdiction.

[A] REPAIR. The reconstruction or renewal of any part of an *existing building* for the purpose of its maintenance or to correct damage using like for like materials.

RESIDENTIAL CODE. The *City of Houston Residential Code*, as adopted and amended by this jurisdiction.

TEXAS ACCESSIBILITY STANDARDS (TAS). The accessibility standards applicable to buildings and facilities constructed within the state of Texas as promulgated by the Texas Department of Licensing and Regulation pursuant to *Texas Government Code* Chapter 469.

CHAPTER 3

PROVISIONS FOR ALL COMPLIANCE METHODS

[BS] 301.1.4 Seismic evaluation and design procedures. The seismic evaluation and design shall be based on the procedures specified in Chapter 16 of the ~~International Building Code~~ or ASCE 41. ~~The procedures contained in Appendix A of this code shall be permitted to be used as specified in Section 301.1.4.2.~~

302.6 Airport sound attenuation. All alterations, repairs, additions, relocations of structures and changes of occupancy shall comply with appropriate provisions of the *Construction Code* and Chapter 9, Article VI, of the *City Code* to achieve an interior sound level of 45 dBA for the scope of work proposed.

302.7 Lake Houston structures. All alterations, repairs, additions, relocations of structures and changes of occupancy shall comply with appropriate provisions of the *Construction Code*, Chapter 62 of the *Building Code*, and Chapter 23 of the *City Code* for the scope of work proposed.

CHAPTER 4

PRESCRIPTIVE COMPLIANCE METHOD

[BS] I Flood hazard areas. See Chapter 19 of the *City Code*. For buildings and structures in ~~flood hazard areas established in Section 1612.3 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable, any addition that constitutes substantial improvement of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.~~

~~For buildings and structures in flood hazard areas established in Section 1612.3 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable, any additions that do not constitute substantial improvement of the existing structure are not required to comply with the flood design requirements for new construction.~~

[BS] 403.2 Flood hazard areas. See Chapter 19 of the *City Code*. For buildings and structures in ~~flood hazard areas established in Section 1612.3 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable, any alteration that constitutes substantial improvement of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.~~

~~For buildings and structures in flood hazard areas established in Section 1612.3 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable, any alterations that do not constitute substantial improvement of the existing structure are not required to comply with the flood design requirements for new construction.~~

[BS] 403.8 Roof diaphragms resisting wind loads in high-wind regions. Where the intended alteration requires a permit for reroofing and involves removal of roofing decking materials from more than 50 percent of the roof diaphragm of a building or section of a building located where the ultimate design wind speed is greater than 115 mph (51 m/s) in accordance with Figure Section 1609.3(4) of the *International Building Code* or in a special wind region as defined in Section 1609 of the *International Building Code*, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in Section 1609 of the *International Building Code*, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in Section 1609 of the *International Building Code*.

[BS] 404.5 Flood hazard areas. Shall comply with ASCE 24 and Chapter 19 of the *City Code*, whichever is more restrictive. For buildings and structures in ~~flood hazard areas established in Section 1612.3 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable, any repair that constitutes substantial improvement or repair of substantial damage of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.~~

~~For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any repairs that do not constitute substantial improvement or repair of substantial damage of the existing structure are not required to comply with the flood design requirements for new construction.~~

[BS] 408.3 Flood hazard areas. ~~See Chapter 19 of the City Code. Within flood hazard areas established in accordance with Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, where the work proposed constitutes substantial improvement, the building shall be brought into compliance with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable:~~

Exception: ~~Historic buildings need not be brought into compliance that are:~~

- ~~1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places;~~
- ~~2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or~~
- ~~3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.~~

410.1 Scope. ~~The Accessibility provisions for the of Sections 410.1 through 410.9 apply to maintenance, change of occupancy, additions and alterations to existing buildings, including those identified as historic buildings, shall be in accordance with Chapter 11 of the Building Code.~~

{Editorial Note: THE REMAINDER OF THIS SECTION REMAINS AS SET FORTH IN THE 2015 IEBC AND IS NOT ADOPTED BY THIS JURISDICTION.}

CHAPTER 6

REPAIRS

[BS] 601.3 Flood hazard areas. ~~See Chapter 19 of the *City Code*. In flood hazard areas, repairs that constitute *substantial improvement* shall require that the building comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.~~

605.1 General. Repairs shall be done in a manner that maintains the level of accessibility provided in accordance with the *Texas Accessibility Standards*.

[BS] 606.2.4 Flood hazard areas. ~~See Chapter 19 of the *City Code*. In *flood hazard* areas, buildings that have sustained *substantial damage* shall be brought into compliance with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.~~

609.2 Water closet replacement. The maximum water consumption flow rates and quantities for all replaced water closets shall be 4.6 1.28 gallons (~~64.85~~ L) per flushing cycle.

Exception: ~~Blowout-design water closets [3.5 gallons (13 L) per flushing cycle].~~

CHAPTER 7

ALTERATIONS—LEVEL 1

[BS] 701.3 Flood hazard areas. See Chapter 19 of the *City Code*. ~~In flood hazard areas, alterations that constitute substantial improvement shall require that the building comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.~~

705.1 General. A facility that is altered shall comply with the applicable provisions in Section 705.1.1 through 705.1.14, and Chapter 11 of the *International Building Code* unless it is *technically infeasible*. ~~Where compliance with this section is *technically infeasible*, the alteration shall provide access to the maximum extent that is technically feasible.~~

{Editorial Note: REMAINDER OF SECTION 705 SHALL REMAIN AS SET FORTH IN THE 2015 IEBC AND IS NOT ADOPTED BY THIS JURISDICTION.}

[BS] 707.3.2 Roof diaphragms resisting wind loads in high-wind regions. Where roofing ~~decking materials are~~ removed from more than 50 percent of the roof diaphragm or section of a building located where the ultimate design wind speed, V_{ult} , determined in accordance with ~~Figure Section~~ 1609.3(4) of the *International Building Code*, is greater than 115 mph (51 m/s) or in a special wind region, as defined in Section 1609 of the *International Building Code*, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in the *International Building Code*, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the *International Building Code*.

CHAPTER 8

ALTERATIONS—LEVEL 2

803.6 Fire-resistance rating. Where approved by the ~~code building~~ official, buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the *International Building Code* has been added, and the building is now sprinklered throughout, the required fire-resistance ratings of building elements and materials shall be permitted to meet the automatic sprinkler system requirements of the current building code. The building is required to meet the other applicable requirements of the *International Building Code*.

Plans, investigation and evaluation reports, and other data shall be submitted indicating which building elements and materials the applicant is requesting the ~~code building~~ official to review and approve for determination of applying the current building code fire-resistance ratings. Any special construction features, including fire-resistance-rated assemblies and smoke-resistive assemblies, conditions of occupancy, means-of-egress conditions, fire code deficiencies, approved modifications or approved alternative materials, design and methods of construction, and equipment applying to the building that impact required fire-resistance ratings shall be identified in the evaluation reports submitted.

804.2.1.1 Supplemental automatic sprinkler system requirements. Where the *work area* on any floor exceeds 50 percent of that floor area, Section 804.2.1 shall apply to the entire floor on which the *work area* is located.

Exception: ~~Occupied tenant spaces that are entirely outside the work area.~~

805.6 Dead-end corridors. Dead-end corridors in any *work area* shall not exceed ~~35~~ 20 feet (40 ~~670~~ 6096 mm).

Exceptions:

1. Where dead-end corridors of greater length are permitted by the *International Building Code*.
- ~~2. In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be 50 feet (15 240 mm) in buildings equipped throughout with an automatic fire alarm system installed in accordance with the *International Building Code*.~~
- 3.2. In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be ~~70~~ 50 feet (~~21,356~~ 15,240 mm) in buildings equipped throughout with an automatic sprinkler system installed in accordance with the *International Building Code*.
- 4.3. In other than Group A and H occupancies, the maximum length of an existing, newly constructed, or extended dead-end corridor shall not exceed 50 feet (15 240 mm) on floors equipped with an automatic sprinkler system installed in accordance with the *International Building Code*.

805.12 Stair construction. All required stairs shall have a minimum run of 9 inches (229 mm) and a maximum rise of 8 inches (203 mm) and shall have a minimum width of 30 inches (762 mm) exclusive of handrails. Every stairway shall have at least one handrail. A landing having a minimum 30-inch (762 mm) run in the direction of travel shall be provided at each point of access to the stairway.

Exception: Fire escapes as provided for in this section.

Exterior stairs shall be of noncombustible construction.

Exception: On buildings of Types III, IV and V construction, provided the exterior stairs are constructed of wood of not less than 2-inch (51 mm) nominal thickness.

806.2 Stairways and escalators in existing buildings. In *alterations* where an escalator or stairway is added where none existed previously, an accessible route shall be provided in accordance with Sections 1104.4 and 1104.5 of the *International Building Code*.

CHAPTER 9

ALTERATIONS—LEVEL 3

902.1.2 Elevators. Where there is an elevator or elevators for public use, at least one elevator serving the *work area* shall comply with this section. Existing elevators with a travel distance of 25 feet (7,620 mm) or more above or below the main floor or other level of a building ~~and intended to serve the needs of emergency personnel for fire fighting or rescue purposes~~ shall be provided with emergency operation in accordance with ASME A17.3. New elevators shall be provided with Phase I emergency recall operation and Phase II emergency in-car operation in accordance with ASME A17.1.

CHAPTER 10

CHANGE OF OCCUPANCY

1001.3 Certificate of occupancy required. A certificate of occupancy shall be issued where a *change of occupancy* occurs that results in a different occupancy classification as determined ~~by~~ according to the ~~International Building Code~~.

1012.8 Accessibility. *Existing buildings* that undergo a change of group or occupancy classification shall comply with Chapter 11 of the *Building Code* ~~this section~~.

Exception: ~~Type B dwelling or sleeping units required by Section 1107 of the *International Building Code* are not required to be provided in existing buildings and facilities undergoing a *change of occupancy* in conjunction with less than a Level 3 alteration.~~

CHAPTER 11

ADDITIONS

[BS] 1103.5 Flood hazard areas. Additions and foundations in flood hazard areas shall comply with Chapter 19 of the *City Code* and the *Infrastructure Design Manual* and with the following requirements whichever is more restrictive:

1. For horizontal additions that are structurally interconnected to the existing building:
 - 1.1 If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the ~~International Building Code~~, or Section R322 of the ~~International Residential Code~~, as applicable.
 - 1.2 If the addition constitutes substantial improvement, the existing building and the addition shall comply with Section 1612 of the ~~International Building Code~~, or Section R322 of the ~~International Residential Code~~, as applicable.
2. For horizontal additions that are not structurally interconnected to the existing building:
 - 2.1 The addition shall comply with Section 1612 of the ~~International Building Code~~, or Section R322 of the ~~International Residential Code~~, as applicable.
 - 2.2 If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the ~~International Building Code~~, or Section R322 of the ~~International Residential Code~~, as applicable.
3. For vertical additions and all other proposed work that, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the ~~International Building Code~~, or Section R322 of the ~~International Residential Code~~, as applicable.
4. For a raised or extended foundation, if the foundation work and all other proposed work, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the ~~International Building Code~~, or Section R322 of the ~~International Residential Code~~, as applicable.
5. For a new foundation or replacement foundation, the foundation shall comply with Section 1612 of the ~~International Building Code~~ or Section R322 of the ~~International Residential Code~~, as applicable.

SECTION 1107

AIRPORT SOUND ATTENUATION

1107.1 Minimum requirements. Additions to existing buildings required to comply with airport sound attenuation requirements shall conform to Chapter 9, Article VI, of the *City Code* and the *Building Code* to achieve an interior sound level of not more than 45 dBA.

SECTION 1108
LAKE HOUSTON STRUCTURES

1108.1 Minimum requirements. Additions to existing buildings constructed in or on Lake Houston shall conform to the provisions of Chapter 62 of the *Building Code* and Chapter 23 of the *City Code*, whichever is more restrictive.

CHAPTER 12

HISTORIC BUILDINGS

1201.1 Scope. It is the intent of this chapter to provide means for the preservation of *historic buildings*. Historical buildings shall comply with the provisions of this chapter relating to their *repair, alteration, relocation and change of occupancy*. Repairs, alterations, and additions necessary for the preservation, restoration, rehabilitation or continued use of a building or structure may be made with conformance to all the requirements of this code when authorized by the building official, provided:

1. The building or structure has been designated as having special historical or architectural significance by the city council of this jurisdiction as a landmark or is a contributing structure within a historic district as designated by the city council of this jurisdiction. The foregoing designations shall be as provided in Chapter 33, Article VII, of the City Code.
2. Any unsafe conditions described in this code are corrected.
3. The restored building or structure will be no more hazardous based on life safety, fire safety, and sanitation than the existing building.

[BS] 1201.4 Flood hazard areas. See Chapter 19 of the City Code. ~~In flood hazard areas, if all proposed work, including repairs, work required because of a change of occupancy, and alterations, constitutes substantial improvement, then the existing building shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.~~

Exception: ~~If an historic building will continue to be an historic building after the proposed work is completed, then the proposed work is not considered a substantial improvement. For the purposes of this exception, an historic building is:~~

- ~~1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places;~~
- ~~2. Determined by the Secretary of the U.S. Department of Interior to contribute to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or~~
- ~~3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.~~

1205.2 Building area. The allowable floor area for *historic buildings* undergoing a *change of occupancy* shall ~~be permitted to exceed by 20 percent the allowable areas specified in~~ comply with Chapter 5 of the International Building Code.

CHAPTER 13

RELOCATED OR MOVED BUILDINGS

1301.2 Conformance. ~~The building shall be safe for human occupancy as determined by the International Fire Code and the International Property Maintenance Code. Any repair, alteration, or change of occupancy undertaken within the moved structure shall comply with the requirements of this code applicable to the work being performed. Any field-fabricated elements shall comply with the requirements of the International Building Code or the International Residential Code as applicable. Relocated or moved housing shall comply with Chapter 10, Article III, of the City Code and be brought into compliance with all applicable Construction Code requirements as for new construction for the designated occupancy within 150 calendar days after the building was moved onto the property. The issuance of any permit by the jurisdiction shall not be construed to extend the time to bring the building into compliance with the Construction Code beyond 150 calendar days after the building was moved onto the property.~~

Relocated or moved buildings and housing outside the scope of the *Houston Residential Code* shall comply with the *Building Code* for new construction.

Exception: Relocated or moved buildings complying with Chapter 10, Article VI, of the City Code and constructed under the Texas Department of Licensing and Regulation (TDLR) Industrialized Housing and Buildings (IHB) Program.

[BS] 1302.6 Flood hazard areas. If relocated or moved into a flood hazard area, structures shall comply with Chapter 19 of the *City Code*, the *Infrastructure Design Manual*, and Section 1612 of the ~~International Building Code~~, or Section R322 of the ~~International Residential Code~~, as applicable, whichever is more restrictive.

CHAPTER 14

PERFORMANCE COMPLIANCE METHODS

{Editorial Note: THIS CHAPTER IS NOT ADOPTED BY THIS JURISDICTION AND REMAINS AS SET FORTH
IN THE 2015 IEBC.}

CHAPTER 15

CONSTRUCTION SAFEGUARDS

{Editorial Note: THIS CHAPTER IS NOT ADOPTED BY THIS JURISDICTION. SAFETY DURING CONSTRUCTION SHALL BE GOVERNED BY SECTION 33 OF THE IBC.}

CHAPTER 16

REFERENCED STANDARDS

{Editorial Note: PORTIONS OF THIS CHAPTER NOT SHOWN SHALL REMAIN AS SET FORTH IN THE 2015 IEBC.}

ASME

American Society of Mechanical Engineers
3 Park Avenue
New York, NY 10016

Standard Reference number	Title	Referenced in code section number
A17.3— 2012 <u>2018</u>	Safety Code for Existing Elevators and Escalator	902.1.2

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

Standard Reference number	Title	Referenced in code section number
70— 2014	National Electrical Code	107.3, 119.6 , 120.2 , 120.4 , 301.2, 202 , 607.1.1, 607.1.2, 607.1.3, 607.1.4, 607.1.5, 808.1, 808.3.4, 808.3.7, 1008.1, 1008.2, 1008.3, 1008.4, <u>Ch. 16</u>

APPENDIX D

LIFE-SAFETY REQUIREMENTS FOR EXISTING BUILDINGS

SECTION D101

GENERAL

D101.1 Purpose. The purpose of this appendix is to provide a reasonable degree of safety to persons occupying existing buildings by providing for alterations to such existing buildings that do not conform with the minimum requirements of this code. This appendix shall apply to and the term “existing building” shall be construed to mean any building existing within the corporate limits of the jurisdiction on January 1, 1986, and any building annexed into the corporate limits after that date.

D101.2 Compliance program. The owner of any existing building found to be in noncompliance with the requirement for a certificate of occupancy may be cited under this code and required to secure a certificate of compliance within 90 days after the date of citation. The owner of an existing building annexed into the jurisdiction shall apply for inspection within one year from the date of annexation. The *building official* shall determine the relative hazard category of each application and shall schedule inspections starting with the highest hazard category associated with the buildings occupancy as identified by Table D101.2.

In situations where the jurisdiction or any other regulatory authority requires a valid certificate of occupancy prior to licensing a use and no certificate of occupancy was issued at the time of construction, a Life-Safety Compliance Certificate shall satisfy the requirements for an existing building. Inspections that are required for permitting or licensing shall be given priority over other inspections provided that the applicant advises the *building official* of the need. An application for inspection under this appendix chapter shall be regarded as an application for a certificate of occupancy for purposes of Section 10-3.1 of the *City Code*, and each application must be accompanied by the affidavit specified therein.

TABLE D101.2
HAZARD CATEGORIES

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	Group A, Divisions 1 and 2; Group E; Group I; Group H; Divisions 1 and 2.
2	Group A, Divisions 3, 4, and 5.
3	Group R, Divisions 1 and 2; Group B, dining and drinking establishments; Group H other than Divisions 1 and 2.
4 (Lowest Hazard)	Group B other than dining and drinking establishments and Groups F, M, and S.

The *building official* shall notify the building owner or the owner’s agent of a scheduled inspection at least 30 days in advance. Within 15 days following notification of the inspection date, the owner or agent shall pay the applicable fees established in Section 118 of the *Building Code* and the city fee schedule. Following the inspection, the *building official* shall issue a Life-Safety Compliance Certificate if there are no deficiencies. Where deficiencies are found, the owner or

agent shall be advised in writing of the nature of the observed deficiencies that require correction. Such written notice shall not be construed to excuse the existence of any defects that may not have been observed or noted by the inspector, and it shall be the duty of the owner to determine and correct all violations of this appendix . It shall be the duty of the owner or agent to bring the building into full compliance with this appendix chapter within six months from the date that notice is given of deficiencies noted in the inspection except to the extent that an extension of time has been granted as provided in Section D109.

Promptly after the *building official's* receipt of notice from the owner that the building is in full compliance with this appendix chapter, the *building official* shall inspect the building. Upon confirmation that the building is in full compliance with this appendix chapter, the *building official* shall issue a Life-Safety Compliance Certificate for the building.

D101.3 Unsafe or hazardous conditions. Any condition in a building or building system, including, but not limited to, electrical, mechanical, and plumbing systems, that is found to be unsafe, unsanitary or hazardous during a life-safety compliance inspection shall be corrected as a part of the owner's compliance plan.

D101.4 Alternate materials and methods. Alternate materials and methods may be used, provided such materials or methods are found by the *building official* to be, for the purpose intended, at least the equivalent of that prescribed in this chapter in suitability, strength, effectiveness, fire resistance, durability and safety. The *building official* may permit alternates in conformance with Section 104.11.

D101.5 Dangerous buildings. The provisions of this appendix chapter shall not be construed to authorize the maintenance, use, or keeping of any building in such condition that it constitutes a dangerous building under Chapter 10, Article IX, of the *City Code* (the *Houston Building Standards Code*), or to excuse or extend time given for compliance with any order issued thereunder by the hearing officer.

SECTION D102

EXITS

D102.1 Number of means of egress. Every floor above the first story used for human occupancy shall have at least two separate means of egress, one of which may be an exterior fire escape complying with Section D102.4. Subject to the approval of the *building official*, an approved exit ladder device may be used in lieu of a fire escape when the construction features or location of the building on the property makes the installation of a fire escape impracticable.

Exception: In all occupancies, second stories with an occupant load of 10 or less may have one means of egress.

An exit ladder device, when used in lieu of a fire escape, shall conform to the provisions in Section D102.7. The use of an exit ladder device shall be permitted where all the following conditions apply:

1. The device shall serve an occupant load of 10 or fewer, a single dwelling, or a guest room.
2. The building does not exceed three stories in height.
3. Access to the device is adjacent to an opening as specified for emergency egress or rescue from a balcony.
4. The device, when operated, shall not pass in front of any building opening below the unit being served.

5. The means of activating the device for the ladder is accessible only from the opening or balcony served, and
6. The device shall be installed so that it will not cause a person using it to be within 6 feet (1829 mm) of exposed electrical wiring.

D102.2 Stair construction. All required stairs shall have a minimum run of 9 inches (229 mm) and a maximum rise of 8 inches (203 mm) and shall have a minimum width of 30 inches (762 mm) exclusive of handrails. Every stairway shall have at least one handrail. A landing having a minimum 30-inch (762 mm) run in the direction of travel shall be provided at each point of access to the stairway.

Exception: Fire escapes as provided for in this section.

Exterior stairs shall be of noncombustible construction.

Exception: On buildings of Type III, IV and V construction, provided the exterior stairs are constructed of wood not less than 2-inch (51 mm) nominal thickness.

D102.3 Corridors. Corridors serving as an exit for an occupant load of 30 or more shall have walls and ceilings of not less than one-hour fire-resistive construction as required by this code. Existing walls surfaced with wood lath and plaster in good condition or ½-inch (12.7 mm) gypsum wallboard or openings with fixed wired glass set in metal frames are permitted for corridor walls and ceilings and occupancy separations when approved. Doors opening into such corridors shall be protected by 20-minute fire assemblies or solid wood doors not less than 1¾-inches (45 mm) thick. Where the existing frame will not accommodate a 1¾-inch thick (45 mm) door, a 1⅝-inch thick (35 mm) solid bonded wood-core door or equivalent insulated steel door shall be permitted. Except for Group I occupancy patient rooms, treatment rooms, and emergency rooms, doors shall be self-closing or automatic closing by smoke detection. Transoms and openings other than doors from corridors to rooms shall comply with Section 714 of the *Building Code* or be covered with a minimum of ½-inch (12.7 mm) gypsum wallboard or equivalent material on the room side.

Exception: Existing corridor walls, ceilings, and opening protection not in compliance with D102.3 above may be continued when such buildings are protected with an approved automatic sprinkler system throughout the floor or when such existing corridors are at least 10 feet (3048 mm) or more in width.

D102.4 Fire escapes.

D102.4.1 Use as required exit. Existing fire escapes that, in the opinion of the *building official*, comply with the intent of this section may be used as one of the required exits. The location and anchorage of fire escapes shall be of an approved design and construction acceptable to the *building official*.

D102.4.2 General requirements. Fire escapes shall comply with all of the following:

1. Access from a corridor shall not be through an intervening room.
2. All openings within 10 feet (3,048 mm) of fire escape shall be protected by ¾-hour fire assemblies. When located within a recess or vestibule, adjacent enclosure walls shall be of not less than one-hour fire-resistive construction.
3. Egress from the building shall be by an unobstructed opening having a minimum dimension of not less than 29 inches (737 mm). Such openings shall be openable from the inside without the use of a key or special knowledge or effort. The sill of an opening giving access shall not be more than 30 inches (762 mm) above the floor of the building or balcony.

4. Fire escape stairways and balconies shall support the dead load plus a live load of not less than 100 pounds per square foot (4.79 kN/m²) and shall be provided with a top and intermediate handrail on each side. The pitch of the stairway shall not exceed 60 degrees with a minimum width of 18 inches (457 mm). Treads shall be not less than 4 inches (102 mm) in width and the rise between treads shall not exceed 10 inches (254 mm). All stair and balcony railings shall support a horizontal force of not less than 50 pounds per lineal foot (729.5 N/m) of railing.
5. Balconies shall be not less than 44 inches (1,118 mm) in width with no floor opening, other than the stairway opening, greater than $\frac{5}{8}$ inch (16 mm) in width. Stairway openings in such balconies shall be not less than 22 inches by 44 inches (559 mm by 1118 mm). The balustrade of each balcony shall be not less than 36 inches (914 mm) high with not more than 9 inches (229 mm) between balusters.
6. Fire escapes shall extend to the roof or provide an approved gooseneck ladder between the top floor landing and the roof when serving buildings four or more stories in height having roofs with a slope of less than 4 units vertical in 12 units horizontal (33.3% slope). Fire escape ladders shall be designed and connected to the building to withstand a horizontal force of 100 pounds per lineal foot (1459 N/m); each rung shall support a concentrated load of 500 pounds (2,224 N) placed anywhere on the rung. All ladders shall be at least 15 inches (381 mm) wide, located within 12 inches (305 mm) of the building and shall be placed flatwise relative to the face of the building. Ladder rungs shall be $\frac{3}{4}$ inch (19 mm) in diameter and shall be located 12 inches (305 mm) on center. Openings for roof access ladders through cornices and similar projections shall have minimum dimensions of 30 inches by 33 inches (762 mm by 838 mm).
7. The lowest balcony shall be not more than 18 feet (5,486 mm) from the ground. Fire escapes shall extend to the ground or be provided with counterbalanced stairs reaching to the ground.
8. Fire escapes shall not take the place of stairways required by the codes under which the building was constructed, and
9. Fire escapes shall be kept unobstructed at all times and maintained in good working order.

D102.5 Exit and fire escape signs. Exit signs shall be provided as required by this code.

Exception: The use of existing exit signs may be continued when found by the *building official* to provide adequate direction to the exits in emergency situations.

All doors or windows providing access to a fire escape shall be provided with fire escape signs.

D102.6 Exit illumination. Exits shall be illuminated as required by Section 1008 of the *Building Code*.

D102.7 Exit ladder devices.

D102.7.1 General. Where permitted by this appendix chapter, exit ladder devices shall be installed and maintained in accordance with the manufacturer's instructions and Section D102.1. Detailed plans with appropriate installation instructions shall be provided by a Texas professional engineer to address all structural requirements of all applicable

loads including, but not limited to, the loads identified in Section D102.7.2 Where exit ladder devices are intended for mounting on different support surfaces, specific instructions shall be provided for each surface.

D102.7.2 Design. All load-bearing surfaces and supporting hardware shall be of non-combustible materials. Exit ladder devices shall have a minimum width of 12 inches (305 mm) when in the position intended for use. The design load shall not be less than 400 pounds (1,780 N) for ladders having 16-feet (4,877 mm) lengths and 600 pounds (2,669 N) for ladders having 25-feet (7,620 mm) lengths. Exit ladder devices shall be capable of withstanding an applied load of four times the design load when installed in the manner intended for use.

D102.7.3 Testing. Exit ladder devices of the retractable type shall, in addition to the static load requirements of Section D102.7.2, be capable of withstanding all the following tests:

1. Rung strength.
2. Rung-to-side-rail shear strength.
3. Release mechanism, and
4. Low temperature.

Test loads shall be applied for a period of one hour.

D102.7.3.1 Rung-strength test. Rungs of retractable exit ladder devices shall be capable of withstanding a load of 1,000 pounds (4,448 N) when applied to a 3½-inch (89 mm) wide block resting at the center of the rung. The test load shall be applied for a period of one hour. The ladder shall remain operational following this test.

D102.7.3.2 Rung-to-side-rail shear test. Rungs of retractable exit ladder devices shall be capable of withstanding a load of 1,000 pounds (4,448 N) when applied to a 3½-inch (89 mm) wide block resting on the center rung as near the side rail as possible. The test load shall be applied for a period of one hour. Acceptable test results shall show no evidence of attachment failure of the rungs to the side rails including, but not limited to, visual evidence of displacement, tears, bending, or stretching, upon removal of the test load. The ladder shall remain operational following this test.

D102.7.3.3 Release mechanism test. The release mechanism for a retractable exit ladder device shall be tested to determine that it operates with an average applied force of not more than 5 pounds (22.2 N) for hand-operated releasing mechanisms and an average applied force of not more than 25 pounds (111 N) for foot-pedal types of releasing mechanisms. For these tests, a force gauge shall be applied to the release mechanism, and the average of three consecutive readings shall be computed.

D102.7.3.4 Low temperature operation test. Evidence of successful test results shall be provided to the code official of testing consisting of representative samples of the exit ladder device subjected to a temperature of -40°C in an environmental chamber for a period of 24 hours minimum by a city registered special inspector or a nationally recognized testing lab acceptable to the *building official*. For purposes of this section, a test is considered successful when the release mechanism operates immediately upon removal from the chamber and the ladder device functions as intended without any restriction of operation.

D102.7.3.5 Test verification. For the purpose of this section, evidence of successful test results shall be provided to the *code official* by the permit applicant from a city registered special inspector or a nationally recognized testing lab acceptable to the *building official*.

SECTION D103 **ENCLOSURE OF VERTICAL SHAFTS**

D103.1 Enclosure of vertical shafts. Interior vertical shafts, including but not limited to stairways, elevator hoistways, and service and utility shafts, shall be enclosed by a minimum one-hour fire-resistive construction. All openings into such shafts shall be protected with one-hour fire assemblies that shall be maintained self-closing or be automatic closing by smoke detection. All other openings shall be fire protected in an approved manner acceptable to the *building official*. Existing fusible link-type automatic door closing devices may be permitted where the fusible link rating does not exceed 135°F (57.2°C).

Exceptions:

1. In other than Group I occupancies, an enclosure will not be required for openings serving only one adjacent floor.
2. Stairways need not be enclosed in a continuous vertical shaft if each story is separated from other stories by one-hour fire-resistive construction or approved wire-glass set in steel frames. In addition, all exit corridors shall be sprinklered, and each opening between the corridor and any occupant space shall have at least one sprinkler head above the opening on the tenant side. The sprinkler system may be supplied from the domestic water supply if the water flow is of adequate volume and pressure.
3. Vertical openings need not be protected if the building is protected by an approved automatic sprinkler system.

SECTION D104 **BUILDING ACCESS OR SPRINKLER PROTECTION**

D104.1 Building access or sprinkler protection. An approved automatic sprinkler system shall be provided throughout a basement or a story that:

1. Exceeds 1,500 square feet (139.3 m²) in area; and,
2. Does not have a minimum of 20 square feet (1.86 m²) of opening entirely above the adjoining ground level in each 50 lineal feet (15,240 mm), or fraction thereof, of exterior wall on at least one side of the building. Openings shall have a minimum clear dimension of 30 inches (762 mm).

Additionally, and notwithstanding the application of the foregoing criteria, if any portion of a basement is located more than 75 feet (22,860 mm) from required openings, the basement shall be provided with an approved automatic sprinkler system throughout. The distance of 75 feet (22,860 mm) shall be measured in a straight line without regard to intervening walls or other objects.

Exception: Existing parking garages with no other occupancies may substitute an automatic fire alarm system utilizing “rate-of-rise” detectors when coupled with a smoke-removal system capable of six air changes per hour.

SECTION D105 **STANDPIPES**

D105.1 Standpipes. Any building over four stories in height shall be provided with an approved Class I or Class III standpipe system.

SECTION D106 **SMOKE DETECTORS**

D106.1 General. Day-care centers, dwelling units, and guest rooms in hotels or lodging houses that are used for sleeping purposes shall be equipped with smoke detectors installed in accordance with the requirements of the *Fire Code*.

D106.2 Power source. Smoke detectors may be battery operated or may receive their primary power from the building wiring when such wiring is served from a commercial source. Wiring shall be permanent and without disconnecting switches other than those required for over current protection.

D106.3 Location within dwelling units. In dwelling units, detectors shall be mounted on the ceiling or wall at a point centrally located in the corridor or area giving access to each separate sleeping area. Where sleeping units are on an upper level, the detector shall be placed at the center of the ceiling directly above the stairway. Detectors shall also be installed in the basements of dwelling units having stairways that open from the basement into the dwelling. Detectors shall sound an alarm audible in all sleeping areas of the dwelling unit in which they are located.

D106.4 Location in efficiency dwelling units and hotels. In efficiency dwelling units, hotel suites and hotel sleeping units, detectors shall be located on the ceiling or wall of the main room or hotel sleeping unit. When sleeping units within an efficiency dwelling unit or hotel suite are on an upper level, the detector shall be placed at the center of the ceiling directly above the stairway. When actuated, the detector shall sound an alarm audible within the sleeping area of the dwelling unit, hotel suite, or sleeping unit in which it is located.

SECTION D107 **SEPARATION OF OCCUPANCIES**

D107.1 General. Occupancy separations shall be provided as specified in Section 508 of the *Building Code*. When approved by the *building official*, existing wood lath and plaster in good condition or ½-inch (12.7 mm) gypsum wallboard may be acceptable where one-hour occupancy separations are required.

SECTION D108 **FIRE ALARMS**

D108.1 General. High-rise buildings as defined in the *Building Code* shall be equipped with an approved manual fire alarm system in accordance with the provisions of NFPA 72, Sections 403.4.2 and 907.2.13 of the *Building Code*. The initiation of the manual fire alarm shall activate an audible alarm at a constantly attended location within the building.

Exception: A manual fire alarm system connected to a constantly attended central, proprietary, or remote station service.

SECTION D109

EXTENSION OF TIME

D109.1 Application. The owner of a building may apply to the *building official* for an extension of time to comply with any requirement of this appendix chapter. The owner of the building shall set forth the following information on such an application:

1. The specific requirements of this appendix chapter for which the owner is seeking an extension of time;
2. The period of time the owner believes is necessary to meet the requirements; and
3. The reason(s) why the owner believes such an extension of time is necessary.

The application shall be accompanied by documents (examples of which include affidavits, photographs, receipts, loan applications, and contracts with third parties) demonstrating that the owner has made substantial and timely attempts to bring the building into full compliance with this appendix chapter.

The owner of the building shall sign the application, which shall be sworn before a notary public or conform to minimum state law requirements for unsworn declarations.

D109.2 Approval. No request for an extension of time shall be granted unless the *building official* finds that such an extension of time is reasonably necessary to perform the work and that granting such an extension of time will not result in an unreasonable risk to the safety of the occupants of the building or to others.

D109.3 Denial. If the *building official* denies any request for an extension of time under this section, the owner of the building may appeal such a decision to the General Appeals Board. If the General Appeals Board upholds the decision of the *building official* on the matter, the board's decisions may be appealed to city council, if notice of appeal, addressed to city council, is delivered to the office of the city secretary within 10 days of the date of the board's decision. Appeals shall be subject to city council Rule 12 (see Section 2-2 of the *City Code*).

Houston Amendments to the *2015 International Fire Code*



Adopted by Ord. No. 2021-1037¹

Passed December 1, 2021²

Effective April 1, 2022³

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1. The City Secretary shall insert the number of the adopting ordinance.
 2. The City Secretary shall insert the date passage and approval of the adopting ordinance.
 3. The City Secretary shall insert the effective date of the adopting ordinance.

CHAPTER 1

SCOPE AND ADMINISTRATION

[A] 101.1 Title. These regulations shall be known as the *City of Houston Fire Code* of [NAME OF JURISDICTION], hereinafter referred to as “this code,” and also known as the *Fire Code*.

The *Construction Code* collectively includes this volume and certain other codes, pamphlets, specifications and documents that are adopted in or by reference through the adopting ordinance, City of Houston Ordinance No. 2021-1037⁴.

[A] 101.2.1 Appendices. Provisions in the appendices shall not apply unless specifically adopted. Appendices A, B, C, D, E, F, G, H, I, J and M are hereby adopted and made part of this code.

[A] 101.3 Intent. The purpose of this code is to establish the minimum requirements consistent with nationally recognized good practice for providing a reasonable level of life safety and property protection from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures and premises, and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations. The provisions of this code shall not apply to any activity for which local regulation is preempted by federal or state law.

[A] 101.3.1 Landlord/tenant. The terms of this code shall not be construed to alter the terms of any lease or other agreement between landlord and tenant or others relating to property that is the subject of this code; provided that no provision of any lease or other agreement shall be construed to excuse compliance with this code by any person, including the construction, maintenance, occupancy, or use of any property in violation of this code. It is the intent of this code to identify the parties this jurisdiction will hold responsible for compliance with and violations of this code, rather than to determine the rights and liabilities of persons under agreements to which this jurisdiction is not a party.

[A] 101.6 Standards. Copies of the Houston Fire Department Life Safety Bureau Standards that are referred to in this code have been placed on file in the city secretary's Office in connection with the code's adoption and shall constitute a part of this code. The standards may be inspected in the city secretary's Office or the Office of the Fire Prevention Bureau, and copies may be purchased at the fees prescribed by law.

[A] 102.2 Administrative, operational and maintenance provisions. The administrative, operational and maintenance provisions of this code shall apply to:

1. Conditions and operations arising after the adoption of this code.
2. Existing conditions and operations not legally in existence at the time of adoption of this code.
3. Conditions that, in the opinion of the *fire code official*, constitute a distinct hazard to life or property.

4. The City Secretary shall insert the number of the adopting ordinance.

This section shall be construed in a manner that is consistent with the *Existing Building Code*, Sections 102 and 110 of this code, and City of Houston Ordinance No. 78-2672.

[A] 102.2.1 Existing and annexed buildings. Buildings or structures in existence at the time of the adoption of this code may have their existing use or occupancy continued if the buildings or structures comply with the standards established in Chapter 10, Article IX, of the *City Code*, Section 102.6 of the *Building Code*, and the *Existing Building Code*. Determination of compliance shall be under the primary jurisdiction of the building official. Whenever the *fire code official* determines, pursuant to inspection of such a building or structure, that there exists therein a fire hazard that causes the building or structure to be dangerous to life, the *fire code official* shall initiate proceedings under Chapter 10, Article VIII, of the *City Code*, including the placarding of buildings as authorized therein. The *fire code official* shall notify the neighborhood protection official, and if the building official determines that the building or structure constitutes a dangerous building as defined in Chapter 10, Article IX, of the *City Code*, then the building official shall initiate dangerous building abatement proceedings before the hearing official or the Building and Standards Commission under the applicable provisions of Chapter 10 of the *City Code*.

[A] 102.10 Conflicting provisions. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall prevail ~~be applicable~~. Where, in a specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where, in any specific instance, provisions of this code, including appendices and standards, specify different materials, different methods of construction, or other requirements that differ from those provided in the *City Code* or other volumes of the *Construction Code*, including adopted appendices, and the *building official* and the fire marshal are unable to mutually reconcile the requirements by issuing a written interpretation, then either of them may refer the matter to the General Appeals Board created under the *Building Code*, which shall conduct a review of the matter and issue a written code interpretation based upon the apparent intent of the codes involved. Notwithstanding any other provision, interpretations that are issued by the General Appeals board shall not be subject to any further appeal.

[A] 103.1 General. The department of fire prevention *Life Safety and Fire Prevention Bureau* of the Houston Fire Department is established within the jurisdiction under the direction of the *fire code official*. The function of ~~the department~~ this bureau shall be the implementation, administration and enforcement of the provisions of this code.

[A] 103.2 Appointment. The *fire code official* shall be appointed by the chief appointing authority of the fire department of the jurisdiction; and the *fire code official* shall not be removed from office except for cause and after full opportunity to be heard on specific and relevant charges by and before the appointing authority.

[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the *fire code official* shall have the authority to appoint a deputy *fire code official*, other related technical officers, inspectors and other employees.

[A] 103.34 Liability. The *fire code official*, member of the board of appeals, officer or employee charged with the enforcement of this code, while acting for the jurisdiction, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of

~~an act or by reason of an act or omission in the discharge of official duties. Except as otherwise provided by law, the *fire code official* shall not personally be liable in damages for any act or omission arising out of any official action taken to implement and enforce the provisions of this code. Additionally, except as otherwise provided by law, the *fire code official* shall not personally be liable in damages for any act or omission taken in the course and scope of employment. Where and to the extent consistent with the provisions of Chapter 2, Article X of the *City Code*, this jurisdiction shall provide legal representation and indemnification for any suit or claim brought against the *fire code official* or any deputies because of acts or omissions performed in the implementation or enforcement of this code.~~

This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating, or controlling any building, structure or system or any other construction for any damages to persons or property caused by defects, nor shall the Houston Fire Department Life Safety Bureau or the jurisdiction be held as assuming any such liability by reason of the inspections authorized by this code or any permits or certificates issued under this code.

~~**[A] 103.4.1 Legal defense.** Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representatives of the jurisdiction until the final termination of the proceedings. The *fire code official* or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code; and any officer of the department of fire prevention, acting in good faith and without malice, shall be free from liability for acts performed under any of its provisions or by reason of any act or omission in the performance of official duties in connection therewith.~~

[A] 104.1 General. The Consistent with the provisions of this code, the *fire code official* is hereby authorized to enforce the provisions of this code and shall have the authority to render interpretations of this code, and to adopt policies, procedures, rules and regulations standards in order to clarify the application of its provisions. Such interpretations, policies, procedures, rules and regulations standards shall be in compliance with the intent and purpose of this code and shall not have the effect of waiving requirements specifically provided for in this code. A certified copy of the standards shall be filed with the city secretary and additional copies shall be kept in the office of the Fire Prevention Bureau for inspection by the public. Copies shall be furnished at the fees provided by law.

The *fire code official* is authorized to enforce all ordinances of the jurisdiction and laws of the state pertaining to:

1. The prevention of fires;
2. The suppression or extinguishing of dangerous or hazardous fires;
3. The storage, use and handling of hazardous materials;
4. The installation and maintenance of automatic, manual and other private fire alarm systems and fire extinguishing equipment;
5. The maintenance and regulation of fire escapes;
6. The maintenance of fire protection and the elimination of fire hazards on land and in buildings, structures and other property including those under construction;
7. The means, adequacy and maintenance of egress;

8. The investigation of the cause, origin and circumstances of fire and unauthorized releases of hazardous materials;
9. The posting of accurate certificates of occupancy and life safety certificates where required by the *Building Code*; and
10. The conducting of fire safety campaigns.

[A] 104.1.1 Standards. Throughout this code, the *fire code official* is authorized to grant approvals or permissions, promulgate standards, impose requirements, or exercise similar discretionary authorization over materials, personnel, activities or procedures; however, no specific standards or decision-making criteria are stated. It is intended that discretionary authorization be administered in a uniform manner, that authorizations not be unreasonably withheld, and that rules and standards be based upon the preservation of the public health, safety and welfare. The *fire code official* shall be guided by accepted principles of fire safety and shall look to this code and any standards that are adopted herein by reference for guidance. If an individual authorization is denied, the person requesting the authorization shall be advised of the reasons in writing and shall be entitled to a review of the decision by appeal to the Board of Appeals.

[A] 104.5 Notices and orders. ~~The *As* may be required to enforce this code, the *fire code official* is authorized to issue and to serve such notices, or orders, and criminal citations, as well as administrative citations or summonses in the manner prescribed by Chapter 10, Article XVIII, of the *City Code* as are required to affect compliance with this code in accordance with Sections 109.1 and 109.2.~~

[A] 104.10.1 Assistance from other agencies. Police and other enforcement agencies shall have authority to render necessary assistance in the investigation of fires and in enforcing the provisions of this code when requested to do so by the *fire code official*.

[A] 105.1.1 Permits required. ~~A property owner or owner's authorized agent who intends to conduct an operation or business, or install or modify systems and equipment that are regulated by this code, or to cause any such work to be performed, shall first make application to the *fire code official* and obtain the required permit. Permits required by this code shall be obtained from the Fire Permit Office. The property owner or authorized agent shall obtain a permit prior to engaging in any activities, operations, practices, or functions regulated by this code and requiring a permit as listed in Section 105.6, and shall pay permit fees, as required, prior to receiving issuance of the permit. Issued permits shall be kept on the premises designated therein at all times and shall be readily available for inspection by the *fire code official*. It shall be unlawful for any person to engage in any activities, operations, practices or functions listed in Section 105.6 for any reason without holding a current and valid permit for the activity, operation, practice or function as issued by the Fire Permit Office.~~

[A] 105.1.2 Types of permits. There shall be two types of permits as follows:

1. Operational permit, issued by the Fire Department. An operational permit allows the applicant to conduct an operation or a business for which a permit is required by Section 105.6 for either:
 - 1.1. A prescribed period.

- 1.2. Until renewed or revoked.
2. Construction permit, issued by the *building official* in accordance with the *Building Code*. A construction permit allows the applicant to install or modify systems and equipment for which a permit is required by and in accordance with the *Building Code* Section 105.7.

[A] 105.2.2 Inspection authorized. Before a new operational permit is *approved*, the *fire code official* is authorized, but not required, to inspect the receptacles, vehicles, buildings, devices, premises, storage spaces or areas to be used to determine compliance with this code or any operational constraints required. In instances where laws or regulations are enforceable by departments of the jurisdiction other than the fire department, joint approval shall be obtained from all departments concerned.

[A] 105.2.3 Time limitation of application. An application for which no permit is issued within 180 days following the date of application shall become inactive, and plans and other data submitted for review thereafter shall be returned to the applicant or destroyed by the *fire code official*. The *fire code official* is authorized to grant one or more extensions of time for additional periods not to exceed 180 days each, for a maximum of two years from the date of the original application, upon written request and justifiable cause demonstrated by the applicant. If an application for permit does not result in a permit within two years after the date of original application, the permit application shall expire. In order to renew action on an application after expiration, the applicant shall submit a new permit application and plans and shall pay a new plan review fee. ~~An application for a permit for any proposed work or operation shall be deemed to have been inactive on the abandoned 180 days after the date of filing, unless such application has been diligently prosecuted or a permit shall have been issued; except that the *fire code official* is authorized to grant one or more extensions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and justifiable cause demonstrated.~~

[A] 105.3.1 Expiration. An operational permit shall remain in effect until reissued, renewed, or revoked or for such a period of time as specified in the permit. ~~Construction permits shall automatically become invalid unless the work authorized by such permit is commenced within 180 days after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. Before such work recommences, a new permit shall be first obtained and the fee to recommence work, if any, shall be one-half the amount required for a new permit for such work, provided that changes have not been made and will not be made in the original construction documents for such work, and provided further that such suspension or abandonment has not exceeded one year. Permits are not transferable and any change in occupancy, operation, tenancy or ownership shall require that a new permit be issued.~~

[A] 105.3.3 Occupancy prohibited before approval. The building or structure shall not be occupied prior to the ~~*fire code*~~ *building official* issuing a permit ~~and conducting associated inspections indicating the applicable provisions of this code have been met~~ certificate of occupancy in accordance with the *Building Code* and the *Residential Code*.

Exceptions:

1. The building official is authorized to issue a temporary certificate of occupancy in accordance with the *Building Code* and the *Residential Code*.
2. The *fire code official*, with the joint approval of the building official, is authorized to permit the temporary occupancy of a building, or portion thereof, when standby personnel are provided in accordance with Section 114.

[A] 105.3.8 Validity of permit. The issuance or granting of a *permit* or approval of plans and specifications shall not be construed to be a *permit* for, or an approval of, any violation of any of the provisions of this code or of any other applicable laws, or any other ordinances of the jurisdiction. *Permits* presuming to give authority to violate or cancel the provisions of this code or other ordinances of the *jurisdiction* shall not be valid.

The issuance of a *permit* based on *construction documents*, operational documents, specifications, and other data shall not prevent the *fire code official* from thereafter requiring the correction of errors in the *construction documents*, operation documents, specifications, and/or other data, or from preventing construction, occupancy or use of a structure when in violation of this code or of any other applicable law.

A permit and all its privileges are issued to the owner of the property for which the permit is issued, regardless of who submits the application or pays the permit fees. A permit shall be valid only for the person listed on the application as performing the work and for the scope of work identified on the permit.

A name change on an application or the existing permit must be obtained if the person performing the work listed on the application or existing permit is no longer responsible for the work performed. Provided that a refund has not been issued, the property owner has not changed, and written authority for the name change has been provided by the property owner to the building official and/or *fire code official*, who shall issue an amended permit. A name change fee and an administrative fee shall be charged as provided in Section 118.1 of the *Building Code* and the city fee schedule.

In the case of the death or dissolution of the original property owner or person performing the work listed on the existing permit, pursuant to a timely name change request within 45 calendar days after such death or dissolution, the permit will be transferred to the new property owner or amended to include the name of the new person performing the work at no fee except for the administrative fee established in Section 118.1.1. of the *Building Code* and the city fee schedule. Failure to apply for a name change within the requisite 45 calendar days shall subject the property owner to applicable permit fees established in Section 118 of the *Building Code* and the city fee schedule based on the scope of work for all remaining construction and uninspected work.

[A] 105.5 Revocation. ~~The *fire code official* is authorized to revoke a permit issued under the provisions of this code where it is found by inspection or otherwise~~ A permit issued under the provisions of this code may be revoked as provided herein after a hearing conducted by the Section 105 hearing official, if that hearing official finds from a preponderance of evidence cited at such hearing that there has been a false statement or misrepresentation as to the material facts in the application or *construction documents* on which the permit or approval was based, or a

violation of the terms and conditions as set forth in this code, including, but not limited to, any one of the following:

1. The permit is used for a location or establishment other than that for which it was issued.
2. The permit is used for a condition or activity other than that listed in the permit.
3. Conditions and limitations for the permit, as set forth in the permit this code, have been violated.
4. There have been any false statements or misrepresentations as to the material fact in the application for permit or plans submitted or a condition of the permit.
5. The permit is used by a different person or firm than the name for which it was issued.
6. The permittee failed, refused or neglected to comply with orders or notices duly served in accordance with the provisions of this code within the time provided therein.
7. The permit was issued in error or in violation of an ordinance, regulation or this code.

[A] 105.5.1 Notice of hearing. Not later than 14 days prior to the date set for the revocation hearing by the Section 105 hearing official, the permit holder shall be given a written notice by the fire code official, which shall set forth:

1. The grounds on which the fire code official will seek revocation of the permit;
2. That a hearing has been scheduled thereon before the Section 105 hearing official and the time, date and place of the hearing; and
3. That the permit holder may appear, may be represented by counsel, may present evidence and may cross examine any witness presented by the fire code official.

[A] 105.5.2 Hearing. Except for hearings related to orders issued under Section 105.5.3, all hearings under this Section 105 shall be conducted by a Section 105 hearing official. In rendering a decision, the Section 105 hearing official shall consider only the evidence presented at the hearing. A decision of the Section 105 hearing official shall be set forth in writing, copies of which shall be served upon each party in the same manner as the notice of a right to a hearing.

[A] 105.5.3 Emergency revocation of permit. If the revocation of a permit issued under this code reasonably appears to be necessary to abate or improve a serious and immediate fire hazard, the fire code official may revoke the permit without prior notice or hearing. In such circumstance, however, the fire code official must provide the permit holder with an opportunity for a post-revocation hearing in the manner prescribed by Chapter 10, Article IX, Division 8, of the City Code.

[A] 105.6.2 Amusement buildings. An operational permit is required to operate a special amusement building. Apparatus access, road access-control gates. An operational permit is required to install or maintain an access-control gate on a fire apparatus access road.

[A] 105.6.5 Carnivals, festivals, trade shows, exhibitions, and fairs. An operational permit is required to conduct a carnival, festival, trade show, other exhibition, or fair. A site or floor plan showing dimensions and locations of the aisles, cooking booths, LP-gas storage, etc., shall be submitted with the permit application.

[A] 105.6.12 Cutting and welding. ~~An operational permit is required to conduct cutting or welding operations within the jurisdiction.~~ See Section 105.6.24.

[A] 105.6.14 Exhibits and trade shows. ~~An operational permit is required to operate exhibits and trade shows.~~ See Section 105.6.5.

[A] 105.6.15 Explosives, fireworks and pyrotechnics. An operational permit is required for the manufacture, storage, handling, sale or use of any quantity of *explosives, explosive materials*, fireworks or pyrotechnic special effects within the scope of Chapter 56.

Exception: Storage in Group R-3 occupancies of smokeless propellant, black powder and small arms primers for personal use, not for resale and in accordance with Section 5606.

[A] 105.6.16 ~~Fire hydrants and valves.~~ Fire depository, key boxes. An operational permit is required to install a key box or fire depository box. See Houston Fire Department LSB Standard No. 05, "Key Boxes" and LSB Standard No. 06, "Fire Depository Boxes." ~~An operational permit is required to use or operate fire hydrants or valves intended for fire suppression purposes that are installed on water systems and accessible to a fire apparatus access road that is open to or generally used by the public.~~

Exception: ~~A permit is not required for authorized employees of the water company that supplies the system or the fire department to use or operate fire hydrants or valves.~~

{EDITORIAL NOTE: TABLE 105.6.21 SHALL REMAIN AS SET FORTH IN THE 2015 IFC, BUT IS NOT ADOPTED BY THIS JURISDICTION.}

[A] 105.6.22 ~~Reserved.~~ HPM facilities. ~~An operational permit is required to store, handle or use hazardous production materials.~~

[A] 105.6.23 High-piled storage. An operational permit is required to use a building or portion thereof as a *high-piled storage area*, as defined in Chapter 32, exceeding 500-2500 square feet (46-232 m²). A floor plan showing the dimensions and locations of the stock piles and aisles shall be submitted with the permit application in accordance with Chapter 32.

[A] 105.6.24 Hot work operations. An operational permit is required for hot work including, but not limited to:

1. Public exhibitions and demonstrations where hot work is conducted.
2. Use of portable hot work equipment inside, or for cutting or welding in or on a building or a structure.

Exception: Work that is conducted under a construction permit.

3. Fixed-site hot work equipment, such as welding booths.
4. Hot work conducted within a hazardous fire ~~wildfire risk~~ area.
5. Application of roof coverings with the use of an open-flame device.
6. ~~Where approved, the fire code official shall issue a permit to carry out a hot work program. This program allows approved personnel to regulate their facility's hot work operations. The approved personnel shall be trained in the fire safety aspects denoted in this chapter and shall be responsible for issuing permits requiring compliance with the requirements found in Chapter 35. These permits shall be issued only to their employees or hot work operations under their supervision.~~

[A] 105.6.28 LP-gas. An operational permit is required for:

1. ~~Storage and use of LP-gas. to install or maintain any LP-gas container of 125 gallons (473 L) aggregate water capacity or more or operate any tank vehicle that is used for the transportation of LP-gas. An operational permit is required to use any amount of LP-gas for demonstrations, public exhibitions, portable heating (excluding R occupancies), temporary commercial cooking or on mobile food units. For a single container with a 500-gallon (1,893 L) water capacity or for one or more containers with an aggregate 2,000 gallons (7,572 L) water capacity or more, the installer shall submit construction documents for the permit. For operational permit requirements for LP-gas storage, handling, or use, see Chapter 61.~~

Exception: A permit is not required for individual containers with a 500-gallon (1,893 L) water capacity or less or multiple container systems having an aggregate quantity not exceeding 500 gallons (1,893 L), serving occupancies in Group R-3.

2. ~~Operation of cargo tankers that transport LP-gas.~~

[A] 105.6.30 Miscellaneous combustible storage. ~~An operational permit is required to store in any building or upon any premises in excess of 2,500 cubic feet (71 m³) gross volume of combustible empty packing cases, boxes, barrels or similar containers, rubber tires, rubber, cork or similar combustible material. An operational permit is required to store more than 50 cubic feet (1.4 m³) of uncompacted rubbish or combustible waste.~~

[A] 105.6.33 Reserved. Open flames and torches. An operational permit is required to remove paint with a torch; or to use a torch or open flame device in a wildfire risk area.

[A] 105.6.37 Reserved. Private fire hydrants. An operational permit is required for the removal from service, use or operation of private fire hydrants.

Exception: A permit is not required for private industry with trained maintenance personnel, private fire brigade or fire departments to maintain, test and use private hydrants.

[A] 105.6.45 Temporary membrane structures, and tents and canopies. An operational permit is required to operate an air-supported temporary membrane structure, a temporary stage canopy or a tent having an area in excess of 400 1,200 square feet (37 112 m²) or more.

Exceptions:

4. Tents used exclusively for recreational camping purposes.
2. ~~Tents open on all sides, which comply with all of the following:~~
 - 2.1. ~~Individual tents having a maximum size of 700 square feet (65 m²).~~
 - 2.2. ~~The aggregate area of multiple tents placed side by side without a fire break clearance of not less than 12 feet (3,658 mm) shall not exceed 700 square feet (65 m²) total.~~
 - 2.3. ~~A minimum clearance of 12 feet (3,658 mm) to structures and other tents shall be provided.~~

[A] 105.6.49 Asphalt kettles and roof torching operations. A permit is required in accordance with Sections 303 and Chapters 33 and 35.

[A] 105.6.50 Battery systems. A permit is required to install stationary storage battery systems regulated by Section 1206.2.

[A] 105.6.51 Capacitor energy storage systems. A construction permit is required to install capacitor energy storage systems regulated by Section 1206.3.

[A] 105.6.52 Fuel cell power systems. A construction permit is required to install stationary fuel cell power systems.

[A] 105.6.53 Gas detection systems. A construction permit is required for the installation of or modification to gas detection systems. Maintenance performed in accordance with this code is not considered a modification and shall not require a permit.

TABLE 105.6
SCHEDULE OF FIRE PERMITS

<u>SECTION REFERENCE NUMBER</u>	<u>PERMIT DESCRIPTION</u>	<u>AMOUNT OR QUANTITY</u>
<u>105.6.1</u>	<u>Aerosol products</u>	<u>Tier 1:</u> <u>Level 2 Aerosols > 500 and < 2,500 lbs.</u> <u>Level 3 Aerosols > 500 and < 1,000 lbs.</u> <u>Combined Level 2 and 3 > 500 and < 2,500 lbs.</u> <u>Tier 2:</u> <u>Amounts greater than for Tier 1</u>
<u>105.6.2</u>	<u>Apparatus access, road access-control gates</u>	<u>One</u> <u>Two or more</u>

<u>SECTION REFERENCE NUMBER</u>	<u>PERMIT DESCRIPTION</u>	<u>AMOUNT OR QUANTITY</u>
<u>105.6.3</u>	<u>Aviation facilities</u>	<u>Aircraft refueling vehicles:</u> <u>First one</u> <u>Each additional</u> <u>Maximum</u> <u>Aircraft service or repair occupancy</u>
<u>105.6.4</u>	<u>Carbon dioxide systems used in beverage dispensing applications</u>	
<u>105.6.5</u>	<u>Carnivals, festivals, trade show exhibitions and fairs</u>	
<u>105.6.6</u>	<u>Cellulose nitrate film</u>	
<u>05.6.7</u>	<u>Combustible dust- producing operations</u>	
<u>105.6.8</u>	<u>Combustible fibers</u>	<u>Tier 1:</u> <u>Loose fiber storage > 100 and < 500 cu. ft.</u> <u>Baled fiber storage > 100 and < 1,000 cu. ft.</u> <u>Tier 2:</u> <u>Amounts greater than for Tier 1</u>
<u>105.6.9</u>	<u>Compressed gases</u>	<u>Tier 1:</u> <u>Corrosive: > 200 cu. ft. and ≤1,620 cu. ft. at NTP</u> <u>Flammable (excluding cryogenic and LPG):</u> <u>>200 cu. ft. and ≤ 2,000 cu. ft. at NTP</u> <u>Highly toxic: up to 40 cu. ft. at NTP</u> <u>Inert & simple asphyxiant: no limit > 6,000 cu. ft.</u> <u>at NTP (no limit, always Tier 1)</u> <u>Oxidizing (including oxygen): > 504 cu. ft. and ≤</u> <u>3,000 cu. ft. at NTP</u> <u>Pyrophoric > 100 cu. ft. at NTP</u> <u>Toxic: up to 1,620 cu. ft. at NTP</u> <u>Tier 2:</u> <u>Amounts greater than for Tier 1</u>
<u>105.6.10</u>	<u>Covered and open mall buildings</u>	<u>Includes partial cost of Life Safety Inspection</u>
<u>105.6.11</u>	<u>Cryogenic fluids</u>	<u>Tier 1: Flammable:</u> <u>> 1 gal. and ≤ 90 gal. (inside bldg).</u> <u>> 60 gal. and ≤ 90 gal. (outside bldg.)</u> <u>Inert:</u> <u>> 60 gal. (inside bldg.) no limit, always Tier 1</u> <u>> 500 gal. (outside bldg.) no limit, always Tier 1</u> <u>Oxidizing (includes oxygen):</u> <u>> 10 gal. and ≤ 90 gal. (inside bldg.)</u>

<u>SECTION REFERENCE NUMBER</u>	<u>PERMIT DESCRIPTION</u>	<u>AMOUNT OR QUANTITY</u>
		<u>> 50 gal. and ≤90 gal. (outside bldg.)</u> <u>Physical or health hazard not included above: no limit, always Tier 1</u> <u>Tier 2:</u> <u>Amounts greater than for Tier 1</u>
<u>105.6.12</u>	<u>Cutting and welding</u>	
<u>105.6.13</u>	<u>Dry cleaning</u>	
<u>105.6.14</u>	<u>Exhibits and trade shows</u>	
<u>105.6.15</u>	<u>Explosives, fireworks, and pyrotechnics</u>	
<u>105.6.16</u>	<u>Fire depository, key boxes</u>	<u>One</u> <u>Two or more</u>
<u>105.6.17</u>	<u>Flammable and combustible liquids</u>	<u>Parts 1-5, 7, 8: Tier 1</u> <u>Class IA:</u> <u>> 5 gal. and ≤ 60 gal. (inside bldg.)</u> <u>> 10 gal. and ≤ 60 gal. (outside bldg.)</u> <u>Class IB:</u> <u>> 5 gal. and ≤ 120 gal. (inside bldg.)</u> <u>> 10 gal. and ≤ 120 gal. (outside bldg.)</u> <u>Class IC:</u> <u>> 5 gal. and ≤ 180 gal. (inside bldg.)</u> <u>> 10 gal. and ≤ 180 gal. (outside bldg.)</u> <u>Class IA, IB, or IC combined amounts:</u> <u>> 5 gal. and ≤ 240 gal. (inside bldg.)</u> <u>> 10 gal. and ≤ 240 gal. (outside bldg.)</u> <u>Class II:</u> <u>> 25 gal. and ≤ 240 gal. (inside bldg.)</u> <u>> 60 gal. and ≤ 240 gal. (outside bldg.)</u> <u>Class IIIA:</u> <u>> 25 gal. and ≤ 660 gal. (inside bldg.)</u> <u>> 60 gal. and ≤ 660 gal. (outside bldg.)</u> <u>Class IIIB:</u> <u>> 60 gal. no limit; always Tier 1 (in a tank or vessel)</u> <u>Parts 1-5, 7, 8: Tier 2</u> <u>Amounts greater than for Tier 1</u> <u>Part 6: Tank removal, installation, disposal or abandonment</u> <u>One</u> <u>Two</u> <u>Three or more</u>
<u>105.6.18</u>	<u>Floor finishing</u>	

<u>SECTION REFERENCE NUMBER</u>	<u>PERMIT DESCRIPTION</u>	<u>AMOUNT OR QUANTITY</u>
<u>105.6.19</u>	<u>Fruit and crop ripening</u>	
<u>105.6.20</u>	<u>Fumigation and thermal insecticidal fogging</u>	
<u>105.6.21</u>	<u>Hazardous materials</u>	<p><u>Tier 1:</u></p> <p><u>Corrosive liquid > 55 gal. and ≤ 1,000 gal.</u></p> <p><u>Corrosive solid > 1,000 lbs. and ≤ 10,000 lbs.</u></p> <p><u>Flammable solids > 100 lbs. and ≤ 250 lbs.</u></p> <p><u>Highly toxic liquids or solids up to 20 lbs.</u></p> <p><u>Oxidizing material, Class 1:</u></p> <p><u>Liquids > 55 gal. and ≤ 8,000 lbs.</u></p> <p><u>Solids > 500 lbs. and ≤ 8,000 lbs.</u></p> <p><u>Oxidizing material, Class 2:</u></p> <p><u>Liquids > 10 gal. and ≤ 500 lbs.</u></p> <p><u>Solids > 100 lbs. and ≤ 500lbs.</u></p> <p><u>Oxidizing material liquid or solid, Class 3:</u></p> <p><u>Liquids > 1 gal. and ≤ 20 lbs.</u></p> <p><u>Solids > 10 lbs. and ≤ 20 lbs.</u></p> <p><u>Oxidizing material, liquid or solid, Class 4: up to</u> <u>2 lbs.</u></p> <p><u>Organic peroxides, liquid or solid, Class 1: up to</u> <u>10 lbs.</u></p> <p><u>Organic peroxides, liquid or solid, Class 2: up to</u> <u>100 lbs.</u></p> <p><u>Organic peroxides, Class 3:</u></p> <p><u>Liquid > 1 gal. and ≤ 250 lbs.</u></p> <p><u>Solid > 10 lbs. and ≤ 250 lbs.</u></p> <p><u>Organic peroxides, Class 4:</u></p> <p><u>2 gal. or 20 lbs. or more (no limit, always Tier</u> <u>1)</u></p> <p><u>Pyrophoric gases: up to 100 cu. ft.</u></p> <p><u>Pyrophoric liquid or solid: up to 8 lbs.</u></p> <p><u>Toxic liquid: > 10 gal. and ≤ 1,000 lbs.</u></p> <p><u>Toxic solid: >100 lbs. and ≤ 1,000 lbs.</u></p> <p><u>Unstable reactive, gas, Class 1: no limit (no limit,</u> <u>always Tier 1)</u></p> <p><u>Unstable reactive, gas, Class 2: up to 500 cu. ft.</u></p> <p><u>Unstable reactive, gas, Class 3: up to 100 cu. ft.</u></p> <p><u>Unstable reactive, gas, Class 4: up to 20 cu. ft.</u></p> <p><u>Unstable reactive, liquid & solid, Class 1:> 10</u> <u>gal. or 100 lbs. (no limit, always Tier 1)</u></p> <p><u>Unstable reactive, Class 2:</u></p> <p><u>Liquid > 5 gal. and ≤100 lbs.</u></p> <p><u>Solid > 50 lbs. and ≤ 100 lbs.</u></p> <p><u>Unstable reactive, liquid & solid, Class 3: up to</u> <u>10 lbs.</u></p>

<u>SECTION REFERENCE NUMBER</u>	<u>PERMIT DESCRIPTION</u>	<u>AMOUNT OR QUANTITY</u>
		<u>Unstable reactive, liquid & solid, Class 4: up to 2 lbs.</u> <u>Water reactive, liquid & solid, Class 1: > 55 gal. or 500 lbs. (no limit, always Tier 1)</u> <u>Water reactive, Class 2:</u> <u>Liquid > 5 gal. and ≤ 100 lbs.</u> <u>Solid > 50 lbs. and ≤ 100 lbs.</u> <u>Water reactive, liquid & solid, Class 3: up to 10 lbs.</u> <u>Tier 2</u> <u>Amounts greater than for Tier 1</u> <u>Organic peroxides, liquid or solid, unclassified detonable</u>
<u>105.6.22</u>	<u>Reserved</u>	
<u>105.6.23</u>	<u>High-piled storage</u>	<u>Level 1: 2,500 - 20,000 sq. ft.</u> <u>Level 2: > 20,000 sq. ft.</u>
<u>105.6.24</u>	<u>Hot work operations</u>	
<u>105.6.25</u>	<u>Industrial ovens</u>	
<u>105.6.26</u>	<u>Lumber yards and woodworking plants</u>	
<u>105.6.27</u>	<u>Liquid- or gas-fueled vehicles or equipment in assembly buildings</u>	<u>One unit</u> <u>Two units</u> <u>Three or more units</u>
<u>105.6.28</u>	<u>LP-gas</u>	<u>Uses other than for mobile food units 125 gallons (473 L) aggregate water capacity</u> <u>For use on a mobile food unit</u>
<u>105.6.29</u>	<u>Magnesium</u>	<u>Tier 1:</u> <u>Storage, >10 lbs. and ≤ 250 lbs.</u> <u>Open use, >10 lbs. and ≤ 25 lbs.</u> <u>Tier 2:</u> <u>Amount greater than for Tier 1</u>
<u>105.6.30</u>	<u>Miscellaneous combustible storage</u>	<u>One unit</u> <u>Two or more units</u>
<u>105.6.31</u>	<u>Motor fuel-dispensing facilities</u>	
<u>105.6.32</u>	<u>Open burning</u>	
<u>105.6.33</u>	<u>Reserved</u>	
<u>105.6.34</u>	<u>Open flames and candles</u>	
<u>105.6.35</u>	<u>Organic coatings</u>	<u>Tier 2 (no Tier 1):</u> <u>For operations producing > 1 gal. in one day</u>

<u>SECTION REFERENCE NUMBER</u>	<u>PERMIT DESCRIPTION</u>	<u>AMOUNT OR QUANTITY</u>
<u>105.6.36</u>	<u>Places of assembly</u>	<u>50-100 occupants (includes partial cost of Life Safety Inspection)</u> <u>101-299 occupants (includes partial cost of Life Safety Inspection)</u> <u>300+ occupants (includes partial cost of Life Safety Inspection)</u>
<u>105.6.37</u>	<u>Reserved</u>	
<u>105.6.38</u>	<u>Pyrotechnic special effects materials</u>	
<u>105.6.39</u>	<u>Pyroxylin plastics</u>	<u>Tier 2 (no Tier 1):</u> <u>To store or handle > 25 lbs. of pyroxylin</u>
<u>105.6.40</u>	<u>Refrigeration equipment</u>	
<u>105.6.41</u>	<u>Repair garages and motor fuel-dispensing facilities</u>	
<u>105.6.42</u>	<u>Rooftop heliports</u>	
<u>105.6.43</u>	<u>Spraying or dipping</u>	
<u>105.6.44</u>	<u>Storage of scrap tires and tire byproducts</u>	
<u>105.6.45</u>	<u>Temporary membrane structures, tents and canopies</u>	
<u>105.6.46</u>	<u>Tire-rebuilding plants</u>	
<u>105.6.47</u>	<u>Waste handling</u>	
<u>105.6.48</u>	<u>Wood products</u>	
<u>105.6.49</u>	<u>Asphalt kettles and roof torching operations</u> <u>Asphalt kettles</u> <u>Ignited torches -</u> <u>(annual repair permit)</u> <u>Site specific permit</u>	<u>Asphalt kettles</u> <u>First one</u> <u>Each additional</u> <u>Maximum</u> <u>Ignited torches</u> <u>First one</u> <u>Each additional</u> <u>Maximum</u>
<u>105.6.50</u>	<u>Battery systems</u>	
<u>105.6.51</u>	<u>Capacitor energy storage systems</u>	
<u>105.6.52</u>	<u>Fuel cell power systems</u>	
<u>105.6.53</u>	<u>Gas detection systems</u>	

[A] 105.7 Reserved. Required construction permits. ~~The fire code official is authorized to issue construction permits for work as set forth in Sections 105.7.1 through 105.7.18.~~

{EDITORIAL NOTE: PROVISIONS OF SECTION 105.7 NOT SHOWN SHALL REMAIN AS SET FORTH IN THE 2015 IFC BUT ARE NOT ADOPTED BY THIS JURISDICTION.}

106.2.3 Requested inspections. Whenever a person requests that the jurisdiction conduct an inspection, or perform other duties not specified in this code and not in connection with a permit required under this code the service shall be scheduled outside regular working hours, or on a weekend or a holiday observed by the jurisdiction, so that the service will not interfere with the regular duties of or cause an undue burden on jurisdiction personnel.

106.2.4 Priority inspection. Whenever an inspection is required by the fire code official or whenever a person requests that the jurisdiction conduct an inspection or perform other duties specified in this code at a specific time rather than at the convenience of the jurisdiction, the service shall be scheduled outside regular working hours, or on a weekend or a holiday observed by the jurisdiction, so that the service will not interfere with the regular duties of jurisdiction personnel or cause an undue burden on jurisdiction personnel.

106.5 Inspections of Facilities Having Hazardous Materials Processes, Piping, and Storage. All tanks and piping associated with a hazardous, combustible, flammable liquids or gases shall be maintained in a safe operation condition. Tanks and piping shall be maintained, inspected, and tested in accordance with their listing, manufacturing recommendations, or national recognized standard. Tanks, valves, and piping shall be visually inspected monthly for rust, deterioration or leakage. Documentation must be provided to the AHJ upon request.

[A] 108.1 Board of appeals established. ~~In order to hear and decide appeals of orders from decisions or determinations made by of the fire code official relative to the application and interpretation of this code as to the suitability of alternate materials and types of construction and to provide for reasonable interpretations of the provisions of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the mayor, subject to confirmation by the city council governing body and shall hold office at its pleasure. The fire code official shall be an ex officio member of said board but shall not have a vote on any matter before the board. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the fire code official. See Appendix A.~~

[A] 108.2 Limitations on authority. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equivalent method of protection or safety is proposed. The board shall not have authority to waive requirements of this code. The fire code official shall take action in accordance with the decision of the board.

[A] 108.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to this code hazards of fire, explosions, hazardous conditions or fire protection systems and are not employees of the jurisdiction.

[A] 109.3 Notice of violation. Where the *fire code official* finds a building, premises, vehicle, storage facility or outdoor area that is in violation of this code, the *fire code official* is authorized to prepare a written notice of violation ("NOV") describing the conditions deemed unsafe and, where compliance is not immediate, specifying a time for reinspection. The NOV advises the recipient of the existence of a violation of this code but does not initiate a judicial or administrative proceeding. Service of a NOV is not required prior to service of a citation or summons or to other action to enforce this code.

[A] 109.3.1 Service of NOV. The *fire code official* may serve (by personal service or by certified mail, return receipt requested) an NOV upon such person(s) as the *fire code official* reasonably believes should be notified of the violation. A notice of violation issued pursuant to this code shall be served upon the owner, the owner's authorized agent, operator, occupant or other person responsible for the condition or violation, either by personal service, mail or by delivering the same to, and leaving it with, some person of responsibility upon the premises. For unattended or abandoned locations, a copy of the NOV may such notice of violation shall be posted on the premises in a conspicuous place at or near the entrance to such premises, in which case a copy of the NOV and the notice of violation shall be mailed by certified mail, with return receipt requested or a certificate of mailing, to the owner of the property at the owner's last known address, according to the records of the appraisal district in which the property is located of the owner, the owner's authorized agent, or occupant.

[A] 109.3.3 Prosecution of violations. If the notice of violation is not complied with promptly, the *fire code official* is authorized to request the legal counsel of the jurisdiction to institute the appropriate legal proceedings at law or in equity to restrain, correct or abate such violation or to require removal or termination of the unlawful occupancy of the structure in violation of the provisions of this code or of the order or direction made pursuant hereto. If a person owning, operating, or maintaining an occupancy, property, or vehicle subject to this code allows a violation of this code to exist or fails to take immediate action to abate a violation when ordered to do so by the *fire code official*, the *fire code official* is authorized to take any action authorized by this code or other applicable law.

[A] 109.4 General penalty; continuing violations. Violation penalties. Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the *approved construction documents* or directive of the *fire code official*, or of a permit or certificate used under provisions of this code, shall be guilty of a [SPECIFY OFFENSE], punishable by a fine of not more than [AMOUNT] dollars or by imprisonment not exceeding [NUMBER OF DAYS], or both such fine and imprisonment. Each day that a violation continues after due notice has been served shall be deemed a separate offense. When in this code an act is prohibited or is made or declared to be unlawful or an offense or misdemeanor, or wherever in this code the doing of any act is required or the failure to do any act is declared to be unlawful, and no specific penalty is provided therefor, the violation of any such provision of this code shall be punished by a fine of not less than \$500.00, nor more than \$2000.00; provided, however, that no penalty shall be greater or lesser than the penalty provided for the same offense under the laws of the state. Each day any violation of this code shall continue shall constitute a separate offense. In prosecutions under this code, the various provisions hereof that are designated as exceptions shall not be treated as exceptions within the meaning of Section 2.02 of the *Texas Penal Code*, and instead, they shall constitute defenses to prosecution within the meaning of Section 2.03 of the *Texas Penal Code*.

[A] 109.4.1 Abatement of violation. ~~In addition to the imposition of the penalties herein described, the *fire code official* is authorized to institute appropriate action to prevent unlawful construction or to restrain, correct or abate a violation; or to prevent illegal occupancy of a structure or premises; or to stop an illegal act, conduct of business or occupancy of a structure on or about any premises.~~ **License suspension/revocation.** The suspension, revocation, cancellation or denial of any license, permit or certificate by the jurisdiction shall not prohibit the imposition of any civil or criminal penalty. The imposition of a civil or criminal penalty by the jurisdiction shall not prohibit the suspension, revocation, cancellation or denial of any license, permit or certificate.

109.4.2 Enforced removal or abatement. The application of the foregoing penalty shall not be held to prevent the enforced removal or abatement of any prohibited condition.

109.4.3 Administrative adjudication of unlawful parking or stopping of vehicle. The provisions of Chapter 16, Article IV, of the *City Code* shall be applicable to the adjudication of any offense arising under this code that involves the parking or stopping of a vehicle. The fines for parking or stopping of a vehicle shall be as otherwise provided in this section or other provisions of this code as applicable, but the citation shall be issued and adjudicated in all respects as provided in Chapter 16, Article IV, of the *City Code*.

109.4.4 Referral to city attorney. In addition to other remedies authorized by this code or other applicable law, the *fire code official* may refer a violation to the city attorney for appropriate legal action to abate or restrain an activity, condition, or occupancy constituting or resulting from a violation of this code.

[A] 110.1 General authority. ~~If during the inspection of a premises, a building or structure, or any building system, in whole or in part, constitutes a clear and inimical threat to human life, safety or health, the *fire code official* shall issue such notice or orders to remove or remedy the conditions as shall be deemed necessary in accordance with this section, and shall refer the building to the building department for any repairs, alterations, remodeling, removing or demolition required. If all or part of a property or structure violates this code and constitutes a threat to public health or safety, the *fire code official* shall issue such notices or orders to abate the threat as are reasonable under the circumstances. Such notices may include one or more placards posted conspicuously at the property stating that the property is a threat to public health or safety, that the fire marshal may order an evacuation of the structure or take other action against the property, and that persons who continue to use the building do so at their own risk. The wording of the placard shall be factually accurate, but no particular wording is prescribed.~~

[A] 110.1.2 Structural hazards. Administrative hearing under *City Code*. ~~Where an apparent structural hazard is caused by the faulty installation, operation or malfunction of any of the items or devices governed by this code, the *fire code official* shall immediately notify the building code official in accordance with Section 110.1. The *fire code official* may schedule a public hearing before a hearing officer as provided by Chapter 10, Article IX, Division 2, of the *City Code* and request any relief authorized by the said Article IX.~~

[A] 110.3 Summary abatement. ~~Where conditions exist that are deemed hazardous to life and property, the *fire code official* or fire department official in charge of the incident is authorized to abate summarily such hazardous conditions that are in violation of this code. If all or part of a property or structure constitutes a serious and immediate fire hazard, the *fire code official* or a fire~~

department official in charge of an incident may abate or otherwise remedy the said hazard without prior notice or hearing. In such a circumstance, however, the *fire code official* must provide each owner, lienholder, and mortgagee of the subject property with an opportunity for a post-abatement hearing in the manner prescribed by Chapter 10, Article IX, Division 8, of the *City Code*.

[A] 111.4 Failure to comply. It shall be unlawful to fail to comply with any stop work order. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars.

[A] 113.1 Fees. A permit shall not be issued until the fees have been paid, nor shall an amendment to a permit be released until the additional fee, if any, has been paid. Fees for permits, inspections and other services under this code shall be assessed in the amounts set forth in the city fee schedule and payable to the jurisdiction. Fees are annual unless otherwise provided in this code or by regulation of the *fire code official*.

113.1.1 Permits. Except for permits and inspections under Section 113.1.3.2, the fee for a permit includes an initial inspection and one follow-up inspection, if a follow-up inspection is deemed necessary in the judgment of the inspector.

113.1.2 Special inspection provisions.

113.1.2.1 Inspections not related to permits. Fees for inspection or other services not specified in this code and not in connection with a permit required under this code shall be based on the time expended as set forth in the city fee schedule for this provision.

A deposit in the full amount of the anticipated fee shall be required prior to the commencement of the inspection. Examples of the types of inspections covered by this section include, but are not limited to, inspections requested by persons who are applying for state or federal permits that have provisions for a fire inspection and compliance inspections requested in connection with real estate transactions. This fee shall be in addition to all other fees required by this code.

113.1.2.2 Priority inspections at a specific time. Fees for priority inspections or other services specified in this code at a scheduled, specific time, rather than at the convenience of the jurisdiction, shall be based on the time expended as set forth in the city fee schedule for this provision. This fee shall be in addition to all other fees required by this code.

113.1.3 Reinspections.

113.1.3.1 Reinspection fee. Whenever it becomes necessary to make a reinspection (after the initial inspection and one follow-up inspection under Section 113.1.1 or after the initial inspection under Section 113.1.3.2) because of faulty material, faulty workmanship, or incomplete work, or for any other reason, the permit holder shall pay for each reinspection a fee in the amount stated in the city fee schedule, unless a greater fee is specifically required by this code. This fee shall be in addition to all other fees required by this code.

113.1.3.2 Retesting and reinspection fees for fire protection systems and underground fuel storage tank permits. Fees for permits, inspections, and

testing for fire alarm, sprinkler, and other fire protection systems under Sections 901.5 (fire alarm, sprinkler and other fire protection systems) and 5704.2.12.2 (underground fuel storage tanks) include one-time inspection and testing. If a fire protection system or underground fuel storage tank fails testing or inspection or approved plans are not on site at the time of the scheduled test, the permit holder shall pay a retest fee in the amount set forth in the city fee schedule for retesting and reinspection.

113.1.3.3 Inspection cancellation fee. A fee in the amount stated in the city fee schedule shall be assessed to the permit holder and payable to the jurisdiction if a scheduled test or inspection of a fire protection system pursuant to Section 901.5 or underground fuel storage tank pursuant to Section 5704.2.12.2 is cancelled by the permit holder at any time during the four hours prior to the time scheduled for the test or inspection.

113.1.4 Other fees.

113.1.4.1 Administrative fee. The administrative fee stated in the city fee schedule shall be charged upon the preparation of each permit or license issued by the fire department. This fee shall apply regardless of whether the permit or license is issued pursuant to this code or the *City Code*, and it shall be payable in addition to all other applicable fees for the permit or license. The foregoing administrative fee shall not be applicable if no other fee is provided by law for the permit or license.

113.1.4.2 Receipt. The administrative receipt fee stated in the city fee schedule shall be charged upon the preparation of each fee or deposit receipt issued by the Houston Permitting Center. This fee shall apply regardless of whether the fee or deposit is payable pursuant to this code or the *City Code*. This fee shall be in addition to all other applicable fees or deposits. When paid for a deposit or fee receipt, this fee shall neither constitute nor be refundable as a part of the deposit. This fee shall not apply when a permit or license is issued and the fee specified in Section 113.1.1 above is imposed.

113.1.4.3 Correction fee. The correction fee stated in the city fee schedule shall be charged for correction of any license or permit in those instances where the license or permit is initially issued with an error caused by incorrect information having been furnished by the applicant. A reinspection fee shall also be imposed as provided in Section 113.1.3 when the error causes a reinspection to be required.

113.1.4.4 Replacement fee. The replacement fee stated in the city fee schedule shall be charged for replacement of any permit that is lost or requires replacement for other reasons, such as a change of the permit holder's name.

[A] 113.2 Schedule of permit fees. A fee for each permit or service shall be paid as required, in accordance with the city fee schedule as established by the applicable governing authority.

[A] 113.5 Refunds. ~~The applicable governing authority is authorized to establish a refund policy. The fire code official or building official, as applicable, may authorize a refund of any fee paid hereunder that was erroneously paid or collected due to an error by a jurisdiction employee. This provision shall not be applicable if the error occurred because of incorrect information provided by the applicant.~~

The *fire code official* or building official, as applicable, may authorize a refund of not more than 90 percent of the amount in excess of the minimum permit fee paid when no inspection has been performed under a permit issued in accordance with this code. If an inspection has been performed under the permit, no refund shall be authorized. The originally paid administrative fee shall be nonrefundable.

The *fire code official* or building official, as applicable, shall not authorize a refund of any fee paid except on written application filed by the original permit holder not later than 180 calendar days after the date of fee payment.

113.6 Exemption from permits and fees. To the extent that the state and the federal government are exempt as a matter of law from compliance with this code, neither the state nor the federal government shall be required to obtain a permit for work undertaken for, by or on the premises of either of them. However, the fees set forth in this code shall be applicable to the extent that the state or the federal government elects to obtain a permit for exempt work.

Except for work undertaken for, by or on the premises of the state or the federal government, permits shall be required for work undertaken for, by or on the premises of any political subdivision or unit of government (including, but not limited to, the jurisdiction) in the same manner and to the same extent as for work performed by or for other persons. The fees prescribed in this code shall be applicable to all permits issued to or for governmental agencies except counties and the jurisdiction. The jurisdiction and counties are exempted from the payment of fees. The exemption for the jurisdiction and for counties shall extend only to work to be undertaken for, by or on the premises of the jurisdiction or a county itself as a body corporate and politic. Furthermore, the exemption for a county shall not extend to work undertaken for, by or on the premises of units of government that, although affiliated with a county, have separate governmental existence from the county, including but not limited to, hospital districts and flood control districts.

113.7 Annual fee increase. Notwithstanding any maximum fee established by this section, the fees established in this code, as adjusted according to this provision, shall be automatically increased on the first day of each subsequent calendar year as provided in Section 1-13 of the *City Code*.

SECTION 114 **STANDBY PERSONNEL**

114.1 General. The *fire code official* is authorized to require that standby inspectors be provided when deemed necessary to ensure public safety due to the number of persons present, or the nature of a performance, exhibition, display, contest or activity. The *fire code official* is also authorized to require standby personnel as a condition for:

1. The approval of any permit required in Section 105.
2. The issuance of a temporary certificate of occupancy by the building official.
3. The maintenance of exits and keeping watch for fires and other safety hazards.
4. The use of a building where required fire protection or life safety systems are impaired or out of service, in accordance with Section 901.7.
5. The use of a temporary membrane structure, tent or canopy, as provided for in Section 3104.20.

114.2 Standby inspectors. When required by the *fire code official*, standby inspectors shall be provided to ensure compliance with this code and/or other laws, including ordinances of the

jurisdiction. Standby inspectors shall be classified state-certified fire inspectors who are assigned to the Fire Prevention Bureau of the Houston Fire Department. See Section 113.1.2 for fees for the provision of standby inspectors.

CHAPTER 2

DEFINITIONS

201.3 Specific construction and terms defined in other codes. Where specific construction or terms are not addressed or defined in this code and are addressed or defined by the *City Code* or another volume of the *Construction Code* in the *International Building Code*, *International Fuel Gas Code*, *International Fire Code*, *International Mechanical Code* or *International Plumbing Code*, such terms or specific constructions shall have the meanings ascribed to them as in those codes other volumes, as applicable to the construction and proposed scope of work hereunder.

SECTION 202 DEFINITIONS

(EDITORIAL NOTE: ALL PORTIONS OF SECTION 202 NOT SHOWN REMAIN AS SET FORTH IN THE 2015 IFC.)

ALLEY. A public or private right-of-way that is not used primarily for through traffic and that provides vehicular access to rear entrances to buildings or properties that front on an adjacent street.

AUTHORITY HAVING JURISDICTION. The City of Houston. This definition shall include the City of Houston's duly authorized representatives and shall specifically include the fire chief as the chief fire code official over the Fire Code.

BATTERY SYSTEM, STATIONARY LEAD-ACID STORAGE. A system which consists of three interconnected subsystems: A rechargeable energy storage system consisting of electrochemical storage batteries, battery chargers, controls and associated electrical equipment designed to provide electrical power to a building. The system is typically used to provide standby or emergency power, an uninterruptable power supply, load shedding, load sharing or similar capabilities.

1. A lead-acid battery.
2. A battery charger.
3. A collection of rectifiers, inverters, converters and associated electrical equipment as required for a particular application.

BATTERY TYPES.

Flow battery. A type of storage battery that includes chemical components dissolved in two different liquids. Ion exchange, which provides the flow of electrical current, occurs through the membrane while both liquids circulate in their respective spaces.

Lead-acid battery. A storage battery that is comprised of lead electrodes immersed in sulphuric acid electrolyte.

Lithium-ion battery. A storage battery that consists of lithium ions embedded in a carbon graphite or nickel metal oxide substrate. The electrolyte is a carbonate mixture or a gelled

polymer. The with lithium ions serving as are the charge carriers of the battery. The electrolyte is a polymer mixture of carbonates with an inorganic salt and can be in a liquid or a gelled polymer form. Lithiated metal oxide is typically a cathode and forms of carbon or graphite typically form the anode.

Lithium metal polymer battery. A storage battery that is comprised of nonaqueous liquid or polymerized electrolytes, which provide ionic conductivity between lithiated positive active material electrically separated from metallic lithium or lithiated negative active material.

Nickel-cadmium (Ni-Cd) battery. An alkaline storage battery in which the positive active material is nickel oxide, the negative contains cadmium and the electrolyte is potassium hydroxide.

Nonrecombinant battery. A storage battery in which, under conditions of normal use, hydrogen and oxygen gasses created by electrolysis are vented into the air outside of the battery.

Preengineered stationary storage battery system. An energy storage system consisting of batteries, a battery management system, components and modules that are produced in a factory, designed to comprise the system when assembled on the job site.

Prepackaged stationary storage battery system. An energy storage system consisting of batteries, a battery management system, components and modules that is factory assembled and shipped as a complete unit for installation at the job site.

Recombinant battery. A storage battery in which, under conditions of normal use, hydrogen and oxygen gases created by electrolysis are converted back into water inside the battery instead of venting into the air outside of the battery.

Sodium-beta storage battery. A storage battery, also referred to as a Na-beta battery or NBB, which uses a solid beta-alumina electrolyte membrane that selectively allows sodium ion transport between a positive electrode such as metal halide and a negative sodium electrode.

Stationary storage battery. A group of electrochemical cells interconnected to supply a nominal voltage of DC power to a suitably connected electrical load, designed for service in a permanent location. The number of cells connected in a series determines the nominal voltage rating of the battery. The size of the cells determines the discharge capacity of the entire battery. After discharge, it may be restored to a fully charged condition by an electric current flowing in a direction opposite to the flow of current when the battery is discharged.

Valve-regulated lead-acid (VRLA) battery. A lead-acid battery consisting of sealed cells furnished with a valve that opens to vent the battery whenever the internal pressure of the battery exceeds the ambient pressure by a set amount. In VRLA batteries, the liquid electrolyte in the cells is immobilized in an absorptive glass mat (AGM cells or batteries) or by the addition of a gelling agent (gel cells or gelled batteries).

Vented (flooded) lead-acid battery. A lead-acid battery consisting of cells that have electrodes immersed in liquid electrolyte. Flooded lead-acid batteries have a provision for the user to add water to the cell and are equipped with a flame-arresting vent which permits the escape of hydrogen and oxygen gas from the cell in a diffused manner such that a spark, or other ignition source, outside the cell will not ignite the gases inside the cell.

BUILDING CODE. The *City of Houston Building Code*, as adopted and amended by this jurisdiction.

[A] BUILDING OFFICIAL. The ~~officer or other designated authority charged with the administration and enforcement of the *International Building Code*~~ director of Houston Public Works or a ~~the~~ duly authorized representative ~~designated by the director to act as the chief construction code enforcement official of the jurisdiction; also known as *chief building official*~~. The term also includes the Houston Airport Systems building official who may be designated by the building official to perform *Construction Code* permitting and enforcement activities on Houston Airport Systems premises.

CAPACITOR ARRAY. An arrangement of individual capacitor modules in close proximity to each other, mounted on storage racks or in cabinets or other enclosures.

CAPACITOR ENERGY STORAGE SYSTEM. A stationary, rechargeable energy storage system consisting of capacitors, chargers, controls and associated electrical equipment designed to provide electrical power to a building or facility. The system is typically used to provide standby or emergency power, an uninterruptable power supply, load shedding, load sharing or similar capabilities.

Preengineered capacitor energy storage system. A capacitor energy storage system consisting of capacitors, an energy management system, components and modules that are produced in a factory, designed to comprise the system when assembled on the job site.

Prepackaged capacitor energy storage system. A capacitor energy storage system consisting of capacitors, an energy management system, components and modules that is factory assembled and then shipped as a complete unit for installation at the job site.

CERTIFICATE OF COMPLIANCE. A certificate stating that materials and products meet specified standards or that the scope of work under a specific permit was done in compliance with approved construction documents. Any reference in the *Construction Code* to a “CC”, certificate of completion, or a certificate of inspection issued by this jurisdiction, is a reference to a certificate of compliance as defined herein.

CITY CODE. The *Code of Ordinances, City of Houston, Texas*.

CITY FEE SCHEDULE. The schedule of fees charged by the city for various permits, licenses, authorizations and services, which is maintained on the city’s website.

CODE OFFICIAL. The Houston Fire Department and Building Code Enforcement employees, including but not limited to, plan analysts, field inspectors, and other technical staff charged with the administration and enforcement of this code as specifically delegated by the *Authority Having Jurisdiction*. The *code official* is authorized to approve designs, construction, equipment, materials, installations, processes, procedures, practices, and other duties necessary to administer, verify and document compliance with the *Houston Construction Code*, ordinances, and other laws and policies as specifically delegated by the *chief building official, fire chief, and the Authority Having Jurisdiction*.

[BG] CONGREGATE LIVING FACILITIES. A building or part thereof that contains sleeping units where residents share bathroom and/or kitchen facilities for living, sleeping and sanitation, as required by this code, and may include facilities for eating and cooking, for occupancy by other than a family. A congregate living facility may be a shelter, convent, monastery, dormitory, fraternity house, or sorority house, but does not include jails, hospitals, nursing homes, hotels or boarding houses.

CONSTRUCTION CODE. Has the meaning ascribed in Section 1-2 of the *City Code*.

[BS] DANGEROUS. Any building meeting the definition of a dangerous building as defined in Chapter 10, Article IX, of the *City Code*, or any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The building or structure has collapsed, has partially collapsed, has moved off its foundation, or lacks the necessary support of the ground.
2. There exists a significant risk of collapse, detachment or dislodgement of any portion, member, appurtenance or ornamentation of the building or structure under service loads.

[BE] EGRESS COURT. A court or yard with a minimum width of 36 inches which provides access to a public way for one or more exits or emergency escape and rescue openings.

ELECTRICAL CODE. The *City of Houston Electrical Code*, as adopted and amended by this jurisdiction.

ENERGY MANAGEMENT SYSTEM. An electronic system that protects stationary storage batteries from operating outside their safe operating parameters, and generates an alarm and trouble signal for off normal conditions.

ENTERPRISE. A use or activity on, or of, a tract of land or within a building or structure, in whole or in part, that includes inside and outside storage or use of hazardous materials exceeding the maximum allowable quantity limits (MAQs) per control area that constitutes a Group H-1, H-2 or H-3 occupancy as described in Section 307 of the *Building Code*. The term also includes any Group H-4 occupancy, in whole or in part, that includes storage (both interior and exterior) of hazardous materials exceeding the MAQs per control area as described in the previously identified *Building Code* Section 307 if any highly toxic material is manufactured, processed, generated, stored or used. Otherwise, Group H-4 occupancies are not included. The term also does not include:

1. Any public water or wastewater treatment facility that is being operated under regulations promulgated by state or federal agencies, including but not limited to the United States Environmental Protection Agency and the Texas Commission on Environmental Quality;
2. Areas or spaces up to 500 square feet each in research labs operated under the authority of a hospital, college, or university, and classified as H-2, H-3 or H-4, with an aggregate maximum area of ten percent on each floor; or

3. Any area or space containing fuel storage for generators, fire pumps, above or underground fuel storage associated with motor fuel-dispensing facilities.

ENTERPRISE PERMIT. A current and valid license or document issued by the jurisdiction's director of planning and development authorizing the holder to operate an enterprise issued under Chapter 28, Article VII, of the *City Code*. Except where specific reference is made to a restricted permit or an unrestricted permit, the term "permit" includes a registration of a nonconforming enterprise prior to February 16, 1997.

EXISTING BUILDING CODE. The *City of Houston Existing Building Code*, as adopted and amended by this jurisdiction.

FAMILY. An individual or two or more persons related by blood or marriage or a group of not more than 10 persons (excluding live in personnel hired to assist the family) who need not be related by blood or marriage living together in a dwelling unit.

FIRE CHIEF. Has the meaning ascribed in Section 34-53 of the *City Code*.

FIRE CODE. The *City of Houston Fire Code*, as adopted and amended by this jurisdiction.

FIRE CODE OFFICIAL. The fire chief or other designated authority. The jurisdiction's fire marshal, who is charged with the administration and enforcement of the this code, or a duly authorized representative.

FUEL CELL POWER SYSTEM, STATIONARY. A stationary energy generation system that converts the chemical energy of a fuel and oxidant to electric energy (DC or AC electricity) by an electrochemical process.

Field-fabricated fuel cell power system. A stationary fuel cell power system that is assembled at the job site and is not a preengineered or prepackaged factory-assembled fuel cell power system.

Preengineered fuel cell power system. A stationary fuel cell power system consisting of components and modules that are produced in a factory, and shipped to the job site for assembly.

Prepackaged fuel cell power system. A stationary fuel cell power system that is factory assembled as a single, complete unit and shipped as a complete unit for installation at the job site.

GAS DETECTION SYSTEM. A system or portion of a combination system that utilizes one or more stationary sensors to detect the presence of a specified gas at a specified concentration and initiate one or more responses required by this code, such as notifying a responsible person, activating an alarm signal, or activating or deactivating equipment. A self-contained gas detection and alarm device is not classified as a gas detection system.

GRADE, ROUGH. The stage at which the grade approximately conforms to the approved plan.

GRADING. To level to a smooth horizontal or sloping surface.

GRADING, ENGINEERED. Any *grading* in excess of 1,000 cubic yards.

GRADING, REGULAR. Any *grading* less than or equal to 1000 cubic yards.

[BG] HIGH-RISE BUILDING. A building with ~~an occupied~~ floors located more than 75 feet (22,860 mm) above the lowest level of fire department vehicle access.

Exception: For the purpose of establishing a building as a high-rise, the uppermost floor located more than 75 feet above the lowest level of fire department access used for housing building systems mechanical equipment is exempt.

HIGHWAY. A public street, public alley or public road.

HIGHWAY, STREET OR ROAD. A general term denoting a public way for the purpose of vehicle travel, including the entire area within the right-of-way.

INTERNATIONAL BUILDING CODE. Any reference herein to the *International Building Code* shall be construed as referring to the *City of Houston Building Code*, as adopted and amended by this jurisdiction.

INTERNATIONAL EXISTING BUILDING CODE. Any reference herein to the *International Existing Building Code* shall be construed as referring to the *City of Houston Existing Building Code*, as adopted and amended by this jurisdiction.

INTERNATIONAL FIRE CODE. Any reference herein to the *International Fire Code* shall be construed as referring to the *City of Houston Fire Code*, as adopted and amended by this jurisdiction.

INTERNATIONAL FUEL GAS CODE. Any reference herein to the *International Fuel Gas Code* shall be construed as referring to the *City of Houston Plumbing Code*, as adopted and amended by this jurisdiction.

INTERNATIONAL MECHANICAL CODE. Any reference herein to the *International Mechanical Code* shall be construed referring to the *City of Houston Mechanical Code*, as adopted and amended by this jurisdiction.

INTERNATIONAL PLUMBING CODE. Any reference herein to the *International Plumbing Code* shall be construed referring to the *City of Houston Plumbing Code*, as adopted and amended by this jurisdiction.

INTERNATIONAL RESIDENTIAL CODE. Any reference herein to the *International Residential Code* shall be construed referring to the *City of Houston Residential Code* adopted and amended by this jurisdiction.

[A] JURISDICTION. The City of Houston. ~~The governmental unit that has adopted this code under due legislative authority.~~

MECHANICAL CODE. The *City of Houston Mechanical Code*, as adopted and amended by this jurisdiction.

MOBILE FOOD PREPARATION VEHICLES. Vehicles that contain cooking equipment that produce smoke or grease-laden vapors for the purpose of preparing and serving food to the public including mobile food units as defined in Chapter 20 of the *City Code*. For the purpose of this code, vehicles intended for private recreation shall not be considered a mobile food unit or mobile food preparation vehicles.

MOBILE FOOD UNIT. A food service establishment that is vehicle-mounted or wheeled and is capable of being readily moveable.

MULTI-FAMILY RESIDENTIAL STRUCTURE. A structure constructed with three or more attached single-family residences', dwelling units, townhouses, apartments or condominiums.

OCCUPANCY CLASSIFICATION. For the purposes of this code, certain occupancies are defined as follows:

{EDITORIAL NOTE: PORTIONS OF THIS DEFINITION NOT SHOWN SHALL REMAIN AS SET FORTH IN THE 2015 IFC.}

[BG] Educational Group E. Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through the 12th grade.

[BG] Accessory to places of religious worship. Religious educational rooms and religious auditoriums, which are accessory to places of religious worship in accordance with Section 508.3.1 of the *International Building Code* and have *occupant loads* of less than 100 per room or space shall be classified as Group A-3 occupancies.

[BG] Group E, day care facilities. This group includes buildings and structures or portions thereof occupied by more than five children older than 2½ years of age who receive educational, supervision or *personal care services* for less than 24 hours per day.

[BG] Within places of worship. Rooms and spaces within places of worship providing such care during religious functions shall be classified as part of the primary occupancy.

[BG] Five or fewer children. A facility having five or fewer children receiving such care shall be classified as part of the primary occupancy.

[BG] Five or fewer children in a dwelling unit. A facility such as the above within a dwelling unit and having five or fewer children receiving such care shall be classified as a Group R-3 occupancy or shall comply with the ~~*International Residential Code*~~.

Specific requirements. Daycare and educational occupancies shall not allow children of second grade or lower above the *level of exit discharge* unless the following provisions are met:

1. The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1; and
2. When children above the second grade are located on the same level, the children of the second grade or lower shall have at least

two means of egress to the exterior for the exclusive use of those children.

High-hazard Group H. High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or *health hazard* in quantities in excess of those allowed in *control areas* complying with Section 5003.8.3, based on the maximum allowable quantity of limits ~~for~~ per *control areas* set forth in Tables 5003.1.1(1) and 5003.1.1(2). Hazardous occupancies are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this code and the requirements of Section 415 of the *International Building Code*. Hazardous materials stored or used on top of roofs or canopies shall be classified as outdoor storage or use and shall comply with this code.

Uses other than Group H. The storage, use or handling of hazardous materials as described in one or more of the following items shall not cause the occupancy to be classified as Group H, but it shall be classified as the occupancy that it most nearly resembles:

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Chapter 24 of this code and Section 416 of the *International Building Code*.
2. Wholesale and retail sales and storage of flammable and *combustible liquids* in mercantile occupancies conforming to Chapter 57.
3. Closed piping system containing flammable or *combustible liquids* or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize *combustible liquid* solvents having a *flash point* of 140°F (60°C) or higher in *closed systems* employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* in accordance with Section 707 of the *International Building Code* or 1-hour *horizontal assemblies* in accordance with Section 711 of the *International Building Code*, or both.
5. Cleaning establishments that utilize a liquid solvent having a *flash point* at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterruptible power supply or telecommunication facilities, provided that the batteries are equipped with safety venting caps and ventilation is provided in accordance with the *International Mechanical Code*.

10. *Corrosive* personal or household products in their original packaging used in retail display.
11. Commonly used *corrosive* building materials.
12. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of Chapter 51.
13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the *maximum allowable quantity per control area* in Group M or S occupancies complying with Section 5003.8.3.5.
14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements of this code.
15. Stationary fuel cell power systems installed in accordance with this code.
16. Capacity energy storage systems in accordance with this code.
17. Group B higher education laboratory occupancies complying with Section 428 of the *Building Code* and Chapter 38 of this code.
18. Any building owned by the jurisdiction, located on any city airport, that is leased and used by a certificated air carrier for the in-transit storage of hazardous materials for a period of time that does not exceed 72 hours from the time such hazardous material is placed in the building until it is permanently removed.

NOTES:

1. Certificated air carrier is defined as: a U.S. or foreign airline operating scheduled or non-scheduled commercial services pursuant to certificates or exemptions issued by the United States Department of Transportation pursuant to 49 USC Sections 40109, 41102, 41103, or 41302, and certificates or exemptions issued by the United States Federal Aviation Administration pursuant to 14 CFR Parts 121, 125, 129 or 135.
2. City airport is defined in Chapter 9 of the *City Code*.
3. In-transit storage is defined as: the storage of materials which will be on-loaded onto or off-loaded from an aircraft owned, leased or operated by a certificated air carrier.

[BG] Institutional Group I-4, day care facilities. Institutional Group I-4 shall include buildings and structures occupied by more than five persons of any age who receive custodial care for less than 24 hours by persons other than parents or guardians, relatives

by blood, marriage, or adoption, and in a place other than the home of the person cared for. This group shall include, but not be limited to, the following:

Adult day care

Child day care

[BG] Classification as Group E. A child day care facility that provides care for more than five but not more than 100 children 2½ years or less of age, where the rooms in which the children are cared for are located on a *level of exit discharge* serving such rooms and each of these child care rooms has an *exit* door directly to the exterior, shall be classified as Group E.

[BG] Within a place of religious worship. Rooms and spaces within places of religious worship providing such care during religious functions shall be classified as part of the primary occupancy.

[BG] Five or fewer occupants receiving care. A facility having five or fewer persons receiving custodial care shall be classified as part of the primary occupancy.

[BG] Five or fewer occupants receiving care in a dwelling unit. A facility such as the above within a *dwelling unit* and having five or fewer persons receiving custodial care shall be classified as a Group R-3 occupancy or shall comply with the *International Residential Code*.

Specific requirements. Daycare and educational occupancies shall not allow children of second grade or lower above the *level of exit discharge* unless the following provisions are met:

1. The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1; and
2. When children above the second grade are located on the same level, the children of the second grade or lower shall have at least two means of egress to the exterior for the exclusive use of those children.

[BG] Residential Group R-3. Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Boarding houses (nontransient) with 16 or fewer occupants

Boarding houses (transient) with 10- or fewer occupants

Buildings that do not contain more than two *dwelling units*

Care facilities that provide accommodations for five or fewer persons receiving care

Congregate living facilities (nontransient) with 16 or fewer occupants

Congregate living facilities (transient) with 10 or fewer occupants

Lodging houses with five or fewer guest rooms

[BG] Care facilities within a dwelling. Care facilities for five or fewer persons receiving care, including licensed and registered in home day cares, that are within a single-family dwelling are permitted to comply with the *International Residential*

~~Code provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or Section P2904 of the *International Residential Code*.~~

[BG] Lodging houses. Owner-occupied *lodging houses* with five or fewer guest rooms shall be permitted to be constructed in accordance with the ~~*International Residential Code*~~.

ONE- AND TWO-FAMILY DWELLING. An individual free-standing structure containing not more than two *dwelling units*, also referred to as a *dwelling*, duplex or *single-family dwelling* depending on the number of *dwelling units* within.

OPEN BUILDING (For Chapter 9). A building having each perimeter wall at least 80 percent open.

PLUMBING CODE. The *City of Houston Plumbing Code*, as adopted and amended by this jurisdiction.

PUBLIC WAY. A street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than ~~40~~ 20 feet (~~3048~~ 6,096 mm).

RESIDENTIAL CODE. The *City of Houston Residential Code*, as adopted and amended by this jurisdiction.

RIGHT-OF-WAY. The entire area between the property boundary lines of every way (including but not limited to roads, streets, alleys, highways, boulevards, bridges, tunnels, or similar thoroughfares), whether acquired by purchase, grant, or dedication by the state or federal government, or acceptance by the authority having jurisdiction, for public use.

SECTION 105 HEARING OFFICIAL. The person or persons designated in writing by the mayor of the jurisdiction to consider (a) applications by the *fire code official* to revoke permits issued under authority of Section 105; (b) appeals of denials of permits authorized by Section 105; and (c) appeals of orders issued under authority of Section 105, ***except that*** appeals of orders issued under authority of Section 105.5.3 shall be considered as provided elsewhere in this code. A Section 105 hearing official may be an employee of the Houston Fire Department, except that no person who has taken part, directly or indirectly, in any decision, order, or investigation related to the subject of the hearing shall serve as a Section 105 hearing official. A Section 105 hearing official shall act without bias for or against any hearing participant, including the jurisdiction's fire department.

SERIOUS AND IMMEDIATE FIRE HAZARD. A condition that violates this code and that in the absence of immediate action by the *fire code official* or a fire department official in charge of an incident presents a reasonable likelihood of causing serious bodily injury to a human being.

SINGLE-FAMILY DWELLING. An individual free-standing residential structure intended to serve a single-family, or household, as a *dwelling* and/or other uses authorized by the *Building Code* and *Residential Code*.

SMOKE DETECTOR:

A *listed* device that senses visible or invisible particles of combustion.

A smoke alarm with sealed 10-year lithium batteries.

A sealed long-life (10 years or more) battery smoke alarm.

STANDBY INSPECTOR. A state-certified fire inspector assigned by the *fire code official* as deemed necessary to ensure public safety and compliance with this code in accordance with Section 114.

STATIONARY BATTERY ARRAY. An arrangement of individual stationary storage batteries in close proximity to each other, mounted on storage racks or in modules, battery cabinets or other enclosures.

TEXAS ACCESSIBILITY STANDARDS (TAS). The accessibility standard applicable to buildings and facilities constructed within the state of Texas as promulgated by the Texas Department of Licensing and Regulation pursuant to *Texas Government Code* Chapter 469.

[A] TOWNHOUSE. A multi-family residential structure constructed with three or more attached single-family dwelling units ~~constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on not less than two sides, which may or may not include lot lines or property lines separating the dwelling units.~~

TRADE SHOW. A temporary commercial exhibition or show for the purpose of display of manufactured products to prospective customers. See Section 105.6.5.

SECTION 203

DISTRICTS OF LIMITATIONS

203.1 General. The districts referred to in this code in which the storage of explosives and blasting agents, flammable and combustible liquids, compressed and liquefied natural gases, cryogenic fluids and LP-gases may be prohibited or restricted, are hereby established.

203.1.1 District of Limitations No. 1. Beginning at the intersection of US Highway 59 with Pierce Street; thence, northerly along US Highway 59 to the centerline of Buffalo Bayou; thence, westerly following the meanders of the centerline of Buffalo Bayou to Franklin Street; thence, westerly along Franklin Street to Interstate Highway 45; thence, southerly along Interstate Highway 45 to Pierce Street; thence, easterly along Pierce Street to U. S. Highway 59, the place of beginning.

203.1.2 District of Limitations No. 2. Beginning at the intersection of Main Street with Cambridge Street; thence, southerly along Main Street to Holcombe Boulevard; thence easterly along Holcombe Boulevard to Braeswood Boulevard; thence northerly along Braeswood Boulevard to North MacGregor Drive; thence northerly along North MacGregor Drive to Cambridge Street; thence westerly along Cambridge Street to Main Street, the place of beginning.

CHAPTER 3

GENERAL REQUIREMENTS

301.2 Permits. Permits shall be required as set forth in Section 105.6, along with the permit fees required in Section 113, in the city fee schedule for the activities or uses regulated by Sections 303, 304, 306, 307, 308 and 315.

303.1 Transporting. Asphalt (tar) kettles shall not be transported over any highway, road or street when the heat source for the kettle is operating. Kettle lids shall be closed and latched while in transit. Kettle contents shall be cooled to a viscosity such that they cannot spill should the kettle overturn while in transit.

Exception: Asphalt (tar) kettles in the process of patching road surfaces.

303.2 Location. Asphalt (tar) kettles shall not be located within 20 feet (6,096 mm) of any combustible material, combustible building surface or any building opening and within a controlled area identified by the use of traffic cones, barriers or other *approved* means. Asphalt (tar) kettles and pots shall not be utilized inside ~~or on the roof of~~ a building or structure. Asphalt (tar) kettles shall not be used on the roof of a building or structure, except in accordance with Houston Fire Department LSB Standard No. 11, "Roofing Operations." Roofing kettles and operating asphalt (tar) kettles shall not block *means of egress*, gates, roadways or entrances.

303.3 Location of fuel containers. Fuel containers shall be located not less than 10 feet (3,048 mm) from the burner. All portable fuel containers shall be adequately secured to prevent containers from falling or being knocked over.

Exceptions:

1. Containers properly insulated from heat or flame are allowed to be within 2 feet (610 mm) of the burner.
2. LP-gas containers connected for use shall be kept a minimum of 15 feet (4,572 mm) from burners. LP-gas containers not connected for use shall be kept a minimum of 25 feet (7,620 mm) from burners.

304.3.3 Capacity exceeding 1.5 cubic yards. Dumpsters and containers with an individual capacity ~~of between~~ 1.5 cubic yards [40.5 cubic feet (1.15 m³)] and 15 cubic yards [405 cubic feet (12 m³)] ~~or more~~ shall not be stored in buildings or placed within 5 feet (1,524 mm) of combustible walls, metals walls, building openings or combustible roof eave lines. Dumpsters and containers 15 cubic yards [405 cubic feet (12 m³)] capacity, or more, shall be a minimum of 10 feet (3,048 mm) from combustible walls, metal walls, building openings, or roof eave lines. Dumpsters and containers shall not be placed on public sidewalks, streets, or other public property. No rubbish or combustible waste shall be placed, stored, or allowed to accumulate outside of dumpsters or containers. Lids of dumpsters shall be kept closed at all times.

Exceptions:

1. Dumpsters or containers in areas protected by an *approved automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Storage in a structure shall not be prohibited where the structure is of Type I or IIA construction, located not less than 10 feet (3,048 mm) from other buildings and used exclusively for dumpster or container storage.
3. Dumpsters placed in the street right-of-way by government authorities on a temporary basis for neighborhood clean-up campaigns, provided neither the roadway, nor fire apparatus access, nor fire hydrants are obstructed and no other location is practicably available.
4. Dumpsters placed on a temporary basis for demolition or construction work under a valid building permit, provided neither the roadway, nor fire apparatus access, nor fire hydrants are obstructed and no other location is practicably available.
5. Approved containers placed for collection on street right-of-way as authorized by Chapter 39 of the City Code.

304.4 Dumpster information required. The name of the dumpster company or responsible party and a contact telephone number shall be placed on dumpsters and other bulk containers as provided by Section 39-97 of the City Code.

305.1 Clearance from ignition sources. Clearance between ignition sources, such as luminaires, heaters, flame-producing devices and combustible materials, shall be maintained in an *approved* manner. The clearance between combustible materials and unit heaters, radiant heaters, duct furnaces, flues and other heat producing devices shall be in accordance with the clearance shown on the product listing, but in no case shall be less than 3 feet (914.4 mm) in all directions, except as provided for in the Building Code.

307.1 General. A person shall not kindle or maintain or authorize to be kindled or maintained any open burning or recreational fire ~~unless conducted and approved in accordance with Sections 307.1.1 through 307.5.~~

Exception: When approved by the fire code official, and where consistent with state, federal and local environmental laws and regulations, open burning shall be conducted in accordance with Houston Fire Department LSB Standard No. 16, "Open Burning and Recreational Fires." A permit is required for any fire authorized under this exception.

307.1.1 Prohibited open burning. Open burning that is offensive or objectionable because of smoke or odor emissions or shall be prohibited when atmospheric conditions or local circumstances make such fires hazardous shall be prohibited.

Exception: Prescribed burning for the purpose of reducing the impact of wildland fire when authorized by the *fire code official*.

311.1.1 Abandoned premises. Buildings, structures and premises for which an owner cannot be identified or located by dispatch of a certificate of mailing to the last known or registered address, which persistently or repeatedly become unprotected or unsecured, which have been occupied by unauthorized persons or for illegal purposes, or which present a danger of structural collapse or fire spread to adjacent properties shall be considered abandoned, declared unsafe and abated by demolition or rehabilitation in accordance with the *International Property Maintenance Code* and the *International Building Code* procedures set forth in Chapter 10, Articles VIII and IX, of the *City Code*.

315.7 Outdoor pallet storage. Pallets stored outdoors shall comply with Sections 315.7 through 315.7.7. Pallets stored within a building shall be protected in accordance with Chapter 32.

315.7.1 Storage beneath overhead projections from buildings. Where buildings are equipped throughout with an *automatic sprinkler system*, the outdoor storage of pallets under eaves, canopies or other projections or overhangs is prohibited except where automatic sprinklers are installed under such eaves, canopies or other projections or overhangs.

315.7.2 Distance to lot line. Pallet storage shall not be located within 10 feet (3,048 mm) of a *lot line*.

315.7.3 Storage height. Pallet storage shall not exceed 20 feet (6,096 mm) in height.

315.7.4 Pallet pile stability and size. Pallet stacks shall be arranged to form stable piles. Individual pallet piles shall cover an area not greater than 400 square feet (37 m²).

315.7.5 Pallet types. Pallets shall be all wood, with slatted or solid top or bottom, with metal fasteners, or shall be plastic or composite pallets, listed and labeled in accordance with UL 2335 or FM 4996. Plastic pallets shall be both solid and gridded deck, independent of the pallet manufacturing process, type of resin used in fabrication or geometry of the pallet.

315.7.6 Pile separation distance. In addition to the other requirements of this section, pallet stacks and piles shall be separated in accordance with Sections 315.7.6.1 and 315.7.6.2.

315.7.6.1 Building separation. Pallets stacks and piles shall be separated from buildings in accordance with Table 315.7.6(1) for wood pallets and Table 315.7.6(2) for plastic pallets.

315.7.6.2 Separation from other pallets and on-site storage. Pallets shall be separated from other pallet piles and other storage in accordance with Table 315.7.6(3) for wood pallets and Table 315.7.6(4) for plastic pallets.

315.7.7 Prohibited locations. Pallets shall not be stored underneath high-voltage transmission lines, elevated roadways or elevated railways.

TABLE 315.7.6(1)
SEPARATION DISTANCE BETWEEN WOOD PALLET STACKS AND BUILDINGS

<u>WALL CONSTRUCTION</u>	<u>OPENING TYPE</u>	<u>WOOD PALLET SEPARATION DISTANCE (feet)</u>		
		<u>≤ 51 Pallets</u>	<u>51 to 200 Pallets</u>	<u>> 200 Pallets</u>
<u>Masonry</u>	<u>None</u>	<u>2</u>	<u>2</u>	<u>2</u>

<u>Masonry</u>	<u>Fire-rated glazing with open sprinklers</u>	<u>2</u>	<u>5</u>	<u>20</u>
<u>Masonry</u>	<u>Fire-rated glazing</u>	<u>10</u>	<u>5</u>	<u>20</u>
<u>Masonry</u>	<u>Plain glass with open sprinklers</u>	<u>10</u>	<u>5</u>	<u>20</u>
<u>Noncombustible</u>	<u>None</u>	<u>10</u>	<u>5</u>	<u>20</u>
<u>Wood with open sprinklers</u>	<u>=</u>	<u>10</u>	<u>5</u>	<u>20</u>
<u>Wood</u>	<u>None</u>	<u>15</u>	<u>30</u>	<u>90</u>
<u>Any</u>	<u>Plain glass</u>	<u>15</u>	<u>30</u>	<u>90</u>

For SI: 1 foot = 304.8 mm.

TABLE 315.7.6(2)
SEPARATION DISTANCE BETWEEN PLASTIC PALLET STACKS AND BUILDINGS

<u>WALL CONSTRUCTION</u>	<u>OPENING TYPE</u>	<u>PLASTIC PALLET SEPARATION DISTANCE (feet)</u>		
		<u>< 51 Pallets</u>	<u>51 to 200 Pallets</u>	<u>> 200 Pallets</u>
<u>Masonry</u>	<u>None</u>	<u>2</u>	<u>2</u>	<u>2</u>
<u>Masonry</u>	<u>Fire-rated glazing with open sprinklers</u>	<u>10</u>	<u>20</u>	<u>50</u>
<u>Masonry</u>	<u>Fire-rated glazing</u>	<u>15</u>	<u>40</u>	<u>100</u>
<u>Masonry</u>	<u>Plain glass with open sprinklers</u>	<u>15</u>	<u>40</u>	<u>100</u>
<u>Noncombustible</u>	<u>None</u>	<u>15</u>	<u>40</u>	<u>100</u>
<u>Wood with open sprinklers</u>	<u>=</u>	<u>15</u>	<u>40</u>	<u>100</u>
<u>Wood</u>	<u>None</u>	<u>30</u>	<u>80</u>	<u>150</u>
<u>Any</u>	<u>Plain glass</u>	<u>30</u>	<u>80</u>	<u>150</u>

For SI: 1 foot = 304.8 mm.

TABLE 315.7.6(3)
SEPARATION FROM OTHER PALLET PILES AND ON-SITE STORAGE (WOOD PALLETS)

	<u>WOOD PALLET SEPARATION DISTANCE (feet)</u>		
	<u>< 51 Pallets</u>	<u>51 to 200 Pallets</u>	<u>> 200 Pallets</u>
<u>Between pallet piles</u>	<u>7.5</u>	<u>15</u>	<u>45</u>
<u>Other on-site storage</u>	<u>7.5</u>	<u>15</u>	<u>45</u>

For SI: 1 foot = 304.8 mm.

TABLE 315.7.6(4)
SEPARATION FROM OTHER PALLET PILES AND ON-SITE STORAGE (PLASTIC
PALLETS)

	WOOD PALLET SEPARATION DISTANCE (feet)		
	<u>< 51 Pallets</u>	<u>51 to 200 Pallets</u>	<u>> 200 Pallets</u>
<u>Between pallet piles</u>	<u>15</u>	<u>40</u>	<u>75</u>
<u>Other on-site storage</u>	<u>15</u>	<u>40</u>	<u>75</u>

For SI: 1 foot = 304.8 mm.

SECTION 319

MOBILE FOOD UNITS AND OTHER MOBILE FOOD PREPARATION VEHICLES

319.1 General. Mobile food units, and other mobile food preparation vehicles that are equipped with appliances that produce smoke or grease-laden vapors shall comply with this section, the provisions of the Houston Health Code and Chapter 20 of the *City Code*, whichever is more restrictive.

319.2 Permit required. Permits shall be required as set forth in Section 105.6 and Chapter 20 of the *City Code*.

319.3 Exhaust hood. Cooking equipment that produces grease-laden vapors shall be provided with a kitchen exhaust hood in accordance with Section 609.

319.4 Fire protection. Fire protection shall be provided in accordance with Sections 319.4.1 and 319.4.2.

319.4.1 Fire protection for cooking equipment. Cooking equipment shall be protected by automatic fire extinguishing systems in accordance with Section 904.12. All systems shall be in place one year after adoption of this code.

319.4.2 Fire extinguisher. Portable fire extinguishers shall be provided in accordance with Section 904.12.5.

319.5 Appliance connection to fuel supply piping. Gas cooking appliances shall be secured in place and connected to fuel-supply piping with an appliance connector complying with ANSI Z21.69/CSA 6.16. The connector installation shall be configured in accordance with the manufacturer's installation instructions. Movement of appliances shall be limited by restraining devices installed in accordance with the connector and appliance manufacturers' instructions.

319.6 Cooking oil storage containers. Cooking oil storage containers within mobile food preparation vehicles shall have a maximum aggregate volume not more than 120 gallons (454 L), and shall be stored in such a way as to not be toppled or damaged during transport.

319.7 Cooking oil storage tanks. Cooking oil storage tanks within mobile food preparation vehicles shall comply with Sections 319.7.1 through 319.7.5.2.

319.7.1 Metallic storage tanks. Metallic cooking oil storage tanks shall be *listed* in accordance with UL 80 or UL 142 and shall be installed in accordance with the tank manufacturer's instructions.

319.7.2 Nonmetallic storage tanks. Nonmetallic cooking oil storage tanks shall be installed in accordance with the tank manufacturer's instructions and shall comply with both of the following:

1. Tanks shall be *listed* for use with cooking oil, including maximum temperature to which the tank will be exposed during use.
2. Tank capacity shall not exceed 200 gallons (757 L) per tank.

319.7.3 Cooking oil storage system components. Metallic and nonmetallic cooking oil storage system components shall include, but are not limited to, piping, connections, fittings, valves, tubing, hose, pumps, vents and other related components used for the transfer of cooking oil.

319.7.4 Design criteria. The design, fabrication and assembly of system components shall be suitable for the working pressures, temperatures and structural stresses to be encountered by the components.

319.7.5 Tank venting. Normal and emergency venting shall be provided for cooking oil storage tanks.

319.7.5.1 Normal vents. Normal vents shall be located above the maximum normal liquid line and shall have a minimum effective area not smaller than the largest filling or withdrawal connection. Normal vents are not required to vent to the exterior.

319.7.5.2 Emergency vents. Emergency relief vents shall be located above the maximum normal liquid line and shall be in the form of a device or devices that will relieve excessive internal pressure caused by an exposure fire. For nonmetallic tanks, the emergency relief vent shall be allowed to be in the form of construction. Emergency vents are not required to discharge to the exterior.

319.8 LP-gas systems. Where LP-gas systems are used to provide fuel for cooking appliances, such systems shall comply with Chapter 61 and Sections 319.8.1 through 319.8.5.

319.8.1 Maximum aggregate volume. The maximum aggregate capacity of LP-gas containers transported on the vehicle and used to fuel cooking appliances only shall not exceed 200 pounds (91 kg) propane capacity.

319.8.2 Protection of container. LP-gas containers installed on the vehicle shall be securely mounted and restrained to prevent movement.

319.8.3 LP-gas container construction. LP-gas containers shall be manufactured in compliance with the requirements of NFPA 58.

319.8.4 Protection of system piping. LP-gas system piping, including valves and fittings, shall be adequately protected to prevent tampering, impact damage, and damage from vibration.

319.8.5 LP-gas alarms. A *listed* LP-gas alarm shall be installed within the vehicle in the vicinity of LP-gas systems components, in accordance with the manufacturer's instructions.

319.9 CNG systems. Where CNG systems are used to provide fuel for cooking appliances, such systems shall comply with Sections 319.9.1 through 319.9.4.

319.9.1 CNG containers supplying only cooking fuel. CNG containers installed solely to provide fuel for cooking purposes shall be in accordance with Sections 319.9.1.1 through 319.9.1.3.

319.9.1.1 Maximum aggregate volume. The maximum aggregate capacity of CNG containers transported on the vehicle shall not exceed 1,300 pounds (590 kg) water capacity.

319.9.1.2 Protection of container. CNG containers shall be securely mounted and restrained to prevent movement. Containers shall not be installed in locations subject to a direct vehicle impact.

319.9.1.3 CNG container construction. CNG containers shall be an NGV-2 cylinder.

319.9.2 CNG containers supplying transportation and cooking fuel. Where CNG containers and systems are used to supply fuel for cooking purposes in addition to being used for transportation fuel, the installation shall be in accordance with NFPA 52.

319.9.3 Protection of system piping. CNG system piping, including valves and fittings, shall be adequately protected to prevent tampering, impact damage and damage from vibration.

319.9.4 Methane alarms. A listed methane gas alarm shall be installed within the vehicle in accordance with manufacturer's instructions.

319.10 Maintenance. Maintenance of systems on mobile food preparation vehicles shall be in accordance with Sections 319.10.1 through 319.10.3.

319.10.1 Exhaust system. The exhaust system, including hood, grease-removal devices, fans, ducts and other appurtenances, shall be inspected and cleaned in accordance with Section 609.3.

319.10.2 Fire protection systems and devices. Fire protection systems and devices shall be maintained in accordance with Section 901.6.

319.10.3 Fuel gas systems. LP-gas containers installed on the vehicle and fuel-gas piping systems shall be inspected annually by an *approved* inspection agency or a company that is registered with the U.S. Department of Transportation to requalify LP-gas cylinders to ensure that system components are free from damage, suitable for the intended service and not subject to leaking. CNG containers shall be inspected every 3 years in a qualified service facility. CNG containers shall not be used past their expiration date as listed on the manufacturer's container label. Upon satisfactory inspection, the *approved* inspection agency shall affix a tag on the fuel gas system or within the vehicle indicating the name of the inspection agency and the date of satisfactory inspection.

SECTION 320 **ENERGY SYSTEMS**

320.1 General. Energy systems shall be installed in accordance with NFPA 70, 111, 855, and the most restrictive provisions specified in the most current edition of the International Codes.

CHAPTER 4

EMERGENCY PLANNING AND PREPAREDNESS

403.2.1 Seating plan and permits. In addition to the requirements of Section 404.2, the fire safety and evacuation plans for assembly occupancies, including carnivals, festivals, fair grounds, and trade show exhibitions, shall be submitted when required by the fire code official. Plans shall include a detailed seating plan, occupant load and occupant load limit. Deviations from the approved plans shall be allowed when approved by the fire code official, provided the occupant load limit for the occupancy is not exceeded and the aisles and exit accessways remain unobstructed. Permits and plans are required to operate a place of assembly, or a carnival, festival or fair, to use liquid- or gas-fueled vehicles or equipment for competition or display inside an assembly occupancy, to use an assembly area for trade show exhibition purposes, or to use candles or other open-flame devices in assembly areas.

403.5 Group E occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group E occupancies and for buildings containing both a Group E occupancy and an atrium. Group E occupancies shall comply with Sections 403.5.1 through 403.5.3, and Houston Fire Department LSB Standard No. 08, "Fire Drills."

403.5.4 Emergency evacuation drill deferral. Drills are not required during periods of inclement weather or when state mandated educational assessment testing is being conducted.

403.8.1 Group I-1 occupancies. Group I-1 occupancies shall comply with Section 403.8.1.1 through 403.8.1.7, and Houston Fire Department LSB Standard No. 08, "Fire Drills."

403.8.1.4 Drill frequency. Emergency evacuation drills shall be conducted in accordance with Houston Fire Department LSB Standard No. 08, "Fire Drills." ~~In addition to the evacuation drills required in Section 405.2, employees shall participate in drills an additional two times a year on each shift. Twelve drills with all occupants shall be conducted in the first year of operation. Drills are not required to comply with the time requirements of Section 405.4.~~

403.8.2 Group I-2 occupancies. Group I-2 occupancies shall comply with Sections 403.8.2.1 through 403.8.2.3, as well as 401, and 404 through 406, and Houston Fire Department LSB Standard No. 08, "Fire Drills."

403.8.4 Group I-4 occupancies. Group I-4 occupancies shall conform to Sections 401 through 406 and Houston Fire Department LSB Standard No. 08, "Fire Drills."

403.10 Group R occupancies. Group R occupancies shall comply with Sections 403.10.1 through 403.10.3.6 and Houston Fire Department LSB Standard No. 08, "Fire Drills."

403.10.1 Group R-1 occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-1 occupancies. Group R-1 occupancies shall comply with Sections 403.10.1.1 through 403.10.1.3. High-rise R-1 occupancies shall also be in accordance with Houston Fire Department LSB Standard No. 07, "High-Rise Fire Safety Plans."

403.10.2 Group R-2 occupancies. Group R-2 occupancies shall comply with Sections 403.10.2.1 through 403.10.2.3, and Houston Fire Department LSB Standard No. 08, "Fire Drills."

403.10.3 Group R-4 occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-4 occupancies. Group R-4 occupancies shall comply with Sections 403.10.3.1 through 403.10.3.6, and Houston Fire Department LSB Standard No. 08, "Fire Drills."

403.10.3.4 Drill frequency. Emergency evacuation drills shall be conducted in accordance with Houston Fire Department LSB Standard No. 08, "Fire Drills." ~~In addition to the evacuation drills required in Section 405.2, employees shall participate in drills an additional two times a year on each shift. Twelve drills with all occupants shall be conducted in the first year of operation.~~

403.10.3.5 Drill times. Drill times are not required to comply with the time requirements of Section 405.4.

403.11.1.3 Lease plan approval. The lease plan shall be ~~submitted to the fire code official for approval, and shall be maintained on site by the owner for immediate reference by responding fire service personnel and be available upon request by the fire code official.~~

403.11.1.4 Lease plan revisions. The lease plans shall be revised annually or as often as necessary to keep them current. Modifications or changes in tenants or occupancies shall not be made without prior approval of the *fire code official* and building official.

403.11.1.5 Tenant identification. Tenant identification shall be provided for secondary *exits* from occupied tenant spaces that lead to an *exit corridor* or directly to the exterior of the building. Tenant identification, using letters and numbers of durable materials, at least 2 inches (50 mm) in height, shall be posted on the exterior side of the *exit* or exit access door and shall identify the business name and address using plainly legible letters and numbers that contrast with their background.

Exception: Tenant identification is not required for anchor stores.

404.1 General. ~~Where required by Section 403, fire safety, evacuation and lockdown plans shall comply with Sections 404.2 through 404.4.1. The fire code official is authorized to require that emergency plans, employee duty assignments, employee training and fire drills be provided in buildings of any occupancy type. When required, emergency plans, employee duty assignments, employee training and fire drills shall be conducted in accordance with this chapter and Houston Fire Department LSB Standard No. 08, "Fire Drills."~~

404.2.1 Fire evacuation plans. Fire evacuation plans shall include the following:

1. Emergency egress or escape routes, and alternate routes where available and whether evacuation of the building is to be complete by selected floors or areas only or with a defend-in-place response.
2. Procedures for building employees and security personnel who, when it is safe to do so, must remain to operate critical equipment before evacuating.
3. Procedures for the use of elevators to evacuate the building where occupant evacuation elevators complying with Section 3008 of the *International Building Code* are provided.
4. Procedures for assisted rescue for persons unable to use the general *means of egress* unassisted.
5. Procedures for accounting for employees and occupants after evacuation has been completed.
6. Identification and assignment of personnel responsible for rescue or emergency medical aid.
7. The preferred and any alternative means of notifying occupants of a fire or emergency.
8. The preferred and any alternative means of reporting fires and other emergencies to the fire department or designated emergency response organization.
9. Identification and assignment of personnel who can be contacted for further information or explanation of duties under the plan.
10. A description of the emergency voice/alarm communication system alert tone and preprogrammed voice messages, where provided.
11. All high-rise building evacuation plans shall conform to the Houston Fire Department LSB Standard No. 7, "High-Rise Fire Safety Plans."

Exception: Group I high-rise occupancies.

404.3 Maintenance. ~~Fire safety and Emergency~~ evacuation plans shall be reviewed or updated annually or as necessitated by changes in staff assignments, occupancy or the physical arrangement of the building.

Exception: In high-rise occupancies, the emergency plans within fire depository boxes shall be reviewed and updated every six months to verify mobility impaired persons lists.

emergency keys and any other data, in accordance with Houston Fire Department LSB Standard No. 06, "Fire Depository Boxes."

405.1 General. Emergency evacuation drills complying with Sections 405.2 through 405.9 shall be conducted in an occupancy when required by the *fire code official* in accordance with Houston Fire Department LSB Standard No. 08, "Fire Drills." Evacuation drills in high-rise buildings shall be conducted in accordance with Houston Fire Department LSB Standard No. 07, "High-Rise Fire Safety Plans." ~~not less than annually where fire safety and evacuation plans are required by Section 403 or where required by the *fire code official*. Drills shall be designed in cooperation with the local authorities.~~

405.2 Frequency. Fire drill frequency shall be in accordance with the Houston Fire Department LSB Standard No. 08, "Fire Drills" unless superseded by other regulatory agencies. ~~Required emergency evacuation drills shall be held at the intervals specified in Table 405.2 or more frequently where necessary to familiarize all occupants with the drill procedure.~~

405.6 Notification. Where required by the *fire code official*, prior notification of emergency evacuation drills shall be given to the ~~*fire code official*~~ jurisdiction immediately prior to the drill by calling the Houston Fire Department Office of Emergency Communications, Telephone: (713) 884-3143, and to the building's fire alarm monitoring service. The Fire Department and the monitoring service shall be immediately notified at the conclusion of emergency evacuation drills, in accordance with Houston Fire Department LSB Standard No. 08, "Fire Drills."

CHAPTER 5

FIRE SERVICE FEATURES

501.1 Scope. Fire service features for buildings, structures and premises shall comply with this chapter.

Exception: Group R-2 occupancies when in accordance with Chapter 42 of the *City Code* for those items addressed therein. Items not specifically addressed in Chapter 42 of the *City Code* for multi-family residential developments shall be as required by this chapter or elsewhere in this code.

503.2 Specifications. Fire apparatus access roads shall be installed and arranged in accordance with Sections 503.2.1 through 503.2.8 and Houston Fire Department LSB Standard No. 03, "Fire Department Access."

503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6,096 mm), exclusive of shoulders, except for *approved* security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4,115 mm).

Exceptions:

1. When approved by the *fire code official*, vertical clearance may be reduced, provided the reduction does not impair access by fire apparatus and *approved* signs are installed and maintained indicating the established vertical clearance.
2. When approved by the *fire code official*, existing access roads may have an unobstructed width of not less than 15 feet (4,572 mm), when the reduction in width will not impair access by fire department equipment, or when, for access roads in existence on June 15, 1976, the designation of a greater width would necessitate structural changes to the building.

503.3 Marking. Where required by the *fire code official*, *approved* signs or other *approved* notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. Marking of fire apparatus access roads shall be in accordance with Section 503.3 and Houston Fire Department LSB Standard No. 03, "Fire Department Access." ~~The means by which *fire lanes* are designated~~ Signs or notices shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

503.3.1 Alteration, defacing or signs unlawful. A person commits an offense if the person intentionally alters, defaces, injures, knocks down, or removes, or attempts to alter, deface, injure, knock down, or remove, any sign required under the terms of this code.

503.4 Obstruction of fire apparatus access roads. ~~Fire~~ The required width of a fire apparatus access roads, private drive, private street, or private access easement utilized for fire apparatus access shall not be obstructed in any manner, including the parking of vehicles. The minimum

required widths and clearances established in Section 503.2.1 and 503.2.2 shall be maintained at all times.

Exceptions:

1. Access control gates installed in accordance with Houston Fire Department LSB Standard No. 04, "Access Control Gates." See Section 105.6 for permits.
2. Parking shall not include a vehicle that has a licensed vehicle operator in constant attendance in the vehicle, provided that the licensed operator has the ability to immediately remove the vehicle in case of an emergency.

503.4.1 Traffic calming devices. ~~Traffic calming devices shall be prohibited unless approved by the fire code official.~~ **Removal of vehicles and obstructions.** Vehicles parked and obstructions placed in violation of this code may be removed at the vehicle owner's expense by or at the direction of the fire chief, any peace officer or the property owner in accordance with applicable provisions of the *City Code* and state law.

503.4.2 Presumption of ownership. In any prosecution arising under this code that relates to the unlawful parking, standing, or stopping of a motor vehicle, it shall be presumed that the person who is the registered owner of the motor vehicle is the person who parked or stopped the vehicle at the date and time of the offense charged.

503.5 Required gates or barricades. The *fire code official* is authorized to require the installation and maintenance of gates or other *approved* barricades across fire apparatus access roads, trails or other accessways, not including public streets, alleys or highways. Access control gates and barriers shall be installed and maintained in accordance with Houston Fire Department LSB Standard No. 04, "Access Control Gates." For required permits see Section 105.6.2. Electric gate operators, where provided, shall be *listed* in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

503.6 Security gates. The installation of security gates across a fire apparatus access road shall be *approved* by the ~~fire chief~~ *fire code official* in accordance with Houston Fire Department LSB Standard No. 04, "Access Control Gates." Where security gates are installed, they shall have an *approved* means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times, or secured in the open position. Repairs shall be in accordance with original specifications and approvals. Electric gate operators, where provided, shall be *listed* in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

504.1.1 Key box required. When required by the *fire code official*, security gates and barriers on access walkways shall be provided with *approved* "9-1-1" key boxes to facilitate emergency access into the property or building where emergency access is not readily available because of property or building design or because of distances from *approved* access roadways or drives to the building entrance. Key boxes shall be installed in accordance with Houston Fire Department LSB Standard No. 05, "Key Boxes." See Section 105.6 for required permit.

504.3 Stairway access to roof. New buildings four or more stories ~~above-grade plane in height,~~ except those with a roof slope greater than four units vertical in 12 units horizontal (33.3-percent slope), shall be provided with a *stairway* to the roof. *Stairway* access to the roof shall be in accordance with Section 1011.12. Such *stairway* shall be marked at street and floor levels with a sign indicating that the *stairway* continues to the roof. Where roofs are used for roof gardens or for other purposes, *stairways* shall be provided as required for such occupancy classification. See Appendix H for stairway identification sign requirements.

505.1 Address identification. New and existing buildings, and occupancies therein under construction, shall be provided with *approved* address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) high with a minimum stroke width of ½ inch (12.7 mm). Where required by the *fire code official*, address identification shall be provided in additional *approved* locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the *public way*, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained. All new and existing buildings are required to be numbered as provided in Chapter 10, Article V, of the City Code.

506.1 Where required. Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, the *fire code official* is authorized to require a key box or a fire depository box to be installed in an *approved* location. The key box shall be of an *approved* type listed in accordance with UL 1037, and shall contain keys to gain necessary access as required by the *fire code official*. Key boxes shall be provided in accordance with Houston Fire Department LSB Standard No. 05, “Key Boxes” and LSB Standard No. 6, “Fire Depository Boxes.”

506.1.1 Locks. An *approved* lock shall be installed on gates or similar barriers where required by the *fire code official*. Key boxes shall be provided in accordance with Houston Fire Department LSB Standard No. 05, “Key Boxes.”

506.1.2 Key boxes for nonstandardized fire service elevator keys. Fire depository boxes for all high-rise, mid-rise and other facilities shall be installed and maintained in accordance with Houston Fire Department LSB Standard No. 06, “Fire Depository Boxes” as required by the fire marshal. Key boxes provided for nonstandardized fire service elevator keys shall comply with Section 506.1 and all of the following:

1. The key box shall be compatible with an existing rapid entry key box system in use in the jurisdiction and *approved* by the *fire code official*.
2. The front cover shall be permanently labeled with the words “Fire Department Use Only—Elevator Keys.”
3. The key box shall be mounted at each elevator bank at the lobby nearest to the lowest level of fire department access.
4. The key box shall be mounted 5 feet 6 inches (1,676 mm) above the finished floor to the right side of the elevator bank.
5. Contents of the key box are limited to fire service elevator keys. Additional elevator access tools, keys and information pertinent to emergency

planning or elevator access shall be permitted where authorized by the *fire code official*.

6. In building with two or more elevator banks, a single key box shall be permitted to be used where such elevator banks are separated by not more than 30 feet (9,144 mm). Additional key boxes shall be provided for each individual elevator or elevator bank separated by more than 30 feet (9,144 mm).

Exception: A single key box shall be permitted to be located adjacent to a *fire command center* or the nonstandard fire service elevator key shall be permitted to be secured in a key box used for other purposes and located in accordance with Section 506.1.

506.3 Fire depository box. A fire depository box shall be provided within all high-rise occupancies, as defined in the *Building Code*, or other facilities as may be required by the *fire code official*. Fire depository boxes shall be installed and maintained in accordance with Houston Fire Department LSB Standard No. 06, "Fire Depository Boxes."

506.4 Permit required. A permit is required to install and maintain a key box and/or fire depository box. See Section 105.6.

507.4.1 Hose lay advancement access. The *fire code official* may require an unobstructed 5 feet by 10 feet (1,524 mm x 3,048 mm) minimum clearance along the perimeter of any building, structure or appurtenance. The clearance shall allow adequate access and coverage during emergency operations for firefighters to deploy and advance fire hose lines.

507.5 Fire hydrant systems. Fire hydrant systems shall comply with Section 507.5.1 through 507.5.6, and the Houston Fire Department LSB Standard No. 09, "Marking of Fire Hydrants."

507.5.7 Removal of vehicles parked near fire hydrants. Vehicles parked within 15 feet (4,572 mm) of a fire hydrant in violation of a state law or ordinance may be removed at the vehicle owner's expense by or at the direction of the fire chief, *fire code official* or any peace officer in accordance with applicable provisions of the *City Code* and state law.

508.1.1 Location and access. The location and accessibility of the *fire command center* shall be approved by the ~~fire chief~~ *fire code official*. The *fire command center* room shall be on the building floor having street access. Access to the room shall be either directly from the exterior, through an entrance lobby, or through a 2-hour rated corridor leading directly to the exterior.

508.1.6 Required features. The *fire command center* shall comply with NFPA 72 and shall contain the following features:

{EDITORIAL NOTE: ITEMS 1-18 SHALL REMAIN AS SET FORTH IN THE 2015 IFC.}

19. A means to automatically switch an alarm signal to an *approved* central station.
20. Two handsets per each 10 stories in building height.

SECTION 510 EMERGENCY RESPONDER RADIO COVERAGE

510.1 Emergency responder radio coverage (ERRC) in new buildings. All new buildings shall have *approved* radio coverage for emergency responders within the building based upon the existing coverage levels of the public safety communication systems ~~of~~ utilized by the jurisdiction, measured at the exterior of the building. Coverage shall include the City of Houston Radio System. Any building or structure that fails to support adequate radio coverage shall comply with this code for minimum ERRC coverage. The owner shall immediately contact the City of Houston Permitting Office to report the system failure. This section shall not require improvement of the existing public safety communication systems.

Exceptions:

1. Where *approved* by the building official and the *fire code official*, a wired communication system in accordance with Section 907.2.13.2 shall be permitted to be installed or maintained instead of an *approved* radio coverage system.
2. Where it is determined by the *fire code official* that the radio coverage system is not needed.
3. In facilities where emergency responder radio coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the *fire code official* shall have the authority to accept an automatically activated emergency responder radio coverage system.

510.1.1 Compliance verification. New buildings require compliance verification testing by a City of Houston registered ERRC third-party special inspector. A copy of the compliance verification special inspection report shall be submitted to the *building official* for review and archiving to the project records prior to the project final approval or issuance of a *Certificate of Occupancy*.

Exception: Buildings without basements and three stories or less in height with an aggregate total building area of 50,000 square feet or less.

NOTE: ERRC special inspection reports shall be submitted by email directly to the Customer Assistance & Code Development Office of the Houston Permitting Center at: HPC-RA@houstontx.gov.

510.2 Emergency responder radio coverage in existing buildings. Existing buildings shall be provided with *approved* radio coverage for emergency responders as required in Chapter 11 of this code.

510.3 Permit required. A construction permit, when required, shall be issued by the building official for the installation of or modification to an ERRC system in accordance with the *Construction Code* for the installation of or modification to emergency responder radio coverage systems and related equipment is required as specified in Section 105.7.5. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

510.4 Technical requirements. Systems, components and equipment required to provide the emergency responder radio coverage system shall comply with Sections 510.4.1 through 510.4.2.95.

510.4.1 Radio-~~Emergency responder communication enhancement system~~ signal strength. The building shall be considered to have acceptable emergency responder ~~radio communications enhancement system~~ coverage when signal strength measurements in 95 percent of all areas on each floor of the building meet the signal strength requirements in Sections 510.4.1.1 and ~~through~~ 510.4.1.32.

510.4.1.1 Minimum signal strength into the building. ~~A minimum signal strength of 95 dBm shall be receivable within the building.~~ The minimum inbound signal strength shall be sufficient to provide usable voice communications throughout the coverage area as specified by the *fire code official*. The inbound signal level shall be sufficient to provide not less than a Delivered Audio Quality (DAQ) of 3.0 or an equivalent Signal-to-Interference-Plus-Noise Ratio (SINR) applicable to the technology for either analog or digital signals.

510.4.1.2 Minimum signal strength out of the building. ~~A minimum signal strength of 95 dBm shall be received by the agency's radio system when transmitted from within the building.~~ The minimum outbound signal strength shall be sufficient to provide usable voice communications throughout the coverage area as specified by the *fire code official*. The outbound signal level shall be sufficient to provide not less than a DAQ of 3.0 or an equivalent SINR applicable to the technology for either analog or digital signals.

510.4.1.3 System performance. Signal strength shall be sufficient to meet the requirements of the applications being utilized by public safety for emergency operations through the coverage area as specified by the *fire code official* in Section 510.4.2.2

510.4.2 System design. The emergency responder radio coverage system shall be designed in accordance with Section 510.4.2.1 through 510.4.2.95 and NFPA 1221-2016.

510.4.2.1 Amplification systems allowed. Buildings and structures that cannot support the required level of radio coverage shall be equipped with an internal multiple system with FCC Type Accepted Bi-Directional Amplifiers as required to encompass the frequency ranges as specified in Section 510.1, or as subsequently established by the City of Houston and be equipped with systems and components to enhance the public safety radio signals and achieve the required level of radio coverage specified in Sections 510.4.1 through 510.4.1.3. Donor antennas, when utilized, shall be optimized for directional reception from a single transmitter site. Public safety communications enhancement systems utilizing radio-frequency-emitting devices and cabling shall be approved by the *fire code official*. Prior to installation, all RF-emitting devices shall have the certification of the radio licensing authority and be suitable for public safety use. ~~a radiating cable system, a distributed antenna system with Federal Communications Commission (FCC)-certified signal boosters, or other system approved by the *fire code official* in order to achieve the required adequate radio coverage.~~

510.4.2.2 Technical criteria. The *fire code official* shall maintain a document providing the specific technical information and requirements for the emergency responder ~~radio communications~~ coverage system. This document shall contain, but not be limited to, the various frequencies required, the location of radio sites, the effective radiated power of radio sites, the maximum propagation delay in microseconds, the applications being used and other supporting technical information necessary for system design.

510.4.2.3 Standby power. Emergency responder radio coverage systems shall be provided with dedicated standby batteries or provided with 2-hour standby power batteries and connected to the facility generator power system in accordance with Section 1203604 of this code. The standby power supply shall be capable of operating the emergency responder radio coverage system at 100-percent system capacity for a duration of not less than 1224 hours.

510.4.2.4 Signal booster requirements. If used, signal boosters shall meet the following requirements:

1. All signal booster components shall be contained in a National Electrical Manufacturer's Association (NEMA) 4-type waterproof cabinet.
2. Battery systems used for the emergency power source shall be contained in a ~~NEMA 4-type waterproof~~ 3R or higher-rated cabinet.
3. ~~The signal booster system and battery system shall be electrically supervised and monitored by a supervisory service, or when approved by the fire code official, shall sound an audible signal at a constantly attended location.~~ Equipment shall have FCC or other radio licensing authority certification and be suitable for public safety use prior to installation.
4. ~~Equipment shall have FCC certification prior to installation. Where a donor antenna exists, isolation shall be maintained between the donor antenna and all inside antennas to not less than 20dB greater than the system gain under all operating conditions. Donor antennas shall be omnidirectional to take advantage of the City of Houston simulcast radio architecture.~~
5. Bi-Directional Amplifiers (BDAs) used in emergency responder radio coverage systems shall have oscillation prevention circuitry. BDAs will need to be a bandpass or able to hand 42 downlink and 42 uplink channels with room for expansion. For required frequencies, the installer will need to contact the City of Houston Radio Communication Services.

NOTE: Contact City of Houston HITS – Radio Communications Services for specific frequencies of specific project locations.

City of Houston HITS – Radio Communications Services
2318 Greens Road, Houston, Texas 77032

Attn: NOC

Office: 832-393-0399

Email: RCSNETWORKOPS@houstontx.gov

6. The installation of amplification systems or system that operate on or provide the means to cause interference on any emergency responder radio coverage networks shall be coordinated and approved by the fire code official.

510.4.2.5 Additional frequencies and change of frequencies. The emergency responder radio coverage system shall be capable of modification or expansion in the event frequency changes are required by the FCC or other radio licensing

authority, or additional frequencies are made available by the FCC or other radio licensing authority.

510.4.2.6 System monitoring. The emergency responder radio enhancement system shall be monitored by a listed *fire alarm control unit*, or where approved by the *fire code official*, shall sound an audible signal at a constantly attended on-site location. Automatic supervisory signals shall include the following:

1. Loss of normal AC power supply.
2. System battery charger(s) failure.
3. Malfunction of the donor antenna(s).
4. Failure of active RF-emitting device(s).
5. Low-battery capacity at 70-percent reduction of operating capacity.
6. Failure of critical system components.
7. The communications link between the *fire alarm system* and the emergency responder radio enhancement system.

510.4.2.7 Design documents. The *fire code official* shall have the authority to require “as-built” design documents and specifications for emergency responder communications coverage systems. The documents shall be in a format acceptable to the *fire code official*.

510.4.2.8 Radio communication antenna density. Systems shall be engineered to minimize the near-far effect. Radio enhancement system designs shall include sufficient antenna density to address reduced gain conditions.

Exceptions:

1. Class A narrow band signal booster devices with independent AGC/ALC circuits per channel.
2. Systems where all portable devices within the same band use active power control features.

510.4.2.9 Minimum qualifications of designer. An amplification system shall be designed, sealed, signed and dated by a registered professional engineer licensed by the State of Texas.

510.5 Installation requirements. The installation of the public safety radio coverage system shall be in accordance with Section 510.5.1 through 510.5.4 and NFPA 1221-2016.

510.5.1 Approval prior to installation. Amplification systems capable of operating on frequencies licensed to any public safety agency by the FCC shall not be installed without prior coordination and approval of the *fire code official*.

510.5.2 Minimum qualifications of personnel. The minimum qualifications of the system designer and lead installation personnel shall include both of the following:

1. A valid, current FCC-issued general radio operators license.
2. Certification of in-building system training issued by ~~an approved nationally recognized organization, or approved school,~~ or a certificate issued by the manufacturer of the equipment being installed.

These qualifications shall not be required where demonstration of adequate skills and experience satisfactory to the *fire code official* is provided.

510.5.3 Acceptance test procedure. Where an emergency responder radio coverage system is required, and upon completion of installation, the building owner shall have the radio system tested to verify that two-way coverage on each floor of the building is not less than ~~95~~90 percent. Testing shall be conducted by personnel with minimum qualifications as specified in Section 510.5.2. The building owner shall retain copies of all test records at the inspected premises. A photocopy of the test inspection report shall be submitted to the *building official*. If the building coverage fails to comply with the minimum requirements of this code, repairs shall be made and additional testing conducted until the minimum requirements have been met. The test procedure shall be conducted as follows:

1. Each floor of the building shall be divided into a grid of 20 approximately equal test areas.
2. The test shall be conducted using a calibrated, and approved, portable radio of the latest brand and model used by the agency talking through the agency's radio communications system or equipment approved by the *fire code official*.
3. Failure of more than one test area shall result in failure ~~not more than two nonadjacent test areas shall not result in failure of the test.~~
4. In the event that ~~three~~ two of the test areas fail the test, in order to be more statistically accurate, the floor shall be permitted to be divided into 40 equal test areas. Failure of not more than ~~four~~ two nonadjacent test areas shall not result in failure of the test. If the system fails the 40-area test, the system shall be altered to meet the ~~90~~95-percent coverage requirement.
5. A test location approximately in the center of each test area shall be selected for the test, with the radio enabled to verify two-way communications to and from the outside of the building through the public agency's radio communications system. Once the test location has been selected, that location shall represent the entire test area. Failure in the selected test location shall be considered failure of that test area. Additional test locations shall not be permitted.
6. The gain values of all amplifiers shall be measured and the test measurement results shall be kept on file with the building owner so that the measurements can be verified during annual tests. In the event that the measurements results become lost, the building owner shall be required to rerun the acceptance test to reestablish the gain values.
7. As part of the installation a spectrum analyzer or other suitable test equipment, calibrated within the previous 12 months, shall be utilized to ensure spurious oscillations are not being generated by the subject signal booster. This test shall be conducted at the time of installation and subsequent annual inspections.
8. Systems incorporating Class B signal-booster devices of Class B broadband fiber remote devices shall be tested using two portable radios simultaneously conducting subjective voice quality checks. One portable radio shall be positioned not greater than 10 feet (3,048 mm) from the indoor antenna. The second portable radio shall be positioned at a distance

that represents the farthest distance from any indoor antenna. With both portable radios simultaneously keyed up on different frequencies within the same band, subjective audio testing shall be conducted and comply with DAQ levels as specified in Sections 510.4.1.1 and 510.4.1.2.

Exception: The minimum coverage of each floor may be reduced from 95 to 90 percent where the stairwells and elevator lobbies are included in the 90-percent coverage area.

510.5.4 FCC compliance. The emergency responder radio coverage system installation and components shall also comply with all applicable federal regulations included, but not limited to, FCC 47 CFR Part 90.219.

510.6 Maintenance. The emergency responder radio coverage system shall be maintained operational at all times in accordance with Sections 510.6.1 through 510.6.43, and shall be replaced or repaired where defective. The property owners shall be responsible for necessary repairs, replacement, and/or upgrades to the system as directed by the fire code official.

510.6.1 Testing and proof of compliance. The building owner shall have the emergency responder radio coverage system~~shall be~~ inspected and tested annually and ~~or~~ where structural changes occur including additions or remodels that could materially change the original field performance tests. Testing shall consist of the following:

1. In-building coverage test as described in Section 510.5.3.
2. Signal boosters shall be tested to verify that the gain is the same as it was upon initial installation and acceptance or set to optimize the performance of the system.
3. Backup batteries and power supplies shall be tested under load of a period of 1-hour to verify that they will properly operate during an actual power outage. If within the 1-hour test period the battery exhibits symptoms of failure, the test shall be extended for additional 1-hour periods until the integrity of the battery can be determined.
4. Other active components shall be checked to verify operation within the manufacturer's specifications.
5. At the conclusion of the special inspection testing, a photocopy of the report, which shall verify compliance with Section 510.5.3, shall be electronically submitted to the Customer Assistance & Code Development Office of the Houston Permitting Center at: HPC-RA@houston.tx.gov. The original shall be kept on site and available for review upon request by the fire code official.

510.6.2 Additional frequencies. The building owner shall modify or expand the emergency responder radio coverage system at his or her expense in the event frequency changes are required by the FCC or additional frequencies are made available by the FCC. Prior approval of a public safety radio coverage system on previous frequencies does not exempt this section.

510.6.3 Field testing. Agency personnel shall have the right to enter onto the property at any reasonable time to conduct field testing to verify the required level of radio coverage.

510.6.4 Nonpublic safety system. Where other nonpublic safety amplification systems installed in buildings reduce the performance or cause interference with the emergency

responder communications coverage system, the nonpublic safety amplification system shall be corrected or removed.

CHAPTER 6

BUILDING SERVICES AND SYSTEMS

601.2 Permits. Permits shall be obtained for ~~refrigeration systems,~~ stationary lead acid battery systems and solar photovoltaic power systems as set forth in Sections 105.6 and 105.7.

603.3.2.4 Installation. Tanks and piping systems shall be installed and separated from other uses in accordance with NFPA 37 and UL 2200 standards ~~Section 915 and Chapter 13, both of the *International Mechanical Code*,~~ as applicable.

603.9 Gas meters and piping.

603.9.1 Protection of meters and piping. Above-ground gas meters, regulators and piping subject to damage shall be protected by a barrier complying with Section 312 or otherwise protected in an *approved* manner.

603.9.2 Testing of piping and systems.

603.9.2.1 Routine testing. All gas piping systems in Groups A, E, I, R-1 and R-2 occupancies shall be tested at least every five years by a licensed plumber. Systems shall be tested in accordance with the *Plumbing Code*. The owner shall maintain a written record onsite at a location designated by the *fire code official* and it shall be made available upon request.

603.9.2.2 Testing for leaks. The *fire code official* is authorized to require a test of the gas piping system in any building or structure, of any occupancy type, when there is reason to believe a leak may exist in the system.

604.4.1 Schedule. Inspection, testing and maintenance of emergency and standby power systems shall be in accordance with an approved schedule established upon completion and approval of the system installation and Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment."

605.13 Protection of lighting fixtures and devices. All permanent or temporary lighting fixtures and devices used in mechanical spaces, service areas, exit accessways, stairways, and parking garages shall be provided with an *approved* protective device designed to prevent accidental breakage, contact with readily ignitable materials, or creation of electrical shock hazard.

Exceptions:

1. Listed devices *approved* for use in hazardous locations in accordance with the *Electrical Code*.
2. Listed incandescent bulbs or fluorescent tubes provided with *approved* shatter- or break-resistive protective coatings.
3. Listed devices for exterior use, with *approved* weather resistant bulbs.

4. Fixtures so located as to be suitably protected from accidental damage or breakage.

606.9 Remote controls. Where flammable refrigerants are used and compliance with Chapter 11~~Section 1106~~ of the *International Mechanical Code* is required, remote control of the mechanical equipment and appliances located in the machinery room as required by Sections 606.9.1 and 606.9.2 shall be provided at an approved location immediately outside the machinery room and adjacent to its principal entrance.

606.16 Electrical equipment. Where refrigerants of Groups A2, A3, B2 and B3, as defined in the *International Mechanical Code*, are used, refrigeration machinery rooms shall conform to the Class I, Division 2 hazardous location classification requirements of NFPA 70.

Exception: Ammonia machinery rooms that are provided with ventilation in accordance with ~~Section 4406.3~~ 1102.1 of the *International Mechanical Code*.

[BE] 607.3 Emergency signs. An *approved* pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the exit stairways and not to use the elevators in case of fire. The sign shall read: IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS. The lettering shall be at least ½ inch (13 mm) block letters on a background of contrasting color so that the lettering is clearly visible.

Exceptions:

1. The emergency sign shall not be required for elevators that are part of an accessible *means of egress* complying with Section 1009.4.
2. The emergency sign shall not be required for elevators that are used for occupant self-evacuation in accordance with Section 3008 of the *International Building Code*.

607.7 Elevator key location. Keys for the elevator car doors and fire-fighter service keys shall be kept in an *approved* location in accordance with Houston Fire Department LSB Standard No. 06, "Fire Depository Boxes" for immediate use by the fire department.

607.8 Standardized fire service elevator keys. Buildings with elevators equipped with Phase I emergency recall, Phase II emergency in-car operation, or a fire service access elevator shall be equipped to operate with a standardized fire service elevator key approved by the *fire code official*, in accordance with Houston Fire Department LSB Standard No. 06, "Fire Depository Boxes." See Section 506.1. The *approved* fire service elevator key shall be available for immediate use by the fire department.

Exception: The owner shall be permitted to place the building's nonstandardized fire service elevator keys in a key box installed in accordance with Section 506.1.2.

CHAPTER 7

FIRE AND SMOKE PROTECTION FEATURES

703.1.1 Fireblocking and draftstopping. Required *fireblocking* and draftstopping in combustible concealed spaces shall be maintained to provide continuity and integrity of the construction. Including attics in existing Group R-2 apartments, the *fire code official* is authorized to require installation of draftstops in Group R-2 occupancies that do not exceed four stories in height in any building undergoing roof work that involves replacement of more than 25 percent of the roof sheathing. The attic space shall be subdivided by draftstops into areas not exceeding 3,000 square feet (279 m²) or above every two dwelling units whichever is smaller.

703.4 Testing. Horizontal and vertical sliding and rolling fire doors shall be inspected and tested annually to confirm proper operation and full closure. Fire doors, fire dampers, and other similar equipment shall be inspected and tested in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment." The owner shall maintain rRecords of inspections and testing onsite at a location designated by the *fire code official* shall be maintained.

CHAPTER 9

FIRE PROTECTION SYSTEMS

901.1 Scope. The provisions of this chapter and the *Building Code* shall specify where *fire protection systems* are required and shall apply to the design, installation, inspection, operation, testing and maintenance of all *fire protection systems*.

901.2 Construction documents. The *fire code official* shall have the authority to require *construction documents* and calculations ~~for all fire protection systems and to require permits be issued~~ for the installation, rehabilitation or modification of any *fire protection system*. *Construction documents* for *fire protection systems* shall be submitted for review and approval in accordance with the *Building Code* prior to system installation.

901.3 Permits. Permits shall be required as set forth in Sections 105.6 and 105.7 of the *Building Code*.

901.4.5 Appearance of equipment. Any device that has the physical appearance of life safety or fire protection equipment but that does not perform that life safety or fire protection function shall be prohibited. Systems or devices that are permanently out of service or any non-required life safety system or fire protection system that no longer functions as originally installed shall be removed or the appearance changed so as not to be mistaken for functioning life safety or fire protection equipment.

901.5 Installation acceptance testing. Fire detection and alarm systems, fire-extinguishing systems, fire hydrant systems, fire standpipe systems, fire pump systems, private fire service mains and all other *fire protection systems* and appurtenances thereto shall be subject to acceptance tests as contained in the installation standards and as *approved* by the *fire code official*. ~~The fire code official shall be notified before any required acceptance testing.~~ The location of all fire department connections shall be approved by the fire code official. Inspection of fire-extinguishing systems shall be conducted by the fire code official, upon payment of all applicable fees stated in the city fee schedule. The inspection and reports shall be forwarded to the building official for posting to occupancy records. No building or structure requiring a fire-extinguishing system shall be permanently occupied without first obtaining the fire code official's approval.

Exception: The building official shall have the authority to issue a temporary certificate of occupancy for the use of a portion or portions of a building prior to the completion of the entire structure.

901.5.1 Occupancy. It shall be unlawful to occupy any portion of a building or structure until the required fire detection, alarm and suppression systems have been tested and *approved*.

Exception: The building official is authorized to issue a temporary certificate of occupancy in accordance with the *Building Code*.

901.6.1 Standards. *Fire protection systems* shall be inspected, tested and maintained in accordance with the referenced standards *listed* in Table 901.6.1 and in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment" and LSB Standard No. 01, "Installation and Maintenance of Portable Fire Extinguishers."

901.7 Systems out of service. Where a required life safety or fire protection system is out of service, the fire department and the *fire code official* shall be notified immediately in accordance with Section 901.12 and, where required by the *fire code official*, either the building shall be ~~either~~ evacuated or an *approved* fire watch, or one or more standby inspectors, in accordance with Section 114, shall be provided for all occupants left unprotected by the shutdown until the life safety or fire protection system has been returned to service.

Where utilized, fire watches shall be provided with not less than one *approved* means for notification of the fire department and their only duty shall be to perform constant patrols of the protected premises and keep watch for fires.

901.11 Outside sprinkler control valve. Outside control in the form of a wall post indicator valve or post indicator valve shall be provided for each sprinkler system. An indicating-type gate valve shall be required when sprinkler systems are supplied by the standpipe system.

901.12 Notification of fire department. The Houston Fire Department Office of Emergency Communications shall be immediately notified by telephone, at (713) 884-3143, whenever the required fire protection or life safety system is placed out of service for emergency or non-schedule repairs, replacements, or service. The Fire Department shall be provided with the following information:

1. Correct street address and name of the building or structure.
2. The caller's name and contact phone number.
3. The identity of system that is impaired or shut down, and if known, the nature of the impairment or failure.
4. Estimated length of time system is to be out of service for repairs.

The Fire Department Office of Emergency Communications shall again be notified when the system is restored to normal operational status.

901.13 Fire pumps. Fire pumps shall be listed by Factory Mutual, Underwriters Laboratories or another approved agency and shall not deliver less than the required fire flow and pressure in accordance with the listing. Such pumps shall be automatic operation. (See the *Electrical Code* for additional requirements.) The source of supply for such pumps shall be a break tank served from the city main sized as required by NFPA 20, or a minimum 2500 gallons, whichever is more restrictive.

903.2 Where required. *Approved automatic sprinkler systems* in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12.

Exceptions:

1. Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution

equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic smoke detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour *fire barriers* constructed in accordance with Section 707 of the *International Building Code* or not less than 2-hour *horizontal assemblies* constructed in accordance with Section 711 of the *International Building Code*, or both.

2. In other than Group H occupancies, a sprinkler system shall not be required in open buildings.

903.2.1.3 Group A-3. An *automatic sprinkler system* shall be provided for *fire areas* containing Group A-3 occupancies and intervening floors of the building where one of the following conditions exists:

1. The *fire area* exceeds 12,000 square feet (1115 m²).
2. The *fire area* has an *occupant load* of 300 or more.
3. The *fire area* is located on a floor other than a the level of exit discharge serving such occupancies.

Exception: In lieu of a sprinkler system for a temporary use occupancy, the applicant may agree to provide a fire watch program under which one or more fire inspectors of this jurisdiction will be present on the premises at all times when the amusement occupancy is open for use. The *fire code official* shall promulgate regulations regarding the qualifications, deployment and numbers of fire inspectors, which regulations shall be predicated upon public safety for the purpose of preventing fires and allowing safe egress in the event of a fire. The jurisdiction shall not be obligated to provide fire inspectors for this purpose. See Section 113.1.2 for fees for the provision of standby inspectors

903.2.1.6 Assembly occupancies on roofs. Where an occupied roof has an assembly occupancy with an *occupant load* exceeding 100 for Group A-2 and 300 for other Group A occupancies, all floors between the occupied roof and the *level of exit discharge* shall be equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.

Exception: Open parking garages of Type I or Type II construction. In lieu of a sprinkler system for a temporary use occupancy, the applicant may agree to provide a fire watch program under which one of more fire inspectors of this jurisdiction will be present on the premises at all times when the amusement occupancy is open for use. The *fire code official* shall promulgate regulations regarding the qualifications, deployment and numbers of fire inspectors, which regulations shall be predicated upon public safety for the purpose of preventing fires and allowing safe egress in the event of a fire. The jurisdiction shall not be obliged to provide fire inspectors for this purpose. See the *Fire Code* for applicable fees and service conditions.

903.2.5 Group H. *Automatic sprinkler systems* shall be provided in high-hazard occupancies as required in Sections 903.2.5.1 through 903.2.5.3.

Exception: Hazardous materials storage canopies complying with the provisions of Section 414.6.1 of the *Building Code* for weather protection.

903.2.6 Group I. An *automatic sprinkler system* shall be provided throughout buildings with a Group I fire area.

Exceptions:

1. An *automatic sprinkler system* installed in accordance with Section 903.3.1.2 shall be permitted in Group I-1 Condition 1 facilities.
2. An *automatic sprinkler system* is not required where Group I-4 day care facilities are at the *level of exit discharge* and where every room where care is provided has not fewer than one exterior *exit* door.
3. ~~In buildings where Group I-4 day care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be installed on the entire floor where care is provided, all floors between the level of care and the *level of exit discharge* and all floors below the level of exit discharge other than areas classified as an open parking garage.~~

903.3.6 Hose threads. Fire hose threads and fittings used in connection with *automatic sprinkler systems* shall be ~~as prescribed by the *fire code official*~~ National Hose Standard hose threads.

903.3.7 Fire department connections. Fire department connections for *automatic sprinkler systems* shall be installed in accordance with Section 912. Fire department connections shall have 2½-inch (64 mm) hose connections. Fire department connections shall be located on the street side of the building, unobstructed, fully visible, and recognizable from the street or nearest point of fire department vehicle access or as otherwise *approved by the fire code official*.

904.12 Commercial cooking systems.

{EDITORIAL NOTE: THE PORTION OF THE TEXT BETWEEN THE SECTION NUMBER AND TITLE AND THE EXCEPTION SHALL REMAIN AS SET FORTH IN THE 2015 IFC.}

Exception: Factory-built commercial cooking recirculating systems that are tested in accordance with UL 710B and *listed, labeled* and installed in accordance with Section ~~304.4~~ 303.1 and 516.0 of the ~~*International Mechanical Code*~~.

905.2.1 Two-way standpipe connections. Class I and Class III standpipe systems shall be equipped with a two-way fire department inlet connection. Systems with three or more standpipes shall be provided with not less than two two-way fire department inlet connections.

905.3.1 Height. Class III standpipe systems shall be installed throughout buildings where the floor level of the highest story is located more than 30 feet (9,144 mm) above the lowest level of the fire department vehicle access, or where the floor level of the lowest story is located more than 30 feet (9,144 mm) below the highest level of fire department vehicle access.

Exceptions:

1. Class I standpipes are allowed in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
- ~~2. Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet (45,720 mm) above the lowest level of fire department vehicle access.~~
- ~~3. Class I manual dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5.~~
2. Class I standpipes are allowed in *basements* equipped throughout with an *automatic sprinkler system*.
3. In determining the lowest level of fire department vehicle access, it shall not be required to consider either of the following:
 - 3.1 Recessed loading docks for four vehicles or less.
 - 3.2 Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.

905.3.2 Group A. Class I automatic wet standpipes shall be provided in nonsprinklered Group A buildings having an *occupant load* exceeding 1,000 persons.

Exceptions:

1. Open-air-seating spaces without enclosed spaces.
- ~~2. Class I automatic dry and semiautomatic dry standpipes or manual wet standpipes are allowed in buildings that are not high-rise buildings.~~

905.3.5 Underground buildings. Underground buildings shall be equipped throughout with a Class I automatic wet ~~or manual wet~~ standpipe system.

905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required *interior exit stairway*, a hose connection shall be provided for each story above and below grade plane. Hose connections shall be located at an ~~intermediate~~ the main floor landing between stories, unless otherwise specified ~~approved~~ by the *fire code official*.

{EDITORIAL NOTE: REMAINDER OF SECTION REMAINS AS IS IN THE 2015 IFC.}

905.8 Dry standpipes. Dry standpipes shall not be installed.

Exception: ~~Where subject to freezing and in accordance with NFPA 14.~~

905.12 Design pressure. Design pressure at the uppermost valve for a Class II standpipe system shall be 35 psi (241.316505 kPa).

906.2 General requirements. Portable fire extinguishers shall be selected, installed and maintained in accordance with this section, ~~and NFPA 10 and Houston Fire Department LSB Standard No. 01, "Installation and Maintenance of Portable Fire Extinguishers."~~

{EDITORIAL NOTE: THE REMAINDER OF THIS SECTION SHALL REMAIN AS SET FORTH IN THE 2015 IFC.}

907.2 Where required—new buildings and structures. An *approved* fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Section 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.5, unless other requirements are provided by another section of this code.

Not fewer than one manual fire alarm box shall be provided in an *approved* location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or waterflow detection devices. Where other sections of this code allow elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed.

Exceptions:

1. The manual fire alarm box is not required for fire alarm systems dedicated to elevator recall control and supervisory service.
2. The manual fire alarm box is not required for Group R-2 occupancies unless required by the *fire code official* to provide a means for fire watch personnel to initiate an alarm during a sprinkler system impairment event. Where provided, the manual fire alarm box shall not be located in an area that is accessible to the public.
3. In other than Group H occupancies, a fire alarm system shall not be required in open buildings.

907.2.2 Group B. A manual fire alarm system shall be installed in Group B occupancies where one of the following conditions exists:

1. The combined Group B *occupant load* of all floors is 500 or more.
2. The Group B *occupant load* is more than 100 persons above or below the lowest *level of exit discharge*.
3. The *fire area* contains an ambulatory care facility.

Exception: ~~Manual~~ In other than high-rise buildings, manual fire alarm boxes are not required where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 and the occupant

notification appliances will activate throughout the notification zones upon sprinkler water flow.

907.2.3 Group E. A manual and automatic fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall be installed in Group E occupancies. When *automatic sprinkler systems* or smoke detectors are installed, such systems and detectors shall be connected to the building fire alarm system.

{EDITORIAL NOTE: THE REMAINDER OF THIS SECTION SHALL REMAIN AS SET FORTH IN THE 2015 IFC.}

907.2.3.1 Group E educational. Smoke detectors shall be installed in any interior corridor serving as an exit and in storerooms, mechanical rooms, janitorial rooms and similar areas. Smoke detectors shall not be required in toilet rooms, classrooms or offices.

Exception: Approved heat detectors may be installed in lieu of smoke detectors with fire marshal approval.

907.2.3.2 Group E child day care facilities. Unless a fire alarm system meeting the requirements of Section 907.2.3 is provided, a smoke alarm shall be provided in each occupiable area of child day care facilities with an *occupant load* of less than 30. Where more than one smoke alarm is required, the smoke alarms shall be interconnected in such a manner that activation of one alarm shall activate all the alarms.

907.2.3.3 Smoke detectors. The distance between smoke detectors shall not exceed a nominal spacing of 30 feet (9,144 mm) and there shall be detectors within a distance of one-half the nominal spacing, measured at right angles, from all walls or partitions extending upward to within the top 15 percent of the ceiling height.

907.2.6.4 Group I-4. Group I-4 occupancies shall have a manual fire alarm and an automatic fire detection system installed in accordance with 907.2.3.

907.4.2.4 Signs. ~~Where fire alarm systems are not monitored by a supervising station, an *approved* permanent sign shall be installed adjacent to each manual fire alarm box that reads: WHEN ALARM SOUNDS—CALL FIRE DEPARTMENT.~~

Exception: ~~Where the manufacturer has permanently provided this information on the manual fire alarm box.~~

907.5.2.2 Emergency voice/alarm communication. Emergency voice/alarm communication systems required by this code shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler waterflow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving *approved* information and directions for a general or staged evacuation in accordance with the building's fire safety and evacuation plans required by Section 404. In high-rise buildings, the system shall operate on at least the alarming floor, the floor above and the floor below. Speakers

shall be provided throughout the building by paging zones. At a minimum, paging zones shall be provided as follows:

1. Elevator groups.
2. *Interior exit stairways.*
3. Each floor.
4. *Areas of refuge* as defined in Chapter 2.

Alarms shall not sound in elevator groups or exit stairs.

Exception: In Group I-1 and I-2 occupancies, the alarm shall sound in a constantly attended area and a general occupant notification shall be broadcast over the overhead page.

907.5.2.3.1 Public use areas and common use areas. Visible alarm notification appliances shall be provided in *public use areas* and *common use areas*.

~~**Exception:** Where employee work areas have audible alarm coverage, the notification appliance circuits serving the employee work areas shall be initially designed with not less than 20 percent spare capacity to account for the potential of adding visible notification appliances in the future to accommodate hearing-impaired employee(s).~~

907.6.6.1 Automatic telephone-dialing devices. Automatic telephone-dialing devices used to transmit an emergency alarm shall not be connected to any fire department telephone number ~~unless approved by the fire chief.~~

909.12.2 Wiring. In addition to meeting requirements of ~~NFPA 70~~ the *Electrical Code*, all mechanical smoke control wiring, regardless of voltage, shall be fully enclosed within continuous raceways. The requirement of this section shall apply only to wiring extending from the fire alarm system control unit that activates any required smoke control system component such as relays, fans, dampers, or stair pressurization systems.

909.13.1 Materials. Control air tubing shall be hard drawn copper, Type L, ACR in accordance with ASTM B 42, ASTM B 43, ASTM B 68, ASTM B 88, ASTM B 251 and ASTM B 280. Fittings shall be wrought copper or brass, solder type, in accordance with ASME B 16.18 or ASME B 16.22. Changes in direction shall be made with appropriate tool bends. Brass compression-type fittings shall be used at final connection to devices; other joints shall be brazed using a BCuP5 brazing alloy with solidus above 1,100°F (593°C) and liquidus below 1,500°F (816°C). Brazing flux shall be used on copper-to-brass joints only.

Exception: Nonmetallic tubing used within control panels and at the final connection to devices, provided all of the following conditions are met:

1. Tubing shall comply with the requirements of Section 602.2.3~~4-3~~ of the *International Mechanical Code*.

{EDITORIAL NOTE: THE REMAINDER OF SECTION 909.13.1 SHALL REMAIN AS SET FORTH IN THE 2015 IFC.}

912.2.1 Visible location. Fire department connections shall be located on the street side of buildings, fully visible and recognizable from the street or nearest point of fire department vehicle access or as otherwise *approved* by the ~~fire chief~~ fire code official.

912.3 Fire hose threads. Fire hose threads used in connection with standpipe systems shall be *approved* and shall be compatible with ~~fire department~~ National Hose Standard hose threads.

912.7 Inspection, testing and maintenance. Fire department connections shall be periodically inspected, tested and maintained in accordance with NFPA 25 and Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment." The owner shall maintain a written ~~Records~~ of inspections, testing and maintenance onsite at a location designated by the fire code official, and it shall be made available upon request ~~maintained.~~

913.4 Valve supervision. Where provided, the fire pump suction, discharge and bypass valves, and isolation valves on the backflow prevention device or assembly shall be supervised open by one of the following methods:

1. Central-station, proprietary or remote-station signaling service.
2. Local signaling service that will cause the sounding of an audible signal at a constantly attended location.
3. ~~Locking valves open.~~
4. ~~Sealing of valves and approved weekly recorded inspection where valves are located within fenced enclosures under the control of the owner.~~

SECTION 916

GAS DETECTION SYSTEMS

916.1 Gas detection systems. Gas detection systems required by this code shall comply with Sections 916.2 through 916.11.

916.2 Permits. Permits shall be required as set forth in Section 105.6.53.

916.2.1 Construction documents. Documentation of the gas detection system design and equipment to be used that demonstrates compliance with the requirements of this code shall be provided with the application for permit.

916.3 Equipment. Gas detection system equipment shall be designed for use with the gases being detected and shall be installed in accordance with manufacturer's instructions.

916.4 Power connections. Gas detection systems shall be permanently connected to the building electrical power supply or shall be permitted to be cord connected to an unswitched receptacle using an approved restraining means that secures the plug to the receptacle.

916.5 Emergency and standby power. Standby or emergency power shall be provided or the gas detection system shall initiate a trouble signal at an approved location if the power supply is interrupted.

916.6 Sensor locations. Sensors shall be installed in approved locations where leaking gases are expected to accumulate.

916.7 Gas sampling. Gas sampling shall be performed continuously. Sample analysis shall be processed immediately after sampling, except as follows:

1. For HPM gases, sample analysis shall be performed at intervals not exceeding 30 minutes.
2. For toxic gases that are not HPM, sample analysis shall be performed at intervals not exceeding 5 minutes, in accordance with Section 6004.2.2.7.
3. Where a less frequent or delayed sampling interval is approved.

916.8 System activation. A gas detection alarm shall be initiated where any sensor detects a concentration of gas exceeding the following thresholds:

1. For flammable gases, a gas concentration exceeding 25 percent of the lower flammability limit (LFL).
2. For nonflammable gases, a gas concentration exceeding one-half of the IDLH, unless a different threshold is specified by the section of this code requiring a gas detection system.

Upon activation of a gas detection alarm, alarm signals or other required responses shall be as specified by the section of this code requiring a gas detection system. Audible and visible alarm signals associated with a gas detection alarm shall be distinct from fire alarm and carbon monoxide alarm signals.

916.9 Signage. Signs shall be provided adjacent to gas detection system alarm signaling devices that advise occupants of the nature of the signals and actions to take in response to the signal.

916.10 Fire alarm system connections. Gas sensors and gas detection systems shall not be connected to fire alarm systems unless approved and connected in accordance with the fire alarm equipment manufacturer's instructions.

916.11 Inspection, testing and sensor calibration. Inspection and testing of gas detection systems shall be conducted not less than annually. Sensor calibration shall be confirmed at the time of sensor installation and calibration shall be performed at the frequency specified by the sensor manufacturer.

CHAPTER 10

MEANS OF EGRESS

1008.4 Testing and maintenance. The equipment providing emergency power for *means of egress* illumination and *exit signs* shall be maintained in an operable condition and in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment."

1010.2.2 Security gates. In locations other than on doors where panic hardware is required, security gates may be installed provided they remain open when the premises is occupied by anyone other than security personnel.

[BE] 1011.16 Ladders. Permanent ladders shall not serve as a part of the *means of egress* from occupied spaces within a building. Permanent ladders shall be permitted to provide access to the following areas:

1. Spaces frequented only by personnel for maintenance, repair or monitoring of equipment.
2. Nonoccupiable spaces accessed only by catwalks, crawl spaces, freight elevators or very narrow passageways.
3. Raised areas used primarily for purposes of security, life safety or fire safety including, but not limited to, observation galleries, prison guard towers, fire towers or lifeguard stands.
4. Elevated levels in Group U not open to the general public.
5. Nonoccupied roofs that are not required to have *stairway* access in accordance with Section 1011.12.1.
6. Ladders shall be constructed in accordance with Section ~~306.5~~ 304.3.1.2 of the *International Mechanical Code*.

[BE] 1023.9 Stairway identification signs. A sign shall be provided at each floor landing in an *interior exit stairway* and *ramp* connecting more than three stories designating the floor level, the terminus of the top and bottom of the *interior exit stairway* and *ramp* and the identification of the *stairway* or *ramp*. The signage shall also state the story of, and the direction to, the *exit discharge* and the availability of roof access from the *interior exit stairway* and *ramp* for the fire department. The sign shall be located 5 feet (1,524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions. In addition to the *stairway* identification sign, a floor-level sign in visual characters, raised characters and braille complying with ICC A117.1 shall be located at each floor-level landing adjacent to the door leading from the *interior exit stairway* and *ramp* into the *corridor* to identify the floor level. See Appendix H of this code for sign installation requirements.

Exception: Buildings with previously *approved* signs may retain those signs until the signs are replaced. The replacement signs shall be installed in accordance with Appendix H of this code.

1023.9.2 Signs on occupancy side of stairway doors. Approved stairway identification signs shall be located at each floor level on the occupancy side of all interior vertical exit enclosures, regardless of height of the building. See Appendix H for installation requirements.

Exception: Buildings with previously *approved* signs may retain those signs until the signs are replaced. The replacement signs shall be installed in accordance with Appendix H.

1023.9.3 Reentry. Where stairway doors are permitted to be locked from the stairway side in accordance with the *Building Code*, provisions for reentry shall be provided. In buildings not provided with an emergency control situation, or where the control station is not attended at all times while the building is occupied, alternate methods for rereleasing stairway doors shall be provided as required by the *fire code official*.

[BE] 1029.9.6.1 Assembly aisle obstructions. There shall not be obstructions in the minimum width or required capacity of *aisles*. *Where required by the fire code official, approved methods of identification and maintenance of aisles shall be provided to prohibit their obstruction.*

Exception: *Handrails* are permitted to project into the required width of stepped *aisles* and ramped aisles in accordance with Section 1014.8.

CHAPTER 11

CONSTRUCTION REQUIREMENTS FOR EXISTING BUILDINGS

1103.2 Emergency responder radio coverage in existing buildings. Existing buildings that do not have approved radio coverage for emergency responders within the building, based upon the existing coverage levels of the public safety communication systems of the jurisdiction at the exterior of the building, shall be equipped with such coverage according to one of the following:

1. Where an existing wired communication system cannot be repaired or is being replaced, or where not approved in accordance with Section 510.1, Exception 1, an ERRC system shall be installed to comply with this code.
2. Where an existing building is found to be in violation of the provisions of Section 510, the owner shall be responsible for correcting those deficiencies in a timely manner. The owner shall submit appropriate plans to obtain building permit(s) for the installation of necessary equipment within the time frame established by the fire code official-adopting authority.
3. In facilities where emergency responder radio coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the fire code official shall have the authority to accept an automatically activated emergency responder radio coverage system.

Exception: Where the fire code official it is determined by the fire code official that the an ERRC radio coverage system is not needed.

1103.2.1 Compliance verification. Alterations to existing buildings require compliance verification testing by a City of Houston registered ERRC third-party special inspector. A copy of the special inspection report shall be submitted to the building official for review and archiving to the project records prior to the project final or issuing of a Certificate of Compliance or Certificate of Occupancy.

Exception: Buildings without basements and three stories or less in height with an aggregate total building area of 50,000 square feet or less.

NOTE: ERRC special inspection reports shall be submitted by email directly to the Customer Assistance & Code Development Office of the Houston Permitting Center at: HPC-RA@houstontx.gov.

1103.7.6 Group R-2. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in existing Group R-2 occupancies more than three stories in height or with more than 16 *dwelling or sleeping units*.

Exceptions:

1. Where each living unit is separated from other contiguous living units by *fire barriers* having a *fire-resistance rating* of not less than $\frac{3}{4}$ hour, and where each living unit has either its own independent *exit* or its own independent stairway or ramp discharging at grade.

2. A separate fire alarm system is not required in buildings that are equipped throughout with an *approved supervised automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 and ~~having~~ a local alarm to notify all occupants.
3. A fire alarm system is not required in buildings that do not have interior *corridors* serving *dwelling units* and are protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, provided that *dwelling units* either have a *means of egress* door opening directly to an exterior *exit* access that leads directly to the *exits* or are served by open-ended *corridors* designed in accordance with Section 1027.6, Exception 3.
4. A fire alarm system is not required in buildings that do not have interior *corridors* serving *dwelling units*, do not exceed three stories in height and comply with both of the following:
 - 4.1. Each *dwelling unit* is separated from other contiguous *dwelling units* by *fire barriers* having a *fire-resistance rating* of not less than $\frac{3}{4}$ hour.
 - 4.2. Each *dwelling unit* is provided with hardwired, interconnected smoke alarms as required for new construction in Section 907.2.11.
5. Condominiums, as defined by Chapter 82 of the *Texas Property Code*.
6. A fire alarm system is not required in buildings that do not have interior *corridors* serving *dwelling units* (or in any dwellings that do not exit into an interior *corridor*) unless rehabilitation work is performed in the building with a cost that is equal to or exceeds twenty five percent (25%) of the market value of the building.

1103.7.6.1 Monitoring. The fire alarm system required by this section shall not be required to be monitored by a third party. This fire alarm system only requires pull stations that will produce a local audible alarm and activate in an on-site management office, if the property in which the building is located has an on-site management office.

1103.8.1 Where required. Existing Group I-1 and R occupancies shall be provided with single-station smoke alarms in accordance with Section 907.2.11. Interconnection and power sources shall be in accordance with Section 1103.8.2 and 1103.8.3, respectively. After January 1, 2017, as a battery-operated single-station alarm is replaced, that smoke alarm shall be replaced with a tamper-resistant battery-operated single-station smoke alarm. Provided, however, nothing in this section shall require an owner to replace an operational battery-operated single-station smoke alarm. For the purposes of this provision, a *tamper-resistant battery-operated single-station smoke alarm* shall mean a sealed, single-station smoke alarm with a long-life lithium or similar battery.

Exceptions:

1. Where the code that was in effect at the time of construction required smoke alarms and smoke alarms complying with those requirements are already provided.

2. Where smoke alarms have been installed in occupancies and dwellings that were not required to have them at the time of construction, additional smoke alarms shall not be required provided that the existing smoke alarms comply with requirements that were in effect at the time of installation.
3. Where smoke detectors connected to a fire alarm system have been installed as a substitute for smoke alarms.

1103.8.1.1 Group R owner and tenant duties. The owner or manager of a residential building shall ensure that each smoke detector required by Section 1103.8.1 is installed and operational when the tenant first occupies the unit. After the tenant takes possession of the unit, it shall be the duty of the tenant to regularly test each smoke detector in the unit, and the tenant shall notify the owner immediately in writing of any problem, defect, malfunction or failure of any detector in the unit. Upon notification by the tenant, or upon notification by an inspector of the jurisdiction, that a smoke detector in the residential unit is not in proper working order, the owner shall have the detector repaired or replaced.

Exception: The provisions of this section do not apply to dwelling units governed by Subchapter F of Chapter 92 of the Texas Property Code.

1104.16.7 Maintenance. Fire escape *stairways* shall be kept clear and unobstructed at all times and shall be maintained in good working order. Inspections, testing, and maintenance shall be in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment."

CHAPTER 12

~~RESERVED~~

ENERGY SYSTEMS

SECTION 1201

GENERAL

1201.1 Scope. The provisions of this chapter shall apply to the installation, operation and maintenance of energy systems used for generating or storing energy. It shall not apply to equipment associated with the generation, control, transformation, transmission, or distribution of energy installations that is under the exclusive control of an electric utility or lawfully designated agency.

1201.2 Electrical wiring equipment. Electrical wiring and equipment used in connection with energy systems shall be installed and maintained in accordance with Chapter 12 and NFPA 70.

1201.3 Mixed system installation. Where approved, the aggregate kWh energy in a fire area shall not exceed the maximum quantity specified for any of the energy systems in this chapter. Where required by the *fire code official*, a hazard mitigation analysis shall be provided and approved in accordance with Section 104.7.2 to evaluate any potential adverse interaction between the various energy systems and technologies.

SECTION 1202

DEFINITIONS

1202.1 Definitions. The following terms are defined in Chapter 2:

BATTERY SYSTEM, STATIONARY STORAGE.

BATTERY TYPES.

Lead-acid battery.

CAPACITOR ARRAY.

CAPACITOR ENERGY STORAGE SYSTEM.

CRITICAL CIRCUIT.

EMERGENCY POWER SYSTEM.

ENERGY MANAGEMENT SYSTEMS.

FUEL CELL POWER SYSTEM, STATIONARY.

STANDBY POWER SYSTEM.

STATIONARY BATTERY ARRAY.

SECTION 1203
EMERGENCY AND STANDBY POWER SYSTEMS

1203.1 General. Emergency power systems and standby power systems required by this code or the *Building Code* shall comply with Sections 1203.1.1 through 1203.1.9.

1203.1.1 Stationary generators. Stationary emergency and standby power generators required by this code shall be listed in accordance with UL 2200-2012.

1203.1.2 Fuel line piping protection. Fuel lines supplying a generator set inside a high-rise building shall be separated from areas of the building other than the room the generator is located in by an approved method, or an assembly that has a fire-resistance rating of not less than 2 hours. Where the building is protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, the required fire-resistance rating shall be reduced to 1 hour.

1203.1.3 Installation. Emergency power systems and standby power systems shall be installed in accordance with the *Building Code*, NFPA 70, NFPA 110-2016 and NFPA 111-2013.

1203.1.4. Load transfer. Emergency power systems shall automatically provide secondary power within 10 seconds after primary power is lost, unless specified otherwise in this code. Standby power systems shall automatically provide secondary power within 60 seconds after primary power is lost, unless specified otherwise in this code.

1203.1.5 Load duration. Emergency power systems and standby power systems shall be designed to provide the required power for a minimum duration of 2 hours without being refueled or recharged, unless specified otherwise in this code.

1203.1.6 Uninterruptable power source. An uninterrupted source of power shall be provided for equipment where required by the manufacturer's instructions, the listing, this code or applicable referenced standards.

1203.1.7 Interchangeability. Emergency power systems shall be an acceptable alternative for installations that require standby power systems.

1203.1.8 Group I-2 occupancies. In Group I-2 occupancies, where an essential electrical system is located in flood hazard areas established in Section 1612.3 of the *Building Code* and where new or replacement essential electrical system generators are installed, the system shall be located and installed in accordance with ASCE 24-14.

1203.1.9 Maintenance. Existing installations shall be maintained in accordance with the original approval and Section 1203.4.

1203.2 Where required. Emergency and standby power systems shall be provided where required by Sections 1203.2.1 through 1203.2.18.

1203.2.1 Ambulatory care facilities. Essential electrical systems for ambulatory care facilities shall be in accordance with Section 422.6 of the *Building Code*.

1203.2.2 Elevators and platform lifts. Standby power shall be provided for elevators and platform lifts as required in Sections 607.2, 1009.4, and 1009.5.

1203.2.3 Emergency responder radio coverage systems. Standby power shall be provided for emergency responder radio coverage systems as required in Section 510.4.2.3. The standby power supply shall be capable of operating the emergency responder radio coverage system for a duration of not less than 24 hours.

1203.2.4 Emergency voice/alarm communication systems. Emergency power shall be provided for emergency voice/alarm communication systems as required in Section 907.5.2.2.5. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72-2016.

1203.2.5 Exit signs. Emergency power shall be provided for exit signs as required in Section 1013.6.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

1203.2.6 Gas detection systems. Emergency power shall be provided for gas detection systems where required by Sections 1203.2.9 and 1203.2.16. Standby power shall be provided for gas detection systems where required by Section 916.5.

1203.2.7 Group I-2 occupancies. Essential electrical systems for Group I-2 occupancies shall be in accordance with Section 407.10 of the *Building Code*.

1203.2.8 Group I-3 occupancies. Power-operated sliding doors or power-operated locks for swinging doors in Group I-3 occupancies shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks.

Exceptions:

- 1.** Emergency power is not required in facilities where provisions for remote locking and unlocking of occupied rooms in Occupancy Condition 4 are not required as set forth in the *Building Code*.
- 2.** Emergency power is not required where remote mechanical operating releases are provided.

1203.2.9 Hazardous materials. Emergency and standby power shall be provided in occupancies with hazardous materials as required in the following sections:

- 1.** Sections 5004.7 and 5005.1.5 for hazardous materials.
- 2.** Sections 6004.2.2.8 and 6004.3.4.2 for highly toxic and toxic gases.
- 3.** Section 6204.1.11 for organic peroxides.

1203.2.10 High-rise buildings. Standby power and emergency power shall be provided for high-rise buildings as required in Section 403 of the *Building Code*, and shall be in accordance with Section 1203.

1203.2.11 Special purpose horizontal sliding doors. Standby power shall be provided for horizontal sliding doors as required in Section 1010.1.4.3. The standby power supply shall have a capacity to operate not fewer than 50 closing cycles of the door.

1203.2.12 Hydrogen fuel gas rooms. Standby power shall be provided for hydrogen fuel gas rooms as required by Section 5808.7.

1203.2.13 Laboratory suites. Standby or emergency power shall be provided in accordance with Section 5004.7 where *laboratory suites* are located above the sixth story above grade plane or located in a story below grade plane.

1203.2.14 Means of egress illumination. Emergency power shall be provided for *means of egress* illumination in accordance with Sections 1008.3 and 1104.5.1.

1203.2.15 Membrane structures. Standby power shall be provided for auxiliary inflation systems in permanent membrane structures in accordance with Section 2702 of the *Building Code*. Auxiliary inflation systems shall be provided in temporary air-supported and air-inflated membrane structures in accordance with Section 3103.10.4.

1203.2.16 Semiconductor fabrication facilities. Emergency power shall be provided for semiconductor fabrication facilities as required in Section 2703.15.

1203.2.17 Smoke control systems. Standby power shall be provided for smoke control systems as required in Section 909.11.

1203.2.18 Underground buildings. Emergency and standby power shall be provided in underground buildings as required in Section 405 of the *Building Code* and shall be in accordance with Section 1203.

1203.3 Critical circuits. Required critical circuits shall be protected using one of the following methods:

- 1.** Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196-2001 and shall have a *fire-resistance rating* of not less than 1 hour.
- 2.** Electrical circuit protective systems shall have a *fire-resistance rating* of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements.
- 3.** Construction having a *fire-resistance rating* of not less than 1 hour.

1203.4 Maintenance. Emergency and standby power systems shall be maintained in accordance with NFPA 110-2016 and NFPA 111-2013 such that the system is capable of supplying service within the time specified for the type and duration required.

1203.4.1 Group I-2. In Group I-2 occupancies, emergency and standby power systems shall be maintained in accordance with NFPA 99-2018.

1203.4.2 Schedule. Inspection, testing and maintenance of emergency and standby power systems shall be in accordance with an approved schedule established upon completion and approval of the system installation.

1203.4.3 Records. Records of the inspections, testing and maintenance of emergency and standby power systems shall include the date of service, name of the servicing technician, a summary of conditions noted and a detailed description of any conditions requiring correction and what corrective action was taken. Such records shall be maintained.

1203.4.4 Switch maintenance. Emergency and standby power system transfer switches shall be included in the inspection, testing and maintenance schedule required by Section 1203.4.2. Transfer switches shall be maintained free from accumulated dust and dirt. Inspection shall include examination of the transfer switch contacts for evidence of deterioration. When evidence of contact deterioration is detected, the contacts shall be replaced in accordance with the transfer switch manufacturer's instructions.

1203.5 Operational inspection and testing. Emergency power systems, including all appurtenant components, shall be inspected and tested under load in accordance with NFPA 110-2016 and NFPA 111-2013.

Exception: Where the emergency power system is used for standby power or peak load shaving, such use shall be recorded and shall be allowed to be substituted for scheduled testing of the generator set, provided that appropriate records are maintained.

1203.5.1 Group I-2. In Group I-2 occupancies, emergency and standby power systems shall be inspected and tested under load in accordance with NFPA 99-2018.

1203.5.2 Transfer switch test. The test of the transfer switch shall consist of electrically operating the transfer switch from the normal position to the alternate position and then return to the normal position.

1203.6 Supervision of maintenance and testing. Routine maintenance, inspection and operational testing shall be overseen by a properly instructed individual.

SECTION 1204 **SOLAR PHOTOVOLTAIC POWER SYSTEMS**

1204.1 General. Solar photovoltaic systems shall be installed in accordance with Sections 1204.2 through 1204.5, and the *Building Code* or *Residential Code*. The electrical portion of solar PV systems shall be installed in accordance with NFPA 70.

1204.2 Access and pathways. Roof access, pathways, and spacing requirements shall be provided in accordance with Sections 1204.2.1 through 1204.3.3. Pathways shall be over areas capable of supporting fire fighters accessing the roof. Pathways shall be located in areas with minimal obstructions, such as vent pipes, conduit or mechanical equipment.

Exceptions:

1. Detached, nonhabitable Group U structures including, but not limited to, detached garages serving Group R-3 buildings, parking shade structures, carports, solar trellises and similar structures.
2. Roof access, pathways and spacing requirements need not be provided where the *fire code official* has determined that rooftop operations will not be employed.

1204.2.1 Solar photovoltaic systems for Group R-3 buildings. Solar photovoltaic systems for Group R-3 buildings shall comply with Sections 1204.2.1.1 through 1204.2.1.3.

Exceptions:

1. These requirements shall not apply to structures designed and constructed in accordance with the *Residential Code*.
2. These requirements shall not apply to roofs with slopes of 2 units vertical in 12 units horizontal or less.

1204.2.1.1 Pathways to ridge. Not fewer than two 36-inch-wide (914 mm) pathways on separate roof planes, from lowest roof edge to ridge, shall be provided on all buildings. Not fewer than one pathway shall be provided on the street or driveway side of the roof. For each roof plane with a photovoltaic array, not fewer than one 36-inch-wide (914 mm) pathway from lowest roof edge to ridge shall be provided on the same roof plane as the photovoltaic array, on an adjacent roof plane or straddling the same and adjacent roof planes.

1204.2.1.2 Setbacks at ridge. For photovoltaic arrays occupying 33 percent or less of the plan view total roof area, a setback of not less than 18 inches (457 mm) wide is required on both sides of a horizontal ridge. For photovoltaic arrays occupying more than 33 percent of the plan view total roof area, a setback of not less than 36 inches (914 mm) wide is required on both sides of a horizontal ridge.

1204.2.1.3 Alternative setbacks at ridge. Where an automatic sprinkler system is installed within the dwelling in accordance with Section 903.3.1.3, setbacks at the ridge shall conform to one of the following:

1. For photovoltaic arrays occupying 66 percent or less of the plan view total roof area, a setback of not less than 18 inches (457 mm) wide is required on both sides of a horizontal ridge.
2. For photovoltaic arrays occupying more than 66 percent of the plan view total roof area, a setback of not less than 36 inches (914 mm) wide is required on both sides of a horizontal ridge.

1204.2.2 Emergency escape and rescue openings. Panels and modules installed on Group R-3 buildings shall not be placed on the portion of a roof that is below an emergency escape and rescue opening. A pathway of not less than 36 inches (914 mm) wide shall be provided to the emergency escape and rescue openings.

1204.3 Other than Group R-3 buildings. Access to systems for buildings, other than those containing Group R-3 occupancies, shall be provided in accordance with Sections 1204.3.1 through 1204.3.3.

Exception: Where it is determined by the *fire code official* that the roof configuration is similar to that of a Group R-3 occupancy, the residential access and ventilation requirements in Sections 1204.2.1.1 through 1204.2.1.3 are a suitable alternative.

1204.3.1 Perimeter pathways. There shall be a minimum 6-foot-wide (1,829 mm) clear perimeter around the edges of the roof.

Exception: Where either axis of the building is 250 feet (76,200 mm) or less, the clear perimeter around the edges of the roof shall be permitted to be reduced to a minimum width of 4 feet (1,219 mm).

1204.3.2 Interior pathways. Interior pathways shall be provided between array sections to meet the following requirements:

1. Pathways shall be provided at intervals not greater than 150 feet (45,720 mm) throughout the length and width of the roof.
2. A pathway not less than 4 feet (1,219 mm) wide in a straight line to roof standpipes or ventilation hatches.
3. A pathway not less than 4 feet (1,219 mm) wide around roof access hatches, with not fewer than one such pathway to a parapet or roof edge.

1204.3.3 Smoke ventilation. The solar installation shall be designed to meet the following requirements:

1. Where nongravity-operated smoke and heat vents occur, a pathway not less than 4 feet (1,219 mm) wide shall be provided bordering all sides.
2. Smoke ventilation options between array sections shall be one of the following:
 - 2.1. A pathway not less than 8 feet (2,438 mm) wide.
 - 2.2. Where gravity-operated dropout smoke and heat vents occur, a pathway not less than 4 feet (1,219 mm) wide on not fewer than one side.

- 2.3. A pathway not less than 4 feet (1,219 mm) wide bordering 4-foot by 8-foot (1,219 mm by 2,438 mm) venting cutouts every 20 feet (6,096 mm) on alternating sides of the pathway.

1204.4 Ground-mounted photovoltaic panel systems. Ground-mounted photovoltaic panels systems shall comply with Section 1204.1 and this section. Setback requirements shall not apply to ground-mounted, free-standing photovoltaic arrays. A clear, brush-free area of 10 feet (3,048 mm) shall be required for ground-mounted photovoltaic arrays.

1204.5 Buildings with rapid shutdown. Buildings with rapid shutdown solar photovoltaic systems shall have permanent labels in accordance with Sections 1204.5.1 through 1204.5.3.

1204.5.1 Rapid shutdown type. The type of solar photovoltaic system rapid shutdown shall be labeled with one of the following:

1. For solar photovoltaic systems that shut down the array and the conductors leaving the array, a label shall be provided. The first two lines of the label shall be uppercase characters with a minimum height of $\frac{3}{8}$ inch (10 mm) in black on a yellow background. The remaining characters shall be uppercase with a minimum height of $\frac{3}{16}$ inch (5 mm) in black on a white background. The label shall be in accordance with Figure 1204.5.1(1) and state the following:

SOLAR PV SYSTEM EQUIPPED WITH
RAPID SHUTDOWN. TURN RAPID
SHUTDOWN SWITCH TO THE "OFF"
POSITION TO SHUT DOWN PV SYSTEM
AND REDUCE SHOCK HAZARD IN
ARRAY.

2. For photovoltaic systems that only shut down conductors leaving the array, a label shall be provided. The first two lines of the label shall be uppercase characters with a minimum height of $\frac{3}{8}$ inch (10 mm) in white on a red background and the remaining characters shall be capitalized with a minimum height of $\frac{3}{16}$ inch (5 mm) in black on a white background. The label shall be in accordance with Figure 1204.5.1(2) and state the following:

THIS SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN. TURN RAPID
SHUTDOWN SWITCH TO THE "OFF"
POSITION TO SHUT DOWN CONDDUC-
TORS OUTSIDE THE ARRAY. CONDOC-
TORS WITHIN ARRAY REMAIN
ENERGIZED IN SUNLIGHT

1204.5.1.1 Diagram. The labels in Section 1204.5.1 shall include a simple diagram of a building with a roof. Diagram sections in red signify sections of the solar photovoltaic system that are not shut down when the rapid shutdown switch is turned off.

1204.5.1.2 Location. The rapid shutdown label in Section 1204.5.1 shall be located not greater than 3 feet (914 mm) from the service disconnecting means to which the photovoltaic systems are connected, and shall indicate the location of all identified rapid shutdown switches if not at the same location.

1204.5.2 Buildings with more than one rapid shutdown type. Solar photovoltaic systems that contain rapid shutdown in accordance with both Items 1 and 2 of Section 1204.5.1 or solar photovoltaic systems where only portions of the systems on the building contain rapid shutdown, shall provide a detailed plan view diagram of the roof showing each different photovoltaic system and a dotted line around areas that remain energized after the rapid shutdown switch is operated.

1204.5.3 Rapid shutdown switch. A rapid shutdown switch shall have a label located not greater than 3 feet (914 mm) from the switch that states the following:

RAPID SHUTDOWN SWITCH
FOR SOLAR PV SYSTEM

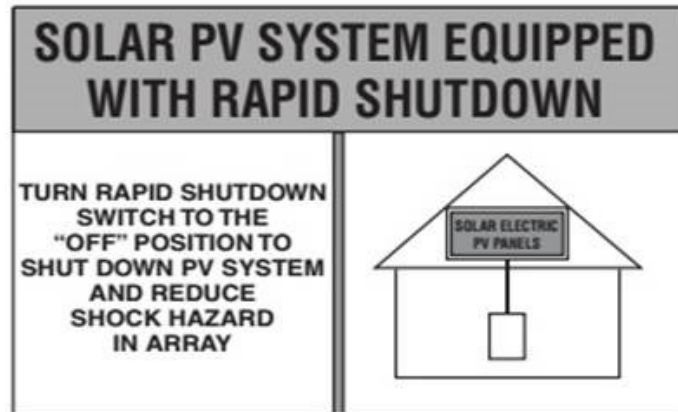


FIGURE 1204.5.1(1)
LABEL FOR SOLAR PV SYSTEM THAT REDUCE SHOCK HAZARD WITHIN ARRAY AND SHUT DOWN CONDUCTORS LEAVING ARRAY

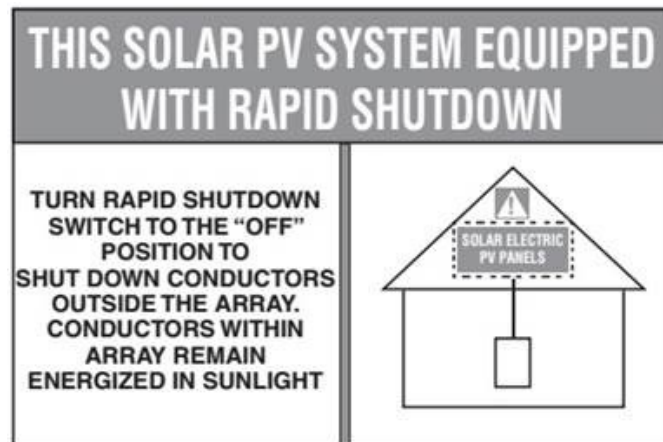


FIGURE 1204.5.1(2)
LABEL FOR SOLAR PV SYSTEMS THAT ONLY SHUT DOWN CONDUCTORS LEAVING THE ARRAY

SECTION 1205
STATIONARY FUEL CELL POWER SYSTEMS

1205.1 General. *Stationary fuel cell power systems* in new and existing occupancies shall comply with this section.

1205.2 Permits. Permits shall be obtained for stationary fuel cell power systems as set forth in Section 105.6.52.

1205.3 Equipment. Stationary fuel cell power systems shall comply with the following:

1. Prepackaged fuel cell power systems shall be listed and labeled in accordance with CSA FC 1-2012.
2. The modules and components in a preengineered fuel cell power system shall be listed and labeled in accordance with CSA FC 1-2012 and interconnected to complete the assembly of the system at the job site in accordance with the manufacturer's instructions and the module and component listings.
3. Field-fabricated fuel cell power systems shall be approved based on a review of the technical report provided in accordance with Section 104.7.2. The report shall be prepared by and bear the stamp of a registered design professional and shall include:
 - 3.1. A fire risk evaluation.
 - 3.2. An evaluation demonstrating the modules and components in the fuel cell power system comply with applicable requirements in CSA FC 1-2012.
 - 3.3. Documentation of the fuel cell power system's compliance with applicable NFPA 2-2016 and NFPA 853-2015 construction requirements.

1205.4 Installation. Stationary fuel cell power systems shall be installed and maintained in accordance with NFPA 70 and NFPA 853-2015, the manufacturer's installation instructions, and the listing. Stationary fuel cell power systems fueled by hydrogen shall be installed and maintained in accordance with NFPA 2-2016 and NFPA 70, the manufacturer's installation instructions and the listing.

1205.5 Residential use. Stationary fuel cell power systems shall not be installed in Group R-3 and R-4 buildings, or dwelling units associated with Group R-2 buildings unless they are specifically listed for residential use.

1205.6 Indoor installations. Stationary fuel cell power systems installed in indoor locations shall comply with Sections 1205.6 through 1205.6.2. For purposes of this section, an indoor location includes a roof and 50 percent or greater enclosing walls.

1205.6.1 Listed. Stationary fuel cell power systems installed indoors shall be specifically listed and labeled for indoor use.

1205.6.2 Separation. Rooms containing stationary fuel cell power systems shall be separated from the following occupancies by fire barriers or horizontal assemblies, or both, constructed in accordance with the Building Code.

1. Group B, F, M, S and U occupancies by 1-hour fire-resistance-rated construction.
2. Group A, E, I and R occupancies by 2-hour fire-resistance-rated construction.

Exception: Stationary fuel cell power systems with an aggregate rating less than 50 kW shall not be required to be separated from other occupancies provided that the systems comply with Section 903 of NFPA 853-2015.

1205.7 Vehicle impact protection. Where *stationary fuel cell power systems* are subject to impact by a motor vehicle, vehicle impact protection shall be provided in accordance with Section 312.

1205.8 Outdoor installation. *Stationary fuel cell power systems* located outdoors shall be separated by not less than 5 feet (1,524 mm) from the following:

1. Lot lines.
2. Public ways.
3. Buildings.
4. Stored combustible materials.
5. Hazardous materials.
6. High-piled stock.
7. Any portion of a designated means of egress system.
8. Other exposure hazards.

1205.9 Fuel supply. The design, location and installation of the fuel supply for *stationary fuel cell power systems* shall comply with Chapter 53, Chapter 58 and the *International Fuel Gas Code*, based on the particular fuel being supplied to the system.

1205.10 Manual shutoff. Access to a manual shutoff valve shall be provided for the fuel piping within 6 feet (1,829 mm) of any fuel storage tank serving the fuel cell and within 6 feet (1,829 mm) of the power system. If the fuel tank and the *stationary fuel cell power system* are less than 12 feet (3,658 mm) apart, a single shutoff valve shall be permitted. If the *stationary fuel cell power system* is located indoors, the shutoff valve shall be located outside of the room in which the system is installed, unless otherwise approved by the *fire code official*.

1205.11 Ventilation and exhaust. Ventilation and exhaust for stationary fuel cell power systems shall be provided in accordance NFPA 853-2015.

1205.12 Fire suppression. Fire suppression for stationary fuel cell power system installations shall be provided in accordance with NFPA 853-2015.

1205.13 Gas detection systems. Stationary fuel cell power systems shall be provided with a gas detection system. Detection shall be provided in approved locations in the fuel cell power system enclosure, the exhaust system or the room that encloses the fuel cell power system. The system shall be designed to activate at a flammable gas concentration of not more than 25 percent of the lower flammable limit (LFL).

1205.13.1 System activation. The activation of the gas detection system shall automatically:

1. Close valves between the gas supply and the fuel cell power system.
2. Shut down the fuel cell power system.
3. Initiate local audible and visible alarms in approved locations.

SECTION 1206 **ELECTRICAL ENERGY STORAGE SYSTEMS**

1206.1 Scope. The provisions in this section are applicable to energy storage systems designed to provide electrical power to a building or facility. These systems are used to provide standby or

emergency power, an uninterruptable power supply, load shedding, load sharing or similar capabilities.

1206.2 Stationary storage battery systems. Stationary storage battery systems having capacities exceeding the values shown in Table 1206.2 shall comply with Section 1206.2.1 through 1206.2.12.6, as applicable.

TABLE 1206.2
BATTERY STORAGE SYSTEM THRESHOLD QUANTITIES

BATTERY TECHNOLOGY	CAPACITY^a
Flow batteries ^b	20 kWh
Lead acid, all types	70 kWh
Lithium, all types	20 kWh
Nickel cadmium (Ni-Cd)	70 kWh
Sodium, all types	20 kWh ^c
Other battery technologies	10 kWh

For SI: 1 kilowatt hour = 3.6 megajoules

a. For batteries rated in amp-hours, kWh shall equal rated voltage times amp-hour rating divided by 1000.

b. Shall include vanadium, zinc-bromine, polysulfide-bromide, and other flowing electrolyte-type technologies.

c. 70 kWh for sodium-ion technologies.

1206.2.1 Permits. Permits shall be obtained for the installation and operation of stationary storage battery systems in accordance with Section 105.6.50.

1206.2.2 Construction documents. The following information shall be provided with the permit application:

1. Location and layout diagram of the room in which the stationary storage battery system is to be installed.
2. Details on hourly fire-resistance-rated assemblies provided.
3. Quantities and types of storage batteries and battery systems.
4. Manufacturer's specifications, ratings and listings of storage batteries and battery systems.
5. Details on energy management systems.
6. Location and content of signage.
7. Details on fire-extinguishing, smoke detection and ventilation systems.
8. Rack storage arrangement, including seismic support criteria.

1206.2.3 Hazard mitigation analysis. A failure modes and effects analysis (FMEA) or other approved hazard mitigation analysis shall be provided in accordance with Section 104.7.2 under any of the following conditions:

1. Battery technologies not specifically identified in Table 1206.2 are provided.
2. More than one stationary storage battery technology is provided in a room or indoor area where there is a potential for adverse interaction between technologies.

3. Where allowed as a basis for increasing maximum allowable quantities in accordance with Section 1206.2.9.

1206.2.3.1 Fault condition. The hazard mitigation analysis shall evaluate the consequences of the following failure modes, and others deemed necessary by the fire code official. Only single-failure modes shall be considered.

1. Thermal runaway condition in a single-battery storage rack, module or array.
2. Failure of any energy management system.
3. Failure of any required ventilation system.
4. Voltage surges on the primary electric supply.
5. Short circuits on the load side of the stationary battery storage system.
6. Failure of the smoke detection, fire-extinguishing or gas detection system.
7. Spill neutralization not being provided or failure of the secondary containment system.

1206.2.3.2 Analysis approval. The fire code official is authorized to approve the hazardous mitigation analysis provided that the hazard mitigation analysis demonstrates all of the following:

1. Fire or explosions will be contained within unoccupied battery storage rooms for the minimum duration of the fire-resistance-rated walls identified in Table 509 of the *Building Code*.
2. Fire and explosions in battery cabinets in occupied work centers will be detected in time to allow occupants within the room to evacuate safely.
3. Toxic and highly toxic gases released during fires and other fault conditions shall not reach concentrations in excess of Immediately Dangerous to Life or Health (IDLH) levels in the building or adjacent means of egress routes during the time deemed necessary to evacuate from that area.
4. Flammable gases released from batteries during charging, discharging and normal operation shall not exceed 25 percent of their lower flammability limit (LFL).
5. Flammable gases released from batteries during fire, overcharging and other abnormal conditions shall not create an explosion hazard that will injure occupants or emergency responders.

1206.2.3.3 Additional protection measures. Construction, equipment and systems that are required for the stationary storage battery system to comply with the hazardous mitigation analysis, including but not limited to those specifically described in Section 1206.2, shall be installed, maintained and tested in accordance with nationally recognized standards and specified design parameters.

1206.2.4 Seismic and structural design. Stationary storage battery systems shall comply with the seismic design requirements in Chapter 16 of the *Building Code*, and shall not exceed the floor-loading limitation of the building.

1206.2.5 Vehicle impact protection. Where stationary storage battery systems are subject to impact by a motor vehicle, including forklifts, vehicle impact protection shall be provided in accordance with Section 312.

1206.2.6 Combustible storage. Combustible materials not related to the stationary storage battery system shall not be stored in battery rooms, cabinets or enclosures. Combustible materials in occupied work centers covered by Section 1206.2.8.5 shall not be stored less than 3 feet (915 mm) from battery cabinets.

1206.2.7 Testing, maintenance and repair. Storage batteries and associated equipment and systems shall be tested and maintained in accordance with the manufacturer's instructions. Any storage batteries or system components used to replace existing units shall be compatible with the battery charger, energy management systems, other storage batteries and other safety systems. Introducing other types of storage batteries into the stationary storage battery system or other types of electrolytes into flow battery systems shall be treated as a new installation and require approval by the *fire code official* before the replacements are introduced into service.

1206.2.8 Location and construction. Rooms and areas containing stationary storage battery systems shall be designed, located and constructed in accordance with Sections 1206.2.8.1 through 1206.2.8.7.4.

1206.2.8.1 Location. Stationary storage battery systems shall not be located in areas where the floor is located more than 75 feet (22,860 mm) above the lowest level of fire department vehicle access, or where the floor level is more than 30 feet (9,144 mm) below the finished floor of the lowest level of exit discharge.

Exceptions:

1. Lead acid and nickel cadmium stationary storage battery systems.
2. Installations on noncombustible rooftops of buildings exceeding 75 feet (22,860 mm) in height that do not obstruct fire department rooftop operations, where approved by the fire code official.

1206.2.8.2 Separation. Rooms containing stationary storage battery systems shall be separated from other areas of the building in accordance with Section 509.1 of the *Building Code*. Battery systems shall be allowed to be in the same room with the equipment they support.

1206.2.8.3 Stationary battery arrays. Storage batteries, prepackaged stationary storage battery systems and preengineered stationary storage battery systems shall be segregated into stationary battery arrays not exceeding 50 kWh (180 megajoules) each. Each stationary battery array shall be spaced not less than 3 feet (914 mm) from other stationary battery arrays and from walls in the storage room or area. The storage arrangements shall comply with Chapter 10.

Exceptions:

1. Lead acid and nickel cadmium storage battery arrays.

2. Listed preengineered stationary storage battery systems and prepackaged stationary storage battery systems shall not exceed 250 kWh (900 megajoules) each.
3. The *fire code official* is authorized to approve listed, preengineered and prepackaged battery arrays with larger capacities or smaller battery array spacing if large-scale fire and fault condition testing conducted or witnessed and reported by an approved testing laboratory is provided showing that a fire involving one array will not propagate to an adjacent array, and be contained within the room for the duration equal to the fire-resistance rating of the room separation specified in Table 509 of the *Building Code*.

1206.2.8.4 Separate rooms. Where stationary batteries are installed in a separate equipment room that can be accessed only by authorized personnel, they shall be permitted to be installed on an open rack for ease of maintenance.

1206.2.8.5 Occupied work centers. Where stationary storage batteries are located in an occupied work center, they shall be housed in a noncombustible cabinet or other enclosure to prevent access by unauthorized personnel.

1206.2.8.5.1 Cabinets. Where stationary batteries are contained in cabinets in occupied work centers, the cabinet enclosures shall be located within 10 feet (3,048 mm) of the equipment that they support.

1206.2.8.6 Signage. Approved signs shall be provided on doors or in locations near entrances to stationary storage battery system rooms and shall include the following or equivalent:

1. The room contains energized battery systems.
2. The room contains energized electrical circuits.
3. The additional markings required in Section 1206.2.12 for the types of storage batteries contained within the room.

Exception: Existing stationary storage battery systems shall install signage required at the time it was installed where the installation was completed and inspected with approved permits obtained from the *Authority Having Jurisdiction*. In any case where existing installation was completed without a permit, then a permit shall be obtained and compliance with current code provisions is required.

1206.2.8.6.1 Electrical disconnects. Where the stationary storage battery system disconnecting means is not within sight of the main service disconnecting means, placards or directories shall be installed at the location of the main service disconnecting means indicating the location of stationary storage battery system disconnecting means in accordance with NFPA 70.

1206.2.8.6.2 Cabinet signage. Battery storage cabinets provided in occupied work centers in accordance with Section 1206.2.8.5 shall have exterior labels that identify the manufacturer and model number of the system and electrical rating (voltage and current) of the contained battery system. There shall be signs within the cabinet that indicate the relevant electrical and chemical hazards, as required by Section 1206.2.12.

1206.2.8.7 Outdoor installations. Stationary storage battery systems located outdoors shall comply with Sections 1206.2.8.7 through 1206.2.8.7.4, in addition to all applicable requirements of Section 1206.2. Installations in outdoor enclosures or containers that can be occupied for servicing, testing, maintenance and other functions shall be treated as battery storage rooms.

Exception: Stationary battery arrays in noncombustible containers shall not be required to be spaced 3 feet (914 mm) from the container walls.

1206.2.8.7.1 Separation. Stationary storage battery systems located outdoors shall be separated by a minimum 5 feet (1,524 mm) from the following:

1. Lot lines.
2. Public ways.
3. Buildings.
4. Stored combustible materials.
5. Hazardous materials.
6. High-piled stock.
7. Other exposure hazards.

Exception: The *fire code official* is authorized to approve smaller separation distances if large-scale fire and fault condition testing conducted or witnessed and reported by an approved testing laboratory is provided showing that a fire involving the system will not adversely impact occupant egress from adjacent buildings, or adversely impact adjacent stored materials or structures.

1206.2.8.7.2 Means of egress. Stationary storage battery systems located outdoors shall be separated from any *means of egress* as required by the *fire code official* to ensure safe egress under fire conditions, but not less than 10 feet (3,048 mm).

Exception: The *fire code official* is authorized to approve lesser separation distances if large-scale fire and fault condition testing conducted or witnessed and reported by an *approved* testing laboratory is provided showing that a fire involving the system will not adversely impact occupant egress.

1206.2.8.7.3 Security of outdoor areas. Outdoor areas in which stationary storage battery systems are located shall be secured against unauthorized entry and safeguarded in an approved manner.

1206.2.8.7.4 Walk-in units. Where a stationary storage battery system includes an outer enclosure, the unit shall only be entered for inspection, maintenance and repair of batteries and electronics, and shall not be occupied for other purposes.

1206.2.9 Maximum allowable quantities. *Fire areas* within buildings containing stationary storage battery systems exceeding the maximum allowable quantities in Table 1206.2.9 shall comply with all applicable Group H occupancy requirements in this code and the *Building Code*.

Exception: Where approved by the *fire code official*, areas containing stationary storage battery that exceed the amounts in Table 1206.2.9 shall be treated as incidental use areas and not Group H occupancies based on a hazardous mitigation analysis in accordance with Section 1206.2.3 and large-scale fire and fault condition testing conducted or witnessed and reported by an approved testing laboratory.

**TABLE 1206.2.9
MAXIMUM ALLOWABLE BATTERY QUANTITIES**

<u>BATTERY TECHNOLOGY</u>	<u>MAXIMUM ALLOWABLE QUANTITIES^a</u>	<u>GROUP H OCCUPANCY</u>
Flow batteries ^b	600 kWh	Group H-2
Lead acid, all types	Unlimited	Not Applicable
Lithium, all types	600 kWh	Group H-2
Nickel cadmium (Ni-Cd)	Unlimited	Not Applicable
Sodium, all types	600 kWh	Group H-2
Other battery technologies	200 kWh	Group H-2 ^c

For SI: 1 kilowatt hour = 3.6 megajoules

a. For batteries rated in amp-hours, Kilowatt-hours (kWh) shall equal rated voltage times the amp-hour rating divided by 1,000.

b. Shall include vanadium, zinc-bromine, polysulfide-bromide, and other flowing electrolyte-type technologies.

c. Shall be a Group H-4 occupancy if the *fire code official* determines that a fire or thermal runaway involving the battery technology does not represent a significant fire hazard.

1206.2.9.1 Mixed battery systems. Where areas within buildings contain different types of storage battery technologies, the total aggregate quantities of batteries shall be determined based on the sum of percentages of each battery type quantity divided by the maximum allowable quantity of each battery type. If the sum of the percentages exceeds 100 percent, the area shall be treated as a Group H occupancy in accordance with Table 1206.2.9.

1206.2.10 Storage batteries and equipment. The design and installation of storage batteries and related equipment shall comply with Sections 1206.2.10.1 through 1206.2.10.8.

1206.2.10.1 Listings. Storage batteries and battery storage systems shall comply with the following:

1. Storage batteries shall be listed in accordance with UL 1973-2013.
2. Prepackaged and preengineered stationary storage battery systems shall be listed in accordance with UL 9540-2014.

Exception: Lead-acid batteries are not required to be listed.

1206.2.10.2 Prepackaged and preengineered systems. Prepackaged and preengineered stationary storage battery systems shall be installed in accordance with their listing and the manufacturer's instructions.

1206.2.10.3 Energy management system. An approved energy management system shall be provided for battery technologies other than lead-acid and nickel cadmium for monitoring and balancing cell voltages, currents and temperatures within the manufacturer's specifications. The system shall transmit an alarm signal to an approved location if potentially

hazardous temperatures or other conditions such as short circuits, other voltage or under voltage are detected.

1206.2.10.4 Battery chargers. Battery chargers shall be compatible with the battery chemistry and the manufacturer's electrical ratings and charging specifications. Battery chargers shall be listed and labeled in accordance with UL 1564-2015 or provided as part of a listed preengineered or prepackaged stationary storage battery system.

1206.2.10.5 Inverters. Inverters shall be listed and labeled in accordance with UL 1741-2015. Only inverters listed and labeled for utility interactive system use and identified as interactive shall be allowed to operate in parallel with the electric utility power system to supply power to common loads.

1206.2.10.6 Safety caps. Vented batteries shall be provided with flame-arresting safety caps.

1206.2.10.7 Thermal runaway. Where required by Section 1206.2.12, storage batteries shall be provided with a listed device or other approved method to prevent, detect and control thermal runaway.

1206.2.10.8 Toxic and highly toxic gas. Stationary storage battery systems that have the potential to release toxic and highly toxic gas during charging, discharging and normal use conditions shall comply with Chapter 60.

1206.2.11 Fire-extinguishing and detection systems. Fire-extinguishing and detections systems shall be provided in accordance with Sections 1206.2.11.1 through 1206.2.11.5.

1206.2.11.1 Fire-extinguishing systems. Rooms containing stationary storage battery systems shall be equipped with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1. Commodity classifications for specific technologies of storage batteries shall be in accordance with Chapter 5 of NFPA 13-2016. If the storage battery types are not addressed in Chapter 5 of NFPA 13-2016, the *fire code official* is authorized to approve the fire-extinguishing system based on full-scale fire and fault condition testing conducted or witnessed and reported by an *approved laboratory*.

Exception: Spaces or areas containing stationary storage battery systems used exclusively for telecommunications equipment in accordance with Section 903.2.

1206.2.11.1.1 Alternative fire-extinguishing systems. Battery systems that utilize water-reactive materials shall be protected by an approved alternative automatic fire-extinguishing system in accordance with Section 904. The system shall be listed for protecting the type, arrangement and quantities of storage batteries in the room. The *fire code official* shall be permitted to approve the alternative fire extinguishing system based on full-scale fire and fault condition testing conducted or witnessed and reported by an *approved laboratory*.

1206.2.11.2 Smoke detection system. An *approved automatic smoke detection system* shall be installed in rooms containing

stationary storage battery systems in accordance with Section 907.2.

1206.2.11.3 Ventilation. Where required by Section 1206.2.3 or 1206.2.12, ventilation of rooms containing stationary storage battery systems shall be provided in accordance with the *Mechanical Code* and one of the following:

1. The ventilation system shall be designed to limit the maximum concentration of flammable gas to 25 percent of the lower flammability limit, or for hydrogen, 1.0 percent of the total volume of the room.
2. Continuous ventilation shall be provided at a rate of not less than 1 cubic foot per minute (cfm) per square foot [0.00508 m³/(s • m²)] of floor area, but not less than 150 cfm (4 m³/min).

The exhaust system shall be designed to provide air movement across all parts of the floor for gases having a vapor density greater than air and across all parts of the vault ceiling for gases having a vapor density less than air.

1206.2.11.3.1 Cabinet ventilation. Where cabinets located in occupied spaces contain storage batteries that are required by Section 1206.2.3 or 1206.2.12 to be provided with ventilation, the cabinet shall be provided with ventilation in accordance with Section 1206.2.11.3.

1206.2.11.3.2 Supervision. Required mechanical ventilation systems for rooms and cabinets containing storage batteries shall be supervised by an *approved* central station, proprietary or remote station service or shall initiate an audible and visual signal at an *approved* constantly attended on-site location.

1206.2.11.4 Gas detection system. Where required by Section 1206.2.3 or 1206.2.12, rooms containing stationary storage battery systems shall be protected by a gas detection system complying with Section 916. The gas detection system shall be designed to activate where the level of flammable gas exceeds 25 percent of the lower flammable limit (LFL), or where the level of toxic or highly toxic gas exceeds one-half of the IDLH, or where gas indicative of venting from a lithium-ion cell is detected.

1206.2.11.4.1 System activation. Activation of the gas detection system shall result in all of the following:

1. Initiation of distinct audible and visible alarms in the battery storage room.
2. Transmission of an alarm to an approved location.
3. De-energizing of the battery charger.

4. Activation of the mechanical ventilation system, where the system is interlocked with the gas detection system.

Exception: Lead-acid and nickel-cadmium stationary storage battery systems shall not be required to comply with Items 1, 2 and 3.

1206.2.11.5 Spill control and neutralization. Where required by Section 1206.2.12, approved methods and materials shall be provided for the control and neutralization of spills of electrolyte or other hazardous materials in areas containing stationary storage batteries as follows:

1. For batteries with free-flowing electrolyte, the method and materials shall be capable of neutralizing a spill of the total capacity from the largest cell or block to a pH between 5.0 and 9.0.
2. For batteries with immobilized electrolyte, the method and material shall be capable of neutralizing a spill of 3.0 percent of the capacity of the largest cell or block in the room to a pH between 5.0 and 9.0.

1206.2.12 Specific battery-type requirements. This section includes requirements applicable to specific types of storage batteries. Stationary storage battery systems with more than one type of storage battery shall comply with requirements applicable to each battery type.

1206.2.12.1 Lead-acid storage batteries. Stationary storage battery systems utilizing lead-acid storage batteries shall comply with the following:

1. Ventilation shall be provided in accordance with Section 1206.2.11.3.
2. Spill control and neutralization shall be in accordance with Section 1206.2.11.5.
3. Thermal runaway protection shall be provided for valve-regulated lead-acid (VRLA) storage batteries in accordance with Section 1206.2.10.7.
4. The signage in Section 1206.2.8.6 shall indicate the room contains lead-acid batteries.

1206.2.12.2 Nickel-cadmium (Ni-Cd) storage batteries. Stationary storage battery systems utilizing nickel-cadmium (Ni-Cd) storage batteries shall comply with the following:

1. Ventilation shall be provided in accordance with Section 1206.2.11.3.
2. Spill control and neutralization shall be in accordance with Section 1206.2.11.5.
3. Thermal runaway protection shall be provided for valve-regulated sealed nickel-cadmium storage batteries in accordance with Section 1206.2.10.7.

4. The signage in Section 1206.2.8.6 shall indicate the room contains nickel-cadmium batteries.

1206.2.12.3 Lithium-ion storage batteries. The signage in Section 1206.2.8.6 shall indicate the type of lithium batteries contained in the room.

1206.2.12.4 Sodium-beta storage batteries. Stationary storage battery systems utilizing sodium-beta storage batteries shall comply with the following:

1. Ventilation shall be provided in accordance with Section 1206.2.11.3.
2. The signage in Section 1206.2.8.6 shall indicate the type of sodium batteries in the room and include the instructions, "APPLY NO WATER."

1206.2.12.5 Flow storage batteries. Stationary storage battery systems utilizing flow storage batteries shall comply with the following:

1. Ventilation shall be provided in accordance with Section 1206.2.11.3.
2. Spill control and neutralization shall be in accordance with Section 1206.2.11.5.
3. The signage required in Section 1206.2.8.6 shall indicate the type of flow batteries in the room.

1206.2.12.6 Other battery technologies. Stationary storage battery systems utilizing battery technologies other than those described in Sections 1206.2.12.1 through 1206.2.12.5 shall comply with the following:

1. Gas detection systems complying with Section 916 shall be provided in accordance with Section 1206.2.11.4 where the batteries have the potential to produce toxic or highly toxic gas in the storage room or cabinet in excess of the permissible exposure limits (PEL) during charging, discharging and normal system operation.
2. Mechanical ventilation shall be provided in accordance with Section 1206.2.11.3.
3. Spill control and neutralization shall be in accordance with Section 1206.2.11.5.
4. In addition to the signage required in Section 1206.2.8.6, the marking shall identify the type of batteries present, describe the potential hazards associated with the battery type, and indicate that the room contains energized electrical circuits.

1206.3 Capacitor energy storage systems. Capacitor energy storage systems having capacities exceeding 3 kWh (10.8 megajoules) shall comply with Sections 1206.3 through 1206.3.2.6.1.

Exception: Capacitors regulated by NFPA 70, Chapter 460, and capacitors included as a component part of other listed electrical equipment are not required to comply with this section.

1206.3.1 Permits. Permits shall be obtained for the installation of capacitor energy storage systems in accordance with Section 105.6.51.

1206.3.2 Location and construction. Rooms and areas containing capacitor energy storage systems shall be designed, located and constructed in accordance with Sections 1206.3.2 through 1206.3.2.5.

1206.3.2.1 Location. Capacitor energy storage systems shall not be located in areas where the floor is located more than 75 feet (22,860 mm) above the lowest level of fire department vehicle access, or where the floor level is more than 30 feet (9,144 mm) below the finished floor of the lowest level of exit discharge.

1206.3.2.2 Separation. Rooms containing capacitor energy storage systems shall be separated from the following occupancies by fire barriers or horizontal assemblies, or both, constructed in accordance with the *Building Code*.

1. Group B, F, M, S and U occupancies by 1-hour fire-resistance-rated construction.
2. Group A, E, I and R occupancies by 2-hour fire-resistance-rated construction.

1206.3.2.3 Capacitor arrays. Capacitor energy storage systems shall be segregated into capacitor arrays not exceeding 50 kWh (180 megajoules) each. Each array shall be spaced not less than 3 feet (914 mm) from other arrays and from walls in the storage room or area. The storage arrangements shall comply with Chapter 10.

Exception: Capacitor energy storage systems in noncombustible containers located outdoors shall not be required to be spaced 3 feet (914 mm) from the container walls.

1206.3.2.4 Signage. Approved signs shall be provided on doors or in locations adjacent to the entrances to capacitor energy storage system rooms and shall include the following or equivalent verbiage and information:

1. "CAPACITOR ENERGY STORAGE ROOM."
2. "THIS ROOM CONTAINS ENERGIZED ELECTRICAL CIRCUITS."
3. An identification of the type of capacitors present and the potential hazards associated with the capacitor type.

1206.3.2.5 Electrical disconnects. Where the capacitor energy storage system disconnecting means is not within sight of the main service disconnecting means, placards or directories shall be installed at the location of the main service disconnecting means identifying the location of the capacitor energy storage system disconnecting means in accordance with NFPA 70.

1206.3.2.6 Outdoor installation. Capacitor energy systems located outdoors shall comply with Sections 1206.3.2.6 through 1206.3.2.6.4 in addition to all applicable requirements of Section 1206.3. Installations in outdoor enclosures or containers that can be occupied for servicing, testing, maintenance and other functions shall be treated as capacitor storage rooms.

Exception: Capacitor arrays in noncombustible containers shall not be required to be spaced 3 feet (914 mm) from the container walls.

1206.3.2.6.1 Separation. Capacitor energy systems located outdoors shall be not less than 5 feet (1,524 mm) from the following:

1. Lot lines.
2. Public ways.
3. Buildings.
4. Stored combustible materials.
5. Hazardous materials.
6. High-piled stock.
7. Other exposure hazards.

Exception: The *fire code official* is authorized to approve lesser separation distances if large-scale fire and fault condition testing conducted or witness and reported by an approved testing laboratory is provided showing that a fire involving the system will not adversely impact occupant egress from adjacent buildings, or adversely impact adjacent stored materials or structures.

1206.3.2.6.2 Means of egress. Capacitor energy storage systems located outdoors shall be separated from any means of egress as required by the *fire code official* to ensure safe egress under fire conditions, but not less than 10 feet (3,048 mm).

Exception: The *fire code official* is authorized to approve lesser separation distances if large-scale fire and fault condition testing conducted or witness and reported by an approved testing laboratory is provided showing that a fire involving the system will not adversely impact occupant egress.

1206.3.2.6.3 Security of outdoor areas. Outdoor areas in which *capacitor energy storage systems* are located shall be secured against unauthorized entry and safeguarded in an approved manner.

1206.3.2.6.4 Walk-in units. Where a capacitor energy storage system includes an outer enclosure, the unit shall only be entered for inspection, maintenance and repair of batteries and electronics, and shall not be occupied for other purposes.

1206.3.3 Maximum allowable quantities. Fire areas within buildings containing *capacitor energy storage systems* that exceed 6000 kWh of energy capacity shall comply with all applicable Group H occupancy requirements in this code and the *Building Code*.

1206.3.4 Capacitors and equipment. The design and installation of *capacitor energy storage systems* and related equipment shall comply with Sections 1206.3.4.1 through 1206.3.4.5.

1206.3.4.1 Listing. Capacitors and *capacitor energy storage systems* shall comply with the following:

1. Capacitors shall be listed in accordance with UL 1973-2013.
2. Prepackaged and preengineered stationary capacitor energy storage systems shall be listed in accordance with UL 9540-2014.

1206.3.4.2 Prepackaged and preengineered systems. In addition to other applicable requirements of this code, prepackaged and preengineered *capacitor energy storage systems* shall be installed in accordance with their listing and the manufacturer's instructions.

1206.3.4.3 Energy management system. An approved energy management system shall be provided for monitoring and balancing capacitor voltages, currents and temperatures within the manufacturer's specifications. The system shall transmit an alarm signal to an approved location if potentially hazardous temperatures or other conditions such as short circuits, over voltage or under voltage are detected.

1206.3.4.4 Capacitor chargers. Capacitor chargers shall be compatible with the capacitor manufacturer's electrical ratings and charging specifications. Capacitor chargers shall be listed and labeled in accordance with UL 1564-2015 or provided as part of a listed preengineered or prepackaged *capacitor energy storage system*.

1206.3.4.5 Toxic and highly toxic gas. *Capacitor energy storage systems* that have the potential to release toxic and highly toxic materials during charging, discharging and normal use conditions shall comply with Chapter 60.

1206.3.5 Fire-extinguishing and detection systems. Fire-extinguishing and smoke detection systems shall be provided in *capacitor energy storage system* rooms in accordance with Sections 1206.3.5.1 through 1206.3.5.2.

1206.3.5.1 Fire-extinguishing systems. Rooms containing *capacitor energy storage systems* shall be equipped with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1. Commodity classifications for specific capacitor technologies shall be in accordance with Chapter 5 of NFPA 13-2016. If the capacitor types are not addressed in Chapter 5 of NFPA 13-2016, the *fire code official* is authorized to approve the *automatic sprinkler system* based on full-scale fire and fault condition testing conducted by an *approved laboratory*.

1206.3.5.1.1 Alternative fire-extinguishing systems. *Capacitor energy storage systems* that utilize water-reactive materials shall be protected by an *approved alternative automatic fire-extinguishing system* in accordance with Section 904. The system shall be listed for protecting the type, arrangement and quantities for capacitors in the room. The *fire code official* shall be permitted to approve the system based on full-scale fire and fault condition testing conducted by an *approved laboratory*.

1206.3.5.2 Smoke detection system. An approved *automatic smoke detection system* shall be installed in rooms containing *capacitor energy storage systems* in accordance with Section 907.2.

1206.3.5.3 Ventilation. Where capacitors release flammable gases during normal operating conditions, ventilation of rooms containing capacitor energy storage systems shall be provided in accordance with the *Mechanical Code* and one of the following:

1. The ventilation system shall be designed to limit the maximum concentration of flammable gas to 25 percent of the lower flammability limit.

2. Continuous ventilation shall be provided at a rate of not less than 1 cubic foot per minute (cfm) per square foot [0.00508 m³/(s • m²³/min).

The exhaust system shall be designed to provide air movement across all parts of the floor for gases having a vapor density greater than air and across all parts of the ceiling for gases having a vapor density less than air.

1206.3.5.3.1 Supervision. Require mechanical ventilation systems for rooms containing capacitor energy storage system shall be supervised by an approved central station, proprietary or remote station service, or shall initiate an audible and visible signal at an approved, constantly attended on-site location.

1206.3.5.4 Spill control and neutralization. Where capacitors contain liquid electrolyte, approved methods and materials shall be provided for the control and neutralization of spills of electrolyte or other hazardous materials in areas containing capacitors as follows:

1. For capacitors with free-flowing electrolyte, the method and materials shall be capable of neutralizing a spill of the total capacity from the largest cell or block to a pH between 5.0 and 9.0.
2. For capacitors with immobilized electrolyte, the method and material shall be capable of neutralizing a spill of 3.0 percent of the capacity of the largest cell or block in the room to a pH between 5.0 and 9.0.

1206.3.6 Testing, maintenance and repair. Capacitors and associated equipment and systems shall be tested and maintained in accordance with the manufacturer's instructions. Any capacitors or system components used to replace existing units shall be compatible with the capacitor charger, energy management system, other capacitors, and other safety systems. Introducing different capacitor technologies into the capacitor energy storage system shall be treated as a new installation and require approval by the fire code official before the replacements are introduced into service.

CHAPTER 21

DRY CLEANING

2104.2.1 Ventilation. Ventilation shall be provided in accordance with Section ~~502~~ 505 of the ~~International Mechanical Code~~ and DOL 29 CFR Part 1910.1000, where applicable.

CHAPTER 23

MOTOR FUEL-DISPENSING FACILITIES AND REPAIR GARAGES

2303.2 Emergency disconnect switches. An *approved*, clearly identified and readily accessible emergency disconnect switch shall be provided at an *approved* location to stop the transfer of fuel to the fuel dispensers in the event of a fuel spill or other emergency. The emergency disconnect switch for exterior fuel dispensers shall be located within 100 feet (30,480 mm) of, but not less than 20 feet (6,096 mm) from, the fuel dispensers. For interior fuel-dispensing operations, the emergency disconnect switch shall be installed at an *approved* location. Such devices shall be distinctly *labeled* as: EMERGENCY FUEL SHUTOFF. The sign lettering shall be not less than 2 inches (50 mm) in height on a background of contrasting color so that the lettering is clearly visible. Signs shall be provided in *approved* locations.

2306.2.3 Above-ground tanks located outside, ~~above-grade~~. Above-ground tanks shall not be used for the storage of Class I, II or III liquid motor fuels, except as provided by this section and Houston Fire Department LSB Standard No. 13, "Outside Protected Aboveground Tanks for Generators and Fire Pumps."

{EDITORIAL NOTE: THE REMAINDER OF THIS SECTION SHALL REMAIN AS SET FORTH IN THE 2015 IFC.}

CHAPTER 24

FLAMMABLE FINISHES

2404.2 Location of spray-finishing operations. Spray-finishing operations conducted in buildings used for Group A, E, I or R occupancies shall be located in a spray room protected with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 and separated vertically and horizontally from other areas in accordance with the *International Building Code*. In other occupancies, spray-finishing operations shall be conducted in a spray room, spray booth or spraying space *approved* for such use. Outside spraying or spray-finishing operations in basements or sub-basements are prohibited except when *approved* by the *fire code official*.

Exceptions:

1. Automobile undercoating spray operations and spray-on automotive lining operations conducted in areas with *approved* natural or mechanical ventilation shall be exempt from the provisions of Section 2404 when *approved* and where utilizing Class IIIA or IIIB *combustible liquids*.
2. In buildings other than Group A, E, I or R occupancies, *approved* limited spraying space in accordance with Section 2404.9.
3. Resin application areas used for manufacturing of reinforced plastics complying with Section 2409 shall not be required to be located in a spray room, spray booth or spraying space.

2404.7 Ventilation. Mechanical ventilation of flammable vapor areas shall be provided in accordance with Section ~~502.7~~ 505 of the ~~*International*~~ *Mechanical Code*.

CHAPTER 27

SEMICONDUCTOR FABRICATION FACILITIES

SECTION 2702 DEFINITIONS

GAS DETECTION SYSTEM.

HPM.

CHAPTER 28

LUMBER YARDS AND AGRO-INDUSTRIAL, SOLID BIOMASS AND WOODWORKING FACILITIES

SECTION 2810 OUTDOOR STORAGE OF PALLETS AT PALLET MANUFACTURING AND RECYCLING FACILITIES

2810.1 General. The outside storage of wood pallets and wood composite pallets on the same site as a pallet manufacturing or recycling facility shall comply with Sections 2810.2 through 2810.11.

2810.2 Site plan. Each site shall maintain a current site plan that includes a general description of the property, the boundaries of the lot, the size and location of buildings, and all of the following:

1. Utilities.
2. Type of construction and presence of sprinkler protection for other buildings on the site.
3. Water supply sources for fire-fighting purposes.
4. Location of hazardous material storage areas.
5. Location of pallet storage.
6. Equipment protected with a dust collection system.
7. Fire apparatus access roads.
8. Designated smoking areas.
9. Location of fire alarm control panels.

2810.3 Fire prevention plan. The owner or owner's authorized representative shall prepare an approved fire prevention plan that includes all of the following:

1. Frequency of walk-through inspections to verify compliance with the plan.
2. Hot work permit program in accordance with Chapter 35.
3. Preventative maintenance program for equipment associated with pallet activities.
4. Inspection, testing and maintenance of fire protection systems in accordance with Chapter 9.

2810.4 Fire safety and emergency evacuation plan. The owner or owner's authorized representative shall prepare and train employees in an approved fire safety and emergency evacuation plan in accordance with Chapter 4.

2810.5 Security management plan. The owner or owner's authorized representative shall prepare a security management plan based on a security risk assessment and shall make the plan and assessment available to the fire code official upon request.

2810.6 Clearance to property line. Stacks of pallets shall not be stored within 0.75 times the stack height or 8 feet (2,438 mm) of the property line, whichever is greater, or shall comply with Section 2810.11.

2810.7 Clearance to important buildings. Stacks of pallets shall not be stored within 0.75 times the stack height of any important building on site or shall comply with Section 2810.11.

2810.8 Height. Pallet stacks shall not exceed 20 feet (6,096 mm) in height.

2810.9 Fire flow. Fire-flow requirements for the site shall be determined by the *fire code official*.

2810.10 Portable fire extinguishers. Portable fire extinguishers shall be provided within 75 feet (22,860 mm) of any pallet stack.

2810.11 Alternative approach. Where *approved* by the *fire code official*, pallet stacks located closer to a property line or structure than as required by Sections 2810.6 and 2810.7 shall be provided with additional fire protection including, but not limited to, the following:

1. The storage yard areas and materials-handling equipment selection, design, and arrangement are based on an *approved* risk assessment.
2. Automatic fire detection that transmits an alarm to a supervising station in accordance with NFPA 72-2016.
3. *Fire apparatus access roads* around all storage areas.

CHAPTER 31

TENTS AND OTHER MEMBRANE STRUCTURES

3103.2 Approval required. Tents, canopies, and membrane structures having an area in excess of ~~400~~ 1,200 square feet (~~37~~ 112 m²), or an aggregate area in excess of 1,200 square feet (112 m²), shall not be erected, operated or maintained for any purpose without first obtaining a permit and approval from the *fire code official*. See Houston Fire Department LSB Standard No. 22, "Tents and Other Membrane Structures."

Exceptions:

1. Tents used exclusively for recreational camping purposes.
- ~~2. Tents open on all sides that comply with all of the following:~~
 - ~~2.1 Individual tents having a maximum size of 700 square feet (65 m²).~~
 - ~~2.2 The aggregate area of multiple tents placed side by side without a fire break clearance of 12 feet (358 mm), not exceeding 700 square feet (65 m²) total.~~
 - ~~2.3 A minimum clearance of 12 feet (3,658 mm) to all structures and other tents.~~

3103.5 Use period. Temporary tents, and air-supported, air-inflated or tensioned membrane structures shall not be erected for a period of more than ~~179~~ 90 days within a 12-month period on a single premises.

3104.8 Fireworks. Fireworks shall not be used within 100 feet (30,480 mm) of tents, canopies or membrane structures except as approved by the fire code official.

3105.2 Approval. Temporary stage canopies in excess of ~~400~~ 1,200 square feet (~~37~~ 112 m²) shall not be erected, operated or maintained for any purpose without first obtaining approval and a permit from the *fire code official* and the building official.

CHAPTER 32

HIGH-PILED COMBUSTIBLE STORAGE

3206.6.1.4 Marking of access doors. Firefighter access doors shall be labeled with HFD on the exterior in the top left-hand corner. The letters shall be not less than 4 inches (100 mm) in height on a contrasting background. Lettering shall be legible, durable and reflective in nature.

CHAPTER 33

FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION

3304.2.1 Combustible waste material accumulation. Combustible debris, rubbish and waste material shall not be accumulated within buildings or allowed to accumulate around or overflow from dumpsters.

3304.2.2 Combustible waste material removal. Combustible debris, rubbish and waste material shall be removed from buildings at the end of each shift of work. Combustible waste storage dumpsters shall be used and maintained in accordance with Section 304.

3304.3 Burning of combustible debris, rubbish and waste. Combustible debris, rubbish and waste material shall not be disposed of by burning on the site ~~unless approved.~~

SECTION 3310

ACCESS FOR FIRE FIGHTING AND E.M.S. OPERATIONS

3310.1 Required access. Approved vehicle access for fire fighting and emergency medical service shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet (30,480 mm) of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading as required by Section D102.1 of this code under all weather conditions up to the foundation of every structure on the site prior to the start of any vertical construction. Vehicle access shall be maintained until permanent fire apparatus access roads are available.

3317.2.1 Permits. Permits are required for the use of asphalt kettles and for torching operations. See Section 105.6.

3317.4 Torches and other flame-producing devices. Use of torches or other flame-producing devices for application of roofing membranes is prohibited.

Exception: When approved by the fire code official, roofing operations shall be conducted in accordance with Houston Fire Department LSB Standard No. 11, "Roofing Operations."

CHAPTER 35

WELDING AND OTHER HOT WORK

3503.7 Roofing operations utilizing flame-producing devices. Use of torches or other flame-producing devices for application of roofing membranes is prohibited. See Section 3317.4.

Exception: When *approved by the fire code official*, roofing operations shall be conducted in accordance with Houston Fire Department LSB Standard No. 11, "Roofing Operations."

CHAPTER 37

COMBUSTIBLE FIBERS

3703.5 Dust collection. Where located within a building, equipment or machinery that generates or emits *combustible fibers* shall be provided with an *approved* dust-collecting and exhaust system. Such systems shall comply with Chapter 22 of this code and Section ~~544~~ 506.4 of the *International Mechanical Code*.

CHAPTER 50

HAZARDOUS MATERIALS—GENERAL PROVISIONS

5001.7 Enterprise permit. Businesses and facilities storing or utilizing hazardous materials exceeding the maximum allowable quantity limits per control area identified in Tables 307.1(1) and 307.1(2) of the Building Code shall comply with Chapter 28 of the City Code for a hazardous enterprise.

SECTION 5003 GENERAL REQUIREMENTS

5003.1 Scope. The storage, use and handling of all hazardous materials shall be in accordance with this section and the applicable provisions of the Hazardous Enterprise Ordinance of Chapter 28, Article VII, of the City Code for a hazardous enterprise.

5003.9.2 Security. ~~Storage~~ When required by the *fire code official*, storage, dispensing, use and handling areas shall be secured against unauthorized entry and safe-guarded in a manner *approved* by the *fire code official*. When security fencing is installed, the fence shall comply with all of the following:

1. Substantially built of iron, steel or concrete that is fabricated and installed in accordance with the Building Code.
2. A minimum height of not less than 6 feet (1,830 mm) above the surrounding floor or ground surface.
3. Topped by three rows of barbed wire, separated 4 inches (100 mm) apart and applied in compliance with Section 28-9 of the City Code.
4. Equipped with necessary openings designed and fabricated to provide security equivalent to the fence that includes locks that always remain locked except when in use by authorized personnel, and
5. Located 5 feet (1,525 mm) or more from any tank, valves or piping associated with hazardous materials.

Note: For LP-gas transfer and storage facilities see Section 3807.4.

5004.13 Weather protection. Where overhead noncombustible construction is provided for sheltering outdoor hazardous material storage areas, such storage shall not be considered indoor storage where the area is constructed in accordance with the requirements for weather protection as required by the ~~International Building Code~~.

Exception: For the purpose of applying the Hazardous Enterprise Ordinance of Chapter 28, Article VII, of the City Code, and the fire separation distance provisions of the Building Code, ~~S~~storage of hazardous ~~explosive~~ materials exceeding the maximum allowable quantity limits per control area identified in Section 307 and Tables 307.1(1) and 307.1(2) of the Building Code shall be considered as indoor storage.

CHAPTER 55

CRYOGENIC FLUIDS

5504.3.1.1.2 Surfaces beneath containers. Containers shall be placed on surfaces that are compatible with the fluid in the container. For liquid oxygen stationary containers, surfacing of noncombustible material shall be provided at ground level under liquid delivery connections for the storage container and the delivery vehicle. Asphaltic and bitumastic paving or organic material (wood, wood byproducts or similar materials) shall not be used as paving materials. The area below the liquid delivery connections shall be at least 3 feet (910 mm) in diameter from points at ground level upon which leakage of liquid oxygen might occur during unloading and normal operation of the system. The area under the mobile supply equipment shall be at least the full width of the vehicle and at least 8 feet (2.4 m) in the direction of the vehicle axis. The layout of the slope, if any, of such areas shall consider possible flow of spilled liquid oxygen to adjacent combustible materials. The area around the stationary containers, fill connections and delivery pad shall be kept clear of all trash and organic matter.

CHAPTER 56

EXPLOSIVES AND FIREWORKS

5601.1.3 Fireworks. The possession, manufacture, storage, sale, handling or ~~and~~ use of fireworks is prohibited.

Exceptions:

1. Storage and handling of fireworks as allowed in Section 5604.
2. ~~Manufacture, assembly and testing of fireworks as allowed in Section 5605.~~
3. The use of fireworks for firework displays as allowed in Section 5608.
4. ~~The possession, storage, sale, handling and use of specific types of Division 1.4G fireworks where allowed by applicable laws, ordinances and regulations, provided such fireworks and facilities comply with NFPA 1124, CPSC 16 CFR Parts 1500 and 1507, and DOTn 49 CFR Parts 100-185, for consumer fireworks.~~
5. Fireworks being transported in international, intrastate, or interstate commerce through the jurisdiction between points of origin and destination outside of the jurisdiction in accordance with all applicable municipal or state laws, ordinances, and regulations, provided the fireworks comply with federal regulations CPSC 16 CFR Parts 1500-1507, and DOTn 49 CFR Parts 100-185, for consumer fireworks. The provisions of this exception shall extend only to bona fide commercial transportation and distribution of fireworks in commercial quantities among manufacturers, wholesalers and dealers. Transportation shall be by way of established hazardous materials transportation routes through and around the jurisdiction.

5601.1.3.1 Seizure of fireworks. The presence of any fireworks within this jurisdiction in violation of this chapter is hereby declared to be a common and public nuisance. The *fire code official* is directed and required to seize and cause to be safely destroyed any fireworks found in violation of this code. Any member of the Life Safety and Fire Prevention Bureau of the Houston Fire Department or any police officer of the jurisdiction is empowered to stop the transportation of and detain any fireworks found being transported illegally.

5605.1.1 Manufacturing of fireworks prohibited. The manufacturing of fireworks is prohibited, and no provision of this section shall be construed to authorize the manufacturing of fireworks within the jurisdiction.

CHAPTER 57

FLAMMABLE AND COMBUSTIBLE LIQUIDS

5703.5.5 Security. When required by the *fire code official*, storage areas, tanks, piping, valves, regulating equipment and accessories shall be protected against tampering or trespassers by fencing or other control measures in accordance with Section 5003.9.2.

5703.6.9.2 Swing joints. Approved swing joints shall be installed on all underground liquid, vapor and vent piping where the piping leaves the dispensing island or location and just before where the pipe connects to any underground tank fittings. Swing joints shall also be installed on piping that is rigidly supported or connected between fixed points and that is subject to thermal expansion or differential movements. No pipe nipple used in connection with a double swing joint or where piping joins tanks shall exceed 12 inches (300 mm) in length.

Exception: Listed flexible connectors are allowed in lieu of swing joints when approved by the *fire code official*.

5704.1 General. The storage of flammable and *combustible liquids* in containers and tanks shall be in accordance with this section, API 653, and the applicable section of Chapter 50.

5704.2.9.6.1 Locations where above-ground tanks are prohibited. Storage of Class I and II liquids in above-ground tanks outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited (see Section 3 of the Sample Legislation for Adoption of the *International Fire Code* on page xxi) in accordance with Section 203, unless approved by the *fire code official*. See Houston Fire Department LSB Standard No. 13, "Outside Protected Aboveground Tanks for Generators and Fire Pumps."

5704.2.12.3 Existing tanks and testing. The *fire code official* is authorized to require leak-testing for existing underground storage tanks and piping when there is reasonable cause to believe that a leak exists. The method of testing shall be approved by the *fire code official*.

5704.3.4.4 Liquids Special provisions for liquids used for maintenance and operation of equipment. In all occupancies, quantities of flammable and *combustible liquids* in excess of 10 gallons (38 L) used for maintenance purposes and the operation of equipment shall be stored in liquid storage cabinets in accordance with Section 5704.3.2. Quantities not exceeding 10 gallons (38 L) are allowed to be stored outside of a cabinet where in approved containers safety cans located in private garages or other approved locations. In other than Group H occupancies, quantities of flammable and *combustible liquids* used for demonstration, treatment and laboratory work exceeding 10 gallons (38 L) shall be

stored in storage cabinets in accordance with Section 5704.3.2. Quantities not exceeding 10 gallons (38 L) shall be stored in *approved* safety cans located in *approved* locations.

5704.4.8 Empty containers and tank storage. ~~The storage of e~~Empty tanks and containers previously used for the storage of flammable or *combustible liquids*, unless free from explosive vapors, shall be stored as required for filled containers and tanks. Tanks and containers when emptied shall have the covers or plugs immediately replaced in openings. Empty tanks and containers that have been rendered free of explosive vapors shall be visibly marked as EMPTY, or the area where containers are stored shall be marked with an *approved* sign indicating EMPTY CONTAINERS. Containers marked as EMPTY shall be separated from filled containers.

5706.2.4.4 Locations where above-ground tanks are prohibited. The storage of Class I and II liquids in above-ground tanks is prohibited within the limits established by law as the limits of districts in which such storage is prohibited (~~see Section 3 of the Sample Legislation for Adoption of the *International Fire Code* on page xxi~~) in accordance with Section 203, unless *approved* by the *fire code official*. See Houston Fire Department LSB Standard No. 13, "Outside Protected Aboveground Tanks for Generators and Fire Pumps."

5706.5.4.5 Commercial, industrial, governmental or manufacturing. Dispensing of Class I, II, and III motor vehicle fuel from tank vehicles into the fuel tanks of motor vehicles located at commercial, industrial, governmental or manufacturing establishments is allowed where permitted, provided such dispensing operations are conducted in accordance with the following:

{EDITORIAL NOTE: REMAINDER OF SECTION REMAINS AS SET FORTH IN 2015 IFC.}

CHAPTER 58

FLAMMABLE GASES AND FLAMMABLE CRYOGENIC FLUIDS

5808.7 Standby power. Mechanical ventilation and gas detection systems shall be connected to a standby power system in accordance with Sections 604 and 1203, most restrictive provisions prevail.

CHAPTER 60

HIGHLY TOXIC AND TOXIC MATERIALS

6004.2.2.7 Treatment systems. The exhaust ventilation from gas cabinets, exhausted enclosures and gas rooms, and local exhaust systems required in Sections 6004.2.2.4 and 6004.2.2.5 shall be directed to a treatment system. The treatment system shall be utilized to handle the accidental release of gas and to process exhaust ventilation. The treatment system shall be designed in accordance with Sections 6004.2.2.7.1 through 6004.2.2.7.5 and Section ~~549~~ 505 and 506 of the *International Mechanical Code*.

{EDITORIAL NOTE: REMAINDER OF SECTION 6004.2.2.7 REMAINS AS SET FORTH IN 2015 IFC.}

6004.2.2.10 Gas detection system. A gas detection system complying with Section 916 shall be provided to detect the presence of gas at or below the PEL or ceiling limit of the gas for which detection is provided. The system shall be capable of monitoring the discharge from the treatment system at or below one-half the IDLH limit and shall initiate a response in accordance with sections 6004.2.2.10.1 through 6004.2.2.10.4 if the gas detection alarm is activated.

Exception: A gas detection system is not required for toxic gases when the physiological warning threshold level for the gas is at a level below the accepted PEL for the gas.

CHAPTER 61

LIQUEFIED PETROLEUM GASES

6101.2 Permits. Permits shall be required as set forth in Sections 105.6 and ~~105.7~~ to store, use, handle or dispense LP-gas, or to install or maintain any LP-gas container in excess of 125 gallons (473 L) aggregate water capacity. A permit is required to use any amount of LP-gas for demonstrations, public exhibitions, portable heating (excluding R occupancies) or temporary commercial cooking or on mobile food units. As used in this chapter, the term mobile food unit has the meaning set forth in Chapter 20 of the City Code.

Distributors shall not fill an LP-gas container for which a permit is required unless a permit for installation has been issued for that location by the *fire code official*.

6101.3 Construction documents. Where a single LP-gas container is more than ~~2,000~~ 500 gallons (~~7570~~ 1893 L) in water capacity or the aggregate water capacity of LP-gas containers is more than ~~4,000~~ 2,000 gallons (~~15140~~ 7570 L), the installer shall submit *construction documents* for such installation.

6103.2.1 Portable containers. Portable LP-gas containers, as defined in NFPA 58, shall not be used in buildings except as specified in NFPA 58, ~~and Sections 6103.2.1.1 through 6103.2.1.78,~~ and Houston Fire Department LSB Standards No. 10, "LP-Gas and Open Flame Use" and No. 11, "Roofing Operations."

6103.2.1.2 Construction and temporary heating. Portable LP-gas containers are allowed to be used in buildings or areas of buildings undergoing construction ~~or for temporary heating as set forth in Sections 6.19.4, 6.19.5 and 6.19.8 of NFPA 58~~ when attached to approved torches. The aggregate capacity of LP-gas containers inside a building shall not exceed 250 pounds (113 kg) water capacity. Containers connected for use shall be promptly removed from the building when the torch is not in use. Containers not connected for use shall be stored outside the building in accordance with Table 6104.3. Portable LP-gas containers shall not be attached to temporary or portable heating appliances as set forth in Sections 6.20.4, 6.20.5 and 6.20.8 of NFPA 58.

6103.2.1.3 Group F occupancies. In Group F occupancies, portable LP-gas containers are allowed to be used to supply quantities necessary for processing, research or experimentation. Where manifolded, the aggregate water capacity of such containers shall not exceed 735 pounds (334 kg) per manifold. Where multiple manifolds of such containers are present in the same room, each manifold shall be separated from other manifolds by a distance of not less than 20 feet (6,096 mm). The aggregate capacity of LP-gas containers inside a building shall not exceed 250 pounds (113 kg) water capacity. Containers connected for use shall not be stored inside a building or structure unless stored within a room constructed in accordance with the requirements of Section 6109.10. Containers not connected for use shall be stored outside the building in accordance with Table 6104.3.

6103.2.1.7 Use for food preparation inside buildings. ~~Where approved, listed LP-gas commercial food service appliances are allowed to be used for food preparation within restaurants and in attended commercial food-catering operations in accordance with the *International Fuel Gas Code*, the *International Mechanical Code* and NFPA-58. LP-gas containers shall not be used for residential or commercial food preparation inside of a building or structure.~~

Exception: When approved, listed LP-gas commercial food service appliances are allowed to be used for food preparation within restaurants and in attended commercial food catering operations, provided that an individual appliance shall not have more than two 10-oz (0.3 L), non-refillable LP-gas containers connected directly to the appliance any time. Containers shall comply with nationally recognized standards, have a maximum water capacity of 1.08 pounds (0.5 kg) per container and shall not be manifolded. The appliance's fuel containers shall be an integral part of the listed commercial food service device and shall be connected without the use of a rubber hose. The aggregate amount of LP-gas used or stored shall not exceed 60 pounds (27 kg) LP-gas capacity. In educational occupancies, portable LP-gas containers shall not be used or stored except as permitted by Sections 6103.1.2.5 and 6103.2.1.6.

6103.2.1.8 Use for food preparation outside buildings. When approved, LP-gas containers may be used for commercial cooking outside buildings or in the operation of a mobile food unit in accordance with Houston Fire Department LSB Standard No. 10, "LP-Gas and Open Flame Use." For permits, see Section 105.6.

6103.2.1.9 Group B and M occupancies. In Group B and M occupancies, portable LP-gas containers are allowed to be used to supply quantities necessary for minor repairs or minor fabrication work, when connected to an approved appliance. The containers shall not exceed a 12-pound water capacity. When more than one container is present in the same room, each container shall be separated from the others by a distance of not less than 20 feet. Containers not connected for use shall be stored outside the building in accordance with Table 6104.3.

6103.2.2 Industrial vehicles and floor maintenance machines. LP-gas containers on industrial vehicles and floor maintenance machines shall comply with Sections 11.13 and 11.14 of NFPA 58. Industrial lift trucks stored inside of buildings shall be kept in an approved area. LP-gas containers not attached for use shall be stored outside of the building in accordance with Table 6104.3.

6104.2 Maximum capacity within established limits. Within the limits established by law restricting the storage of liquefied petroleum gas for the protection of heavily populated or congested areas, the aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons (7570 L) (see Section 3 of the Sample Legislation for Adoption of the *International Fire Code* on page xxi).

Exception: In particular installations, this capacity limit shall be determined by the fire code official, after consideration of special features such as topographical conditions, nature of occupancy, and proximity to buildings, capacity of proposed LP-gas containers, degree of fire protection to be provided and capabilities of the local fire department. See also Houston Fire Department LSB Standard No. 10, "LP-Gas and Open Flame Use."

SECTION 6112
MOBILE FOOD UNITS

6112.1 General. No permit for the use of LP-gas in connection with a mobile food unit shall be issued unless the operator provides to the fire department a detailed description of the means and methods by which the operator will secure the LP-gas container against shifting (bracing) and will protect the LP-gas container against damage (blocking) by third parties, which means and methods are *approved* by the *fire code official*, and pays the administrative and permit fees required in Section 113. In addition to complying with the applicable requirements of this chapter, the operator of a mobile food unit in, on, or in conjunction with which LP-gas is used to cook or otherwise prepare food shall obtain from the fire department a permit for the use of LP-gas and LP-gas equipment for each mobile food unit and shall make the permit available for inspection and/or copying upon the request of any peace officer, *fire code official*, or health officer.

6112.2 Filling. Distributors shall not fill an LP-gas container for which a permit is required unless a permit for installation has been issued for that location by the *fire code official*.

6112.3 Spacing. The operator of a mobile food unit in, on, or in conjunction with which any amount of LP-gas is used to prepare food shall not operate such unit within 60 feet of another mobile food unit.

6112.4 Transport. The *fire code official* is authorized and directed to take action as may be reasonably necessary to protect the public health, safety and welfare where any operator of a mobile food unit engaged in the transportation of LP-gas within the city is suspected of violating any state or federal laws, rules and regulations, as amended from time to time, specifically Title 49, Part 173.6 of the Federal Code of Regulations.

CHAPTER 80

REFERENCED STANDARDS

ASCE/SEI

American Society of Civil Engineers
Structural Engineering Institute
1801 Alexander Bell Drive
Reston, VA 20191

Standard reference number	Title	Referenced in code section number
ASCE/SEI 24—14 ¹³	Flood Resistant Design and Construction	604.1.7, 1203.1.8

CSA

CSA Group
8501 East Pleasant Valley Road
Cleveland, OH 44131

Standard reference number	Title	Referenced in code section number
CSA FC1—12	Stationary Fuel Cell Power Systems	1205.3

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

Standard reference number	Title	Referenced in code section number
02—16 ¹⁴	Hydrogen Technologies Code	2309.3.1.1, 2309.3.1.2, 5301.1, 5307.3, 5801.1
13—16 ¹³	Standard for the Installation of Sprinkler Systems	903.3.1.1, 903.3.2, 903.3.8.2, 903.3.8.5, 904.12, 905.3.4, 907.6.4, 914.3.2, 1019.3, 1103.4.8, 1206.2.11.1, 1206.3.5.1, 3201.1, 302.4.2, Table 3206.2, 3206.4.1, 3206.9, 3207.2, 3207.2.1, 3208.2.2, 3208.2.2.1, 3208.4, 3210.1, 3401.1, 5104.1, 504.1.1, 5106.5.7, 5704.3.3.9, Table 5704.3.6.3(7), 5704.3.7.5.1, 5704.3.8.4,

70—2014

National Electrical Code

I103.1, J103.1,
J104.2

320.1, 603.1.3,
603.1.7, 603.5.2,

604.1.2, 605.3,
605.4, 605.9,
605.11, 606.16,

610.6, 610.7,
904.3.1, 907.6.1,
909.12.2,
909.16.3,

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2006.3.4,
2104.2.3, 2108.2,
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2301.5,

2305.4,
2308.8.1.2.4,
2309.2.3,
2309.6.1.2.4,
2311.3.1,
2403.2.1,

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2403.2.1.4,
2403.2.5,
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2603.2.1, 2606.4,
2703.7.1,
2703.7.2,
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2904.1,

3103.12.6.1,
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5703.1, Table
5703.1.1,
5703.1.3,
5704.2.8.12,
5704.2.8.17,
5706.2.8,

5803.1.5,
5803.1.5.1,

		5807.1.10, 5906.5.5, 5906.5.6, 6109.15.1
72— <u>16</u> ¹³	National Fire Alarm and Signaling Code	508.1.6, 604.2.4, Table 901.6.1, 903.4.1, 904.3.5, 907.2, 907.2.6, 907.2.9.3, 907.2.11, 907.2.13.2, 907.3, 907.3.3, 907.3.4, 907.5.2.1.2, 907.5.2.2, 907.5.2.2.5, 907.6, 907.6.1, 907.6.2, 907.6.6, 907.7, 907.7.1, 907.7.2, 907.8, 907.8.2, 907.8.5, 1103.3.2, <u>1203.2.4</u> , <u>2810.11</u> , <u>1103.1</u>
99— <u>18</u> ¹⁵	Health Care Facilities Code	611.1, 1105.5.2, 1105.10.1, 1105.10.2, <u>1203.4.1</u> , <u>1203.5.1</u> , 5306.4, 5603.5
110— <u>16</u> ¹³	Standard for Emergency and Standby Power Systems	604.1.2, 604.4, 604.5, 913.5.2, 913.5.3, <u>1203.1.3</u> , <u>1203.4</u> , <u>1203.5</u>
111—13	Standard on Stored Electrical Energy Emergency and Standby Power Systems	308.3.2, <u>320.1</u> , <u>1203.1.3</u> , <u>1203.4</u> , <u>1203.5</u>
<u>853—15</u>	<u>Installation of Stationary Fuel Cell Power Systems</u>	<u>1205.3</u> , <u>1205.4</u> , <u>1205.6.2</u> , <u>1205.11</u> , <u>1205.12</u>
<u>855—20</u>	<u>Standard for the Installation of Stationary Energy Storage Systems</u>	<u>320.1</u>
<u>1221-16</u>	<u>Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems</u>	<u>510.4.2</u> , <u>510.5</u>

UL	Underwriters Laboratories LLC 333 Pfingsten Road Northbrook, IL 60062	
Standard reference number	Title	Referenced in code section number
<u>UL 1564—15</u>	<u>Industrial Battery Chargers</u>	<u>1206.2.10.4,</u> <u>1206.3.4.4</u>
<u>UL 1741—15</u>	<u>Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources</u>	<u>1206.2.10.5</u>
<u>UL 1973—13</u>	<u>Standard for Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications</u>	<u>1206.2.10.1,</u> <u>1206.3.4.1</u>
<u>UL 9540—14</u>	<u>Outline of Investigation for Energy Storage Systems and Equipment</u>	<u>1206.2.10.1,</u> <u>1206.3.4.1</u>

APPENDIX A

BOARD OF APPEALS

~~The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.~~

A101.2 Membership Organization. ~~The membership of the board shall consist of five voting members having the qualifications established by this section. Members shall be nominated by the fire code official or the chief administrative officer of the jurisdiction, subject to confirmation by a majority vote of the governing body. Members shall serve without remuneration or compensation, and shall be removed from office prior to the end of their appointed terms only for cause. There is hereby created a Board of Appeals, consisting of 11 members. Five members at a meeting shall constitute a quorum. The positions on the board shall be filled as follows:~~

- ~~Position 1. By a well-respected citizen of the jurisdiction.~~
- ~~Position 2. By the fire code official or the official's duly authorized representative, who shall provide a board secretary.~~
- ~~Position 3. By the fire chief or the chief's duly authorized representative.~~
- ~~Position 4. By the director of Houston Public Works or the director's duly authorized representative.~~
- ~~Position 5. By a well-respected citizen of the jurisdiction, who shall serve as chairman.~~
- ~~Position 6. By a professional engineer registered as such under the laws of Texas, who shall be actively engaged in the practice as a fire protection engineer.~~
- ~~Position 7. By a person who is a member of the Building Owners and Managers Association of Houston.~~
- ~~Position 8. By a person who is engaged or employed in the chemical or petroleum industry.~~
- ~~Position 9. By a person who is a member of the Houston Apartment Association.~~
- ~~Position 10. By a person who is fire protection contractor.~~
- ~~Position 11. By a person who is an architect registered by the State of Texas.~~

~~The legal department shall have an attorney present for each board meeting, who shall advise the board on legal matters relative to topics under board jurisdiction.~~

~~The fire chief, the fire code official, and director of Houston Public Works may each designate in writing a person under his supervision to act in his place as his duly authorized representative. The representative designation shall be filed in the minutes of the board.~~

~~With the exception of the fire chief, the fire code official, and the director of Houston Public Works, members of the board shall be appointed by the mayor, subject to confirmation by the city council, and shall serve for a term of two years. The terms of the appointees for Positions 1, 6, 7, and 9 commence on January 1 of each odd-numbered year and end on December 31 of the following even-numbered year. The terms of the appointees for Positions 5, 8, 10, and 11 commence on January 1 of each even-numbered year and end on December 31 of the following odd-numbered year. Members shall hold over until a successor is appointed and qualified.~~

Whenever any position on the board becomes vacant by reason of death, resignation or removal, the vacancy shall be filled for the unexpired term of the member being replaced. Should a vacancy occur on the board, the mayor shall appoint, subject to confirmation by the city council, another qualified person to serve the unexpired term of the vacancy. Any member of the board may be removed at any time by the mayor without consent of the city council.

~~A101.2.1 Design professional.~~ One member shall be a practicing design professional registered in the practice of engineering or architecture in the state in which the board is established.

~~A101.2.2 Fire protection engineering professional.~~ One member shall be a qualified engineer, technologist, technician or safety professional trained in fire protection engineering, fire science or fire technology. Qualified representatives in this category shall include fire protection contractors and certified technicians engaged in *fire protection system* design.

~~A101.2.3 Industrial safety professional.~~ One member shall be a registered industrial or chemical engineer, certified hygienist, certified safety professional, certified hazardous materials manager or comparably qualified specialist experienced in chemical process safety or industrial safety.

~~A101.2.4 General contractor.~~ One member shall be a contractor regularly engaged in the construction, *alteration*, maintenance, repair or remodeling of buildings or building services and systems regulated by the code.

~~A101.2.5 General industry or business representative.~~ One member shall be a representative of business or industry not represented by a member from one of the other categories of board members described above.

A101.3 Terms of office Per diem. Members shall be appointed for terms of 4 years. No member shall be reappointed to serve more than two consecutive full terms. Each member of the board shall be compensated at the rate of \$50.00 per diem for each meeting the member attends at which a quorum is present; provided, however, no member shall be paid for more than three meetings in any one month. A jurisdiction employee who is a member of the board shall be paid only for those meetings that the employee attends at which a quorum is present and that are not held during, or that continue beyond, the employee's regular working hours.

~~A101.3.1 Initial appointments.~~ Of the members first appointed, two shall be appointed for a term of 1 year, two for a term of 2 years, one for a term of 3 years.

~~A101.3.2 Vacancies.~~ Vacancies shall be filled for an unexpired term in the manner in which original appointments are required to be made. Members appointed to fill a vacancy in an unexpired term shall be eligible for reappointment to two full terms.

~~A101.3.3 Removal from office.~~ Members shall be removed from office prior to the end of their terms only for cause. Continued absence of any member from regular meetings of the board shall, at the discretion of the applicable governing body, render any such member liable to immediate removal from office.

A101.4 Quorum Duties of the Board of Appeals. Three members of the board shall constitute a quorum. In varying the application of any provisions of this code or in modifying an order of the *fire code official*, affirmative votes of the majority present, but not less than three, shall be required. The duties of the board shall be to hear appeals from decisions of the *fire code official* as to the suitability of alternate materials and types of construction and to provide for reasonable interpretations of the provisions of this code. In cooperation with the *fire code official*, the board shall submit an annual report to the mayor and the city council containing a summary of the

actions of the board during the preceding year. The board may make recommendations to the mayor for amendments to this code.

A101.5 Secretary of board Procedures. ~~The *fire code official* shall act as secretary of the board and shall keep a detailed record of all its proceedings, which shall set forth the reasons for its decisions, the vote of each member, the absence of a member and any failure of a member to vote. The board shall adopt reasonable rules and regulations for conduct of its duties. Petitions for hearings before the board shall be in writing, filed with the *fire code official*, and heard by the board within 30 days after the date that the petition was filed. A majority of the members present, constituting a quorum, shall conduct business of board. All decisions and findings shall be rendered in writing with copies to the *fire code official*, petitioner and all other parties to the hearing. Subject to compliance with Rule 12 of the city council's rules of procedure (see Section 2-2 of the *City Code*), any interested person who is aggrieved by a decision of the board may appeal to city council, provided that written notice to the city council for the appeal is delivered to the city secretary within 10 days after the date the board renders the decision. All appeals to the city council are subject to Rule 12 of the city council's rules of procedure. Parties wishing to preserve their right of appeal must comply with Rule 12.~~

A101.6 Legal counsel Posting of agenda. ~~The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction's expense in all matters arising from service within the scope of their duties. The board shall prepare and post an agenda in compliance with the Texas Open Meeting Law.~~

A101.7 Meetings. ~~The board shall meet at regular intervals, to be determined by the chairman. In any event, the board shall meet within 10 days after notice of appeal has been received.~~

A101.8 Conflict of interest. ~~Members with a material or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.~~

A101.9 Decisions. ~~Every decision shall be promptly filed in writing in the office of the *fire code official* and shall be open to public inspection. A certified copy shall be sent by mail or otherwise to the appellant, and a copy shall be kept publicly posted in the office of the *fire code official* for 2 weeks after filing.~~

A101.10 Procedures. ~~The board shall be operated in accordance with the Administrative Procedures Act of the state in which it is established or shall establish rules and regulations for its own procedure not inconsistent with the provisions of this code and applicable state law.~~

APPENDIX D

FIRE APPARATUS ACCESS ROADS

The provisions contained in this ~~a~~Appendix D are ~~not mandatory unless specifically referenced in the adopting ordinance.~~

D101.1 Scope. Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the International Fire Code, as well as Houston Fire Department LSB Standards No. 03, "Fire Department Access" and No. 04, "Access Control Gates."

D102.1 Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an *approved* fire apparatus access road with an asphalt, concrete or other *approved* driving surface capable of supporting the imposed load of fire apparatus weighing at least ~~75,000~~ 90,000 pounds (~~34 050~~ 40 850 kg).

D103.5 Fire apparatus access road gates. For fire apparatus access road gate requirements, refer to Houston Fire Department LSB Standard No. 04, "Access Control Gates." ~~Gates securing the fire apparatus access roads shall comply with all of the following criteria:~~

- ~~1. — Where a single gate is provided, the gate width shall be not less than 20 feet (6,096 mm). Where a fire apparatus road consists of a divided roadway, the gate width shall be not less than 12 feet (3,658 mm).~~
- ~~2. — Gates shall be of the swinging or sliding type.~~
- ~~3. — Construction of gates shall be of materials that allow manual operation by one person.~~
- ~~4. — Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.~~
- ~~5. — Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.~~
- ~~6. — Methods of locking shall be submitted for approval by the fire code official.~~
- ~~7. — Electric gate operators, where provided, shall be listed in accordance with UL 325.~~
- ~~8. — Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.~~

D103.6 Signs. For fire apparatus access road/fire lane sign requirements, refer to Houston Fire Department LSB Standard No. 03, "Fire Department Access." ~~Where required by the fire code official, fire apparatus access roads shall be marked with permanent NO PARKING — FIRE LANE signs complying with Figure D103.6. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted on one or both sides of the fire apparatus road as required by Section D103.6.1 or D103.6.2.~~

APPENDIX H

{EDITORIAL NOTE: DELETE THE ENTIRETY OF APPENDIX H AND REPLACE WITH THE FOLLOWING TEXT.}

STAIRWAY IDENTIFICATION

SECTION H101 **GENERAL**

H101.1 Signs in stairways. Standardized signs shall be provided in buildings at each floor landing in an interior exit stairway and ramp connecting more than three stories. The signs shall be installed in stairways to identify each stair, floor level number, roof access information, the upper and lower termination of the stairway, and reentry information. Signs within stairways shall be located above the floor landing in a position that is readily visible when the door is in the open or closed position and in accordance with the *Texas Accessibility Standards*. See also Chapter 10.

SECTION H102 **OCCUPANCY SIDE OF STAIRWAY DOORS**

H102.1 Signs on occupancy (tenant) side of stairway doors. Standardized identification signs shall be located at each level on the occupancy (tenant) side of all enclosed stairways, regardless of the height of the building.

H102.2 Details for signs installed on the occupancy (tenant) side of doors.

H102.2.1 Stairway identification. Stairway identification signs shall have an alphabetic letter or name identification. The name identification shall precede the word STAIR and any alphabetic letter shall follow the word STAIR, such as STAIR A or WEST STAIR, to be placed at the top of the sign in 1-inch (25 mm) high block lettering. Numerical and written numbers shall not be used for stairwell identification. See Section H105.

H102.2.2 Reentry. Where stairway doors are locked from the stairway side to prohibit reentry to a floor, NO REENTRY shall be placed at the bottom of the sign in 1-inch (25 mm) high block lettering.

SECTION H103 **SIGNS INSTALLED IN STAIRWAYS**

H103.1 Stairway identification. Stairway identification signs shall have an alphabetic letter or name identification. The name identification shall precede the word STAIR and any alphabetic letter shall follow the word STAIR, such as STAIR A or WEST STAIR, to be placed at the top of the sign in 1-inch (25 mm) high block lettering. Numerical and written numbers shall not be used for stairwell identification. See Section H105.

H103.2 Roof access. The roof access condition, such as ROOF ACCESS LOCKED or NO ROOF ACCESS, shall be placed under the stairway identification in 1-inch (25 mm) high block lettering.

H103.3 Floor level number. The floor level number shall be placed in the middle of the sign in 2-inch (50 mm) high block lettering. Mezzanine levels shall have the letter M preceding the floor number. Basement levels shall have the letter B preceding the floor number. No other designation for mezzanine and basement levels shall be used.

H103.4 Lower and upper terminus. The lower and upper terminus designation of the stairway shall be placed under the floor number in 1-inch (25 mm) high block lettering.

H103.5 Reentry. Where stairway doors are locked from the stairway side to prohibit reentry to a floor, NO REENTRY shall be placed under the lower and upper terminus designation in 1-inch (25 mm) high block lettering. Additionally, the nearest floor above and below where a person can reenter from the stairway shall be placed at the bottom of the sign in 1-inch (25 mm) high block lettering.

SECTION H104 **COMPLIANCE WITH TEXAS ACCESSIBILITY STANDARDS (TAS)**

H104.1 Raised and braille characters/character portions. Stairway identification, floor level number and reentry information on signs shall comply with TAS requirements for raised and Braille characters. All other letters and numbers on the sign shall comply with TAS requirements for character proportions.

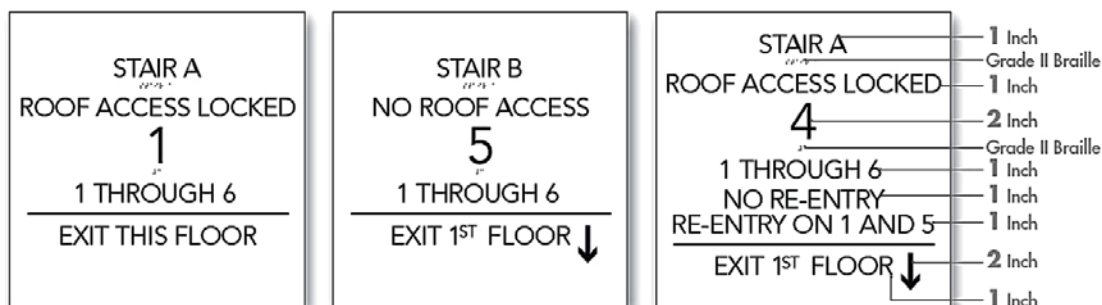
H104.2 Finish and contrast. All characters and backgrounds of signs shall comply with TAS requirements for finish and contrast.

H104.3 Mounting location and height. All signs shall comply with TAS requirements for mounting location and height.

SECTION H105 **SIGN EXAMPLES**

{On following pages}

STAIRWELL INTERIOR SIGN TYPE



FLOOR OF EXIT DISCHARGE

Front Elevation

OPTION A

SCALE: 3"=1'

UNRESTRICTED RE-ENTRY

Front Elevation

OPTION B

SCALE: 3"=1'

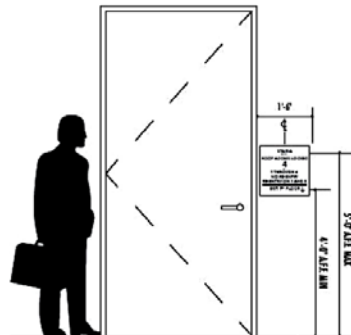
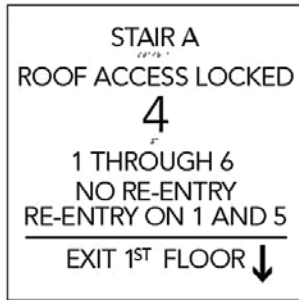
RESTRICTED RE-ENTRY

Front Elevation

OPTION C

SCALE: 3"=1'

STAIRWELL INTERIOR SIGN TYPE



RESTRICTED RE-ENTRY

Front Elevation

OPTION C

SCALE: 3"=1'

MOUNTING PLACEMENT

Location Elevation (2012 TAS Code Mounting Height)

OPTION C

SCALE: 1/2"=1'

OCCUPANCY SIDE STAIR ID



RESTRICTED RE-ENTRY

Front Elevation

OPTION A

SCALE: 3"=1'

UNRESTRICTED RE-ENTRY

Front Elevation

OPTION B

SCALE: 3"=1'

APPENDIX I

{EDITORIAL NOTE: DELETE THE ENTIRETY OF APPENDIX I AND REPLACE WITH THE FOLLOWING TEXT.}

AUTOMATIC SPRINKLER SYSTEMS, FIRE ALARM AND DETECTION SYSTEMS IN EXISTING NON-HIGH-RISE ATRIUM BUILDINGS

SECTION I101 GENERAL

I101.1 Purpose. The purpose of this appendix chapter is to provide a reasonable degree of safety to persons occupying existing atrium buildings by providing for the installation of *automatic sprinkler systems* or fire alarm and detection systems in buildings that do not already have such systems in compliance with this appendix.

I101.2 Application. This appendix chapter shall apply to any atrium building annexed into the corporate limits.

Exception: The provisions of this appendix shall not apply to the following:

1. Atrium buildings built in accordance with Section 1717 as added to the Building Code by Ordinance 81-879 or subsequent versions of that section.
2. Existing high-rise buildings, as defined in Chapter 2.

SECTION I102 DEFINITION

I102.1 Definition. The following term, for the purposes of this appendix, shall have the meaning ascribed in Chapter 2:

ATRIUM.

SECTION I103 FIRE PROTECTION AND DETECTION SYSTEMS

I103.1 Required. All existing atrium buildings shall be equipped with one of the following:

1. An automatic and manual fire alarm system in accordance with NFPA 72 and smoke detectors installed in every room exceeding 40 square feet as well as all common areas according to the compliance schedule set forth in Section I104.
2. An automatic sprinkler system with total coverage throughout the building in accordance with NFPA 13 and with the capability to alarm all occupants throughout the building using alarm notification appliances as required by Section 907. Such sprinkler system shall be installed according to the compliance schedule set forth in Section I104.

SECTION I104
COMPLIANCE SCHEDULE

I104.1 Letter of intent. Within six months after the date of annexation of the building into the jurisdiction, owners of existing atrium buildings shall provide the *fire code official* with a letter expressing the owner's intent to comply with this section.

I104.2 Compliance check points. Except as provided by this section, owners of existing atrium buildings shall comply with the following schedule:

1. If the owner chooses to install an alarm system and smoke detectors in accordance with subsection 1 of Section I103.1, the total square footage of the building shall be equipped with an operational automatic and manual fire alarm system and smoke detectors within two years after the date of annexation into the jurisdiction.
2. If the owner chooses to install a sprinkler system in accordance with subsection 2 of Section I103.1:
 - 2.1 Fifty percent of the building shall be equipped with an operational *automatic sprinkler system* with the capability to alarm all occupants throughout the building within five years after the date of annexation of the building into the jurisdiction.
 - 2.2 The total square footage of the building shall be equipped with an operational *automatic sprinkler system* with the capability to alarm all occupants throughout the building within seven years after the date of annexation of the building into the jurisdiction.

APPENDIX J

{EDITORIAL NOTE: DELETE THE ENTIRETY OF APPENDIX J AND REPLACE WITH THE FOLLOWING TEXT.}

AUTOMATIC SPRINKLER SYSTEMS IN EXISTING HIGH-RISE BUILDINGS

SECTION J101 GENERAL

J101.1 Purpose. The purpose of this appendix chapter is to provide a reasonable degree of safety to persons occupying existing high-rise buildings by providing for installation of *automatic sprinkler systems* in such buildings that do not already have such systems.

J101.2 Application. This appendix chapter shall apply to and the term “existing high-rise building” shall be construed to mean any high-rise building existing within the corporate limits of the city on December 31, 2005, and any high-rise building annexed into the corporate limits after that date.

Exception: The provisions of this appendix shall not apply to the following:

1. Airport traffic control towers in accordance with Sections 412 and 907.2.22 of the *Building Code*.
2. Open parking garages in accordance with Section 406.5 of the *Building Code*.
3. Buildings with an occupancy in Group A-5 in accordance with Section 303.6 of the *Building Code*.
4. Low-hazard special industrial occupancies in accordance with Section 503.1.1 of the *Building Code*.
5. Buildings with an occupancy in Group H in accordance with Section 415 of the *Building Code*.
6. Individually owned individual *dwelling units* in high-rise buildings.

SECTION J102 DEFINITION

J102.1 Definition. The following term, for the purposes of this appendix, shall have the meaning ascribed in Chapter 2:

HIGH-RISE BUILDING.

SECTION J103 AUTOMATIC SPRINKLER SYSTEMS

J103.1 Required. All existing high-rise buildings shall be equipped with an *automatic sprinkler system* in accordance with NFPA 13 according to the compliance schedule set forth in Section J104.

SECTION J104
COMPLIANCE SCHEDULE

J104.1 Letter of intent. On or before December 31, 2006, or within one year after the date of annexation of the building into the jurisdiction, owners of existing high-rise buildings shall provide the *fire code official* with a letter expressing the owner's intent to comply with this section.

J104.2 Compliance check points. Except as provided by this section, owners of existing high-rise buildings shall comply with the following schedule for installation of *automatic sprinkler systems*:

1. On or before December 31, 2009, or within four years after the date of annexation of the building into the jurisdiction, a water supply in accordance with NFPA 13 shall be installed to all floors of the building, and the owner shall provide the *fire code official* with written plans for compliance with this appendix and schedules for completion of the work stated in the written plan.
2. On or before December 31, 2014, or within nine years after the date of annexation of the building into the jurisdiction, a minimum of 50% of the floors shall be equipped with an operational *automatic sprinkler system*.
3. On or before December 31, 2017, or within twelve years after the date of annexation of the building into the jurisdiction, the total square footage of the building shall be equipped with an operational *automatic sprinkler system*.

APPENDIX M

{EDITORIAL NOTE: DELETE THE ENTIRETY OF APPENDIX M AND REPLACE WITH THE FOLLOWING TEXT.}

HOME DAY CARE—R-3 OCCUPANCY

SECTION M101 GENERAL

M101.1 General. This appendix chapter shall apply to a home day care operated within a dwelling. The area of application shall include buildings and structures occupied by persons of any age who receive custodial care for less than 24 hours by individuals other than parents, guardians or relatives by blood, marriage, or adoption in a place other than the home of the person cared for.

SECTION M102 DEFINITION

EXIT ACCESS. That portion of a means of egress system that leads from any occupied point in a building or structure to an exit.

SECTION M103 MEANS OF EGRESS

M103.1 Exits required. If the occupant load of the residence is more than nine, including those who are residents, during the time of operation of the day care, two exits are required from the ground-level story. Two exits are required from a home day care operated in a manufactured home regardless of the occupant load. Exits shall comply with Section R311 of the Residential Code.

M103.1.1 Exit access prohibited. An exit access from the area of day care operation shall not pass through bathrooms, bedrooms, closets, garages, fenced rear yards or similar areas.

Exception: An exit may discharge into a fenced yard if the gate or gates remain unlocked during day care hours. The gates may be locked if there is an area of refuge located within the fenced yard and more than 50 feet (15,240 mm) from the dwelling. The area of refuge shall be large enough to allow 5 square feet (0.5 m²) per occupant.

M103.1.2 Basements. If the basement of a dwelling is to be used in the day care operation, two exits are required from the basement regardless of the occupant load. One of the exits may pass through the dwelling and the other must lead directly to the exterior of the dwelling.

Exception: An emergency and escape window complying with Section R310 of the Residential Code which does not conflict with Section M103.1.1 may be used as the second means of egress from a basement.

M103.1.3 Yards. If the yard is to be used as part of the day care operation it shall be fenced.

M103.1.3.1 Type of fence and hardware. The fence shall be of durable materials and be at least 6 feet (1,529 mm) tall, completely enclosing the area used for the day care operations. Each opening shall be a gate or door equipped with a self-closing and self-latching device to be installed at a minimum of 5 feet (1,528 mm) above the ground.

Exception: The door of any *dwelling* which forms part of the enclosure need not be equipped with self-closing and self-latching devices.

M103.1.3.2 Construction of fence. Openings in the fence, wall or enclosure required by this section shall have intermediate rails or an ornamental pattern that does not allow a sphere 4 inches (102 mm) in diameter to pass through. In addition, the following criteria must be met:

- 1.** The maximum vertical clearance between *grade* and the bottom of the fence, wall or enclosure shall be 2 inches (51 mm).
- 2.** Solid walls or enclosures that do not have openings, such as masonry or stone walls, shall not contain indentations or protrusions, except for tooled masonry joints.
- 3.** Maximum mesh size for chain link fences shall be 1¼ inches (32 mm) square, unless the fence has slats at the top or bottom which reduce the opening to no more than 1¾ inches (44 mm). The wire shall be not less than 9 gauge [0.148 inch (3.8 mm)].

M103.1.3.3 Decks. Decks that are more than 12 inches (305 mm) above *grade* shall have a guard in compliance with Section R312 of the *Residential Code*.

M103.2 Width and height of an exit. The minimum width of a required exit is 36 inches (914 mm) with a net clear width of 32 inches (813 mm). The minimum height of a required exit is 6 feet, 8 inches (2,032 mm).

M103.3 Type of lock and latches for exits. Regardless of the occupant load served, exit doors shall be operable from the inside without the use of a key or any special knowledge or effort. When the occupant load is 10 or less, a night latch, dead bolt or security chain may be used, provided such devices are operable from the inside without the use of a key or tool, and mounted at a height not to exceed 48 inches (1,219 mm) above the finished floor.

M103.4 Landings. Landings for stairways and doors shall comply with Section R311 of the *Residential Code*, except that a landing shall be required for the exterior side of a sliding door when a home day care is being operated in a Group R-3 occupancy.

SECTION M104 **SMOKE DETECTION**

M104.1 General. Smoke detectors shall be installed in *dwelling units* used for home day care operations. Detectors shall be installed in accordance with the approved manufacturer's instructions. If the current smoke detection system in the *dwelling* is not in compliance with the currently adopted code for smoke detection, it shall be upgraded to meet the currently adopted code requirements and Section M103 before day care operations commence.

M104.2 Power source. Required smoke detectors shall receive their primary power from the building wiring when that wiring is served from a commercial source and shall be equipped with a battery backup. The detector shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent

protection. Required smoke detectors shall be interconnected so if one detector is activated, all detectors are activated.

M104.3 Location. A detector shall be located in each bedroom and any room that is to be used as a sleeping room, and centrally located in the corridor, hallway or area giving access to each separate sleeping area. When the *dwelling unit* has more than one *story*, and in *dwelling units* with *basements*, a detector shall be installed on each *story* and in the *basement*. In *dwelling units* where a *story* or *basement* is split into two or more levels, the smoke detector shall be installed on the upper level, except that when the lower level contains a sleeping area, a detector shall be installed on each level. When sleeping rooms are on the upper level, the detector shall be placed at the ceiling of the upper level in close proximity to the stairway. In *dwelling units* where the ceiling height of a room open to the hallway serving the bedrooms or sleeping area exceeds that of the hallway by 24 inches (610 mm) or more, smoke detectors shall be installed in the hallway and the adjacent room. Detectors shall sound an alarm audible in all sleeping areas of the *dwelling unit* in which they are located.

Houston Amendments to the *2015 Uniform Mechanical Code*



Adopted by Ord. No. 2021-1037¹

Passed December 1, 2021²

Effective April 1, 2022³

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1. The City Secretary shall insert the number of the adopting ordinance.
 2. The City Secretary shall insert the date passage and approval of the adopting ordinance.
 3. The City Secretary shall insert the effective date of the adopting ordinance.

CHAPTER 1

ADMINISTRATION

101.1 Title. ~~This document~~ These regulations shall be known as the “~~Uniform~~ *City of Houston Mechanical Code*,” ~~may be cited as such, and will be referred to hereinafter referred to~~ as “this code,” and also known as the *Mechanical Code*.

The *Construction Code* collectively includes this volume and certain other codes, pamphlets, specifications and documents that are adopted in or by reference through the adopting ordinance, City of Houston Ordinance No. 2021-1037⁴.

102.1 Conflicts Between Codes. ~~Where the requirements within the jurisdiction of this mechanical code conflict with the requirements of the plumbing code, the plumbing code shall prevail.~~ In instances where this code, applicable standards, or the manufacturer’s installation instructions conflict, the more stringent provisions shall prevail. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall prevail.

Where, in any specific instance, provisions of this code, including adopted appendices, specify different materials, different methods of construction, or other requirements that differ from those provided in the *City Code* or other volumes of the *Construction Code*, including adopted appendices, other than the *Fire Code* and its adopted appendices and standards, the most restrictive shall prevail. Where, in any specific instance, provisions of this code, including adopted appendices, specify different materials, different methods of construction, or other requirements that differ from those provided in the *Fire Code*, including its adopted appendices and standards, and the building official and the fire marshal are unable to mutually reconcile the requirements by issuing a written interpretation, then either of them may refer the matter to the General Appeals Board created under the *Building Code*, which shall conduct a review of the matter and issue a written code interpretation based upon the apparent intent of the codes involved. Notwithstanding any other provision, interpretations that are issued by the General Appeals Board shall not be subject to further appeal.

102.3 Mechanical Integrity Maintenance. Mechanical systems, materials, and appurtenances, both existing and new, of a premise under the Authority Having Jurisdiction shall be maintained in operating condition. Devices or safeguards required by this code shall be maintained in accordance with the code edition under which installed.

The owner or the owner’s designated agent shall be responsible for maintenance of mechanical systems. To determine compliance with this subsection, the Authority Having Jurisdiction shall be permitted to cause a mechanical system to be reinspected.

102.8 Appendices. The provisions in the appendices are intended to supplement the requirements of this code and shall not be considered part of this code unless formally adopted as such. Appendix F shall be adopted as part of this code.

4. The City Secretary shall insert the number of the adopting ordinance.

102.9 Retroactive Provisions. Notwithstanding any other provision of this section, those provisions of this code that are designated as being “retroactive” shall apply to existing installations and alterations thereof.

102.10 Residential Code. Mechanical systems for detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height, each with separate means of egress, and their accessory structures shall comply with the *Residential Code*. Mechanical systems for residential occupancies to which the *Residential Code* does not apply shall be governed by this code.

102.11 Energy Conservation. The *Energy Conservation Code* and Chapter 11 of the *Residential Code*, as well as any amendments adopted thereto as authorized by state law, shall be enforced by this jurisdiction in accordance with state law.

103.2 Liability. The Authority Having Jurisdiction charged with the enforcement of this code, acting in good faith and without malice in the discharge of the Authority Having Jurisdiction’s duties, shall not thereby be rendered personally liable for damage that accrues to persons or property as a result of an act or by reason of an act or omission in the discharge of such duties. A suit brought against the Authority Having Jurisdiction or employee because of such act or omission performed in the enforcement of provisions of this code shall be defended by legal counsel provided by this jurisdiction until final termination of such proceedings. Except as otherwise provided by law, the building official shall not personally be liable in damages for any act or omission arising out of any official action taken to implement and enforce the provisions of this code. Additionally, except as otherwise provided by law, the building official shall not personally be liable in damages for any act or omission taken in the course and scope of employment. Where and to the extent consistent with the provisions of Chapter 2, Article X, of the *City Code*, this jurisdiction shall provide legal representation and indemnification for any suit or claim brought against the building official or any deputies because of acts or omissions performed in the implementation or enforcement of this code.

This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating, or controlling any building, structure or system or other construction for any damages to persons or property caused by defects, nor shall the code enforcement agency, or any member of the board of appeals, or the jurisdiction be held as assuming any such liability by reason of the inspections authorized by this code or any permits or certificates issued under this code.

103.5 Hearing Procedures.

103.5.1 Hearing notices. Unless otherwise specifically provided, whenever notice is to be given to any person concerning the right to a hearing, the notice may be given by personal hand delivery, certified mail, or private delivery service, return receipt requested. If there is documented proof that these methods are not successful, the written notice may be sent by email.

If the notice is being given to an applicant for a license or to a licensee or to a state license registrant, the notice may be mailed to the address set out in the application for the registration or license unless the applicant or registrant has given the Authority Having Jurisdiction written notice of a change of address, under which circumstances any notice concerning a hearing shall be sent to the most recent address shown on the notice. If any notice mailed to an applicant for a license or to a licensee or registrant is returned without

delivery, notice shall be effective if posted where the public may observe it in the Permit Office.

If notice is being given to a building owner or to a tenant therein and the Authority Having Jurisdiction is unable to determine the name or address of such person after checking the building records and the applicable records of Houston Public Works, the County Appraisal District, the electrical company, the gas company, and the water utility provider, notice shall be mailed to the billing addresses of the building as shown on the records of the electrical company and the gas company and shall be posted on or in view of each entrance to the building. Additionally, if any notice is mailed to a building owner or a building tenant and is returned without delivery, notice shall be effective if posted on or in view of each entrance to the building.

103.5.2 Hearings. Except where otherwise specifically provided, all hearings held pursuant to this code shall be conducted by the jurisdiction's Director of Houston Public Works or a representative, who shall hereinafter be referred to as the "hearing official." The director shall not designate any person to be a hearing official under this code who has taken any part in the investigation of the matter that is the subject of the hearing or any person who directly supervised the investigation. The hearing official shall consider only the evidence presented at the hearing in rendering a decision. The decision of the hearing official shall be set forth in writing and shall be served on each party in the same manner as a notice of right to a hearing.

104.3.2 Plan review fees. Where a plan or other data is required to be submitted in accordance with Section 104.3.1, a plan review fee shall be paid at the time of submitting construction documents for review.

The plan review fees for mechanical systems work shall be charged as described in Section 118.1.11 of the *Building Code* and the city fee schedule—determined and adopted by this jurisdiction.

The plan review fees specified in this subsection are separate fees from the permit fees ~~specified in Section 104.5.~~

~~Where plans are incomplete or changed so as to require additional review, a fee shall be charged at the rate shown in Table 104.5.~~

When approved plans are lost or changed so as to require an additional plan review or when a plan review is required and there is no building permit required, a plan review fee shall be charged as described in Section 118.2.8 of the *Building Code* and the city fee schedule.

104.3.2.1 Deferred Submittal Plan Review Fees. A plan review fee shall be paid at the time of submitting construction documents for review of deferred submittal plans. The fee for any deferred submittal review shall be charged at the rate shown in the city fee schedule for a minimum permit fee plus applicable administrative fee. The plan review fees specified in this subsection are separate fees from the permit fees.

104.3.3 Time Limitation of Application. An application for which no permit is issued within 180 days following the date of application shall become inactive, and plans and other data submitted for review thereafter shall be returned to the applicant or destroyed by the Authority Having Jurisdiction. The building official is authorized to grant one or more extensions of time for additional periods not to exceed 180 days each, for a maximum of

two years from the date of the original application, upon written request and justifiable cause demonstrated by the applicant. If an application for permit does not result in a permit within two years after the date of original application, the permit application shall expire. In order to renew action on an application after expiration, the applicant shall submit a new permit application and plans and shall pay a new plan review fee. Applications for which no permit is issued within 180 days following the date of application shall expire by limitation, plans and other data submitted for review thereafter, shall be returned to the applicant or destroyed by the Authority Having Jurisdiction. The Authority Having Jurisdiction building official shall be permitted to extend the time for action by the applicant for a period not to exceed 180 days upon request by the applicant showing that circumstances beyond the control of the applicant have prevented action from being taken. No application shall be extended more than once. In order to renew action on an application after expiration, the applicant shall resubmit plans and pay a new plan review fee.

104.4.2 Validity of Permit. The issuance of a permit or approval of construction documents plans and specifications shall not be construed to be a permit for, or an approval of, a violation of the provisions of this code or other ordinance of the jurisdiction. No permit presuming to give authority to violate or cancel the provisions of this code shall be valid.

The issuance of a permit based upon plans construction documents, specifications, or other data shall not prevent the Authority Having Jurisdiction from thereafter requiring the correction of errors in said plans the construction documents, specifications, and other data or from preventing building operations being carried on thereunder where in violation of this code or of any other applicable law ordinances of this jurisdiction.

A permit and all its privileges are issued to the owner of the property for which the permit is issued, regardless of who submits the application or pays the permit fees. Where a Texas license is not required to obtain a mechanical permit or complete the proposed mechanical work, Section 105.4 of the Building Code shall apply. Where a Texas license is required to perform specific work, a permit shall be valid only for work performed under the licensed mechanical contractor or licensed HVAC contractor named on the application.

A name change on an application or an existing permit must be obtained if the licensed mechanical contractor or licensed HVAC contractor listed on the application or existing permit is no longer responsible for the work performed. Provided that a refund has not been issued, the property owner has not changed, and written authority to amend the permit to designate a different licensed mechanical contractor or licensed HVAC contractor has been provided by the property owner to the building official, the building official shall issue an amended permit. A name change fee and an administrative fee shall be charged as provided in Section 118.1 of the Building Code and the city fee schedule.

In the case of the death or dissolution of the original property owner or licensed mechanical contractor or licensed HVAC contractor, pursuant to a timely name change request within 45 calendar days after such death or dissolution, the permit will be transferred to the new property owner or licensed mechanical contractor or licensed HVAC contractor at no fee except for the administrative fee established in Section 118.1.1. of the Building Code and the city fee schedule. A property owner, licensed mechanical contractor or licensed HVAC contractor requiring a re-permit who fails to re-permit any applicable work within the time frames established by this code shall be subject to permit fees

established in Section 118 of the *Building Code* and the city fee schedule based on the scope of work for all remaining construction and uninspected work.

104.4.3 Expiration. ~~A Every permit issued by the Authority Having Jurisdiction under the provisions of this code shall become inactive unless expire by limitation and become null and void where the work authorized by such permit is not has commenced and been inspected by a city inspector within 180 days after its issuance, or if from the date of such permit, or where the work authorized by such permit is suspended or abandoned at a time after the work is commenced for a period of 180 days after the time the work was commenced. Before such work is recommenced, a new permit shall first be obtained to do so, and the fee therefore shall be one-half the amount required for a new permit for such work, provided no changes have been made or will be made in the original construction documents for such work, and provided further that such suspension or abandonment has not exceeded 1 year. If work has not commenced under a permit within two years after the date of issuance or is suspended or abandoned at any time for a period of two years, the permit shall expire and become null and void. To recommence work under an expired permit, the permit holder shall pay the full applicable permit fee and submit plans that comply with this code for the previously uninspected portion of the work.~~

Exception: For the purpose of issuing a certificate of occupancy or certificate of compliance, the building official may, upon request, reactivate a permit and perform a final inspection of work.

104.4.4 Extension. ~~A permittee holding an unexpired permit shall be permitted to apply for an extension of the time within which work shall be permitted to commence under that permit where the permittee is unable to commence work within the time required by this section. The Authority Having Jurisdiction shall be permitted to extend the time for action by the permittee for a period not exceeding 180 days upon written request by the permittee showing that circumstances beyond the control of the permittee have prevented action from being taken. No permit shall be extended more than once. In order to renew action on a permit after expiration, the permittee shall pay a new full permit fee. The building official is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. The permit holder shall request the extension in writing and demonstrate justifiable cause.~~

104.4.5 Suspension or Revocation. ~~The After notice is provided of a right to a hearing pursuant to Section 103.5, the Authority Having Jurisdiction shall be permitted to, in writing, suspend or revoke a permit issued under the provisions of this code where the permit is issued in error, on the basis of incorrect information supplied, or in violation of other ordinance or regulation of the jurisdiction.~~

104.5 Fees. Fees shall be assessed in accordance with the provisions of this section and as set forth in the city fee schedule, Table 104.5. ~~The fees are to be determined and adopted by this jurisdiction.~~

104.5.1 Work Commencing Before Permit Issuance. Where work for which a permit is required by this code has been commenced without first obtaining said permit, a special investigation shall be made before a permit is issued for such work.

104.5.2 Investigation Fees. An investigation fee, in addition to the permit fee, shall be collected whether or not a permit is then or subsequently issued. The investigation fee shall be equal to the amount of the permit fee that is required by this code if a permit were to be issued, subject to applicable minimum investigation fees stated in the city fee

schedule. The payment of such investigation fee shall not exempt a person from compliance with other provisions of this code, nor from a penalty prescribed by law.

104.5.3 Fee Refunds. ~~The Authority Having Jurisdiction shall be permitted to authorize the refunding of a fee as follows:~~

~~(1) — The amount paid hereunder that was erroneously paid or collected.~~

~~(2) — Refunding of not more than a percentage, as determined by this jurisdiction where no work has been done under a permit issued in accordance with this code.~~

The building official may authorize the refund of any fee paid hereunder that was erroneously paid or collected due to an error by a city employee. This provision shall not be applicable if the error occurred because of incorrect information provided by the applicant.

The building official may authorize a refund of not more than 90 percent of the amount in excess of the minimum permit fee paid when no work has been done under a permit issued in accordance with this code. If work has been done under the permit, no refund shall be authorized. The originally paid administrative fee and the plan review portion of the permit fee shall be nonrefundable.

The building official Authority Having Jurisdiction shall not authorize a refunding of any fee paid except upon written application filed by the original permittee holder not to exceed later than 180 calendar days after the date of fee payment.

104.5.4 Annual Fee Increase. Notwithstanding any maximum fee established pursuant to the *Construction Code*, the fees in this volume of the *Construction Code*, as adjusted according to this section, shall be automatically increased on the first day of each subsequent calendar year as provided in Section 1-13 of the *City Code*.

{EDITORIAL NOTE: DELETE TABLE 104.5 IN ITS ENTIRETY.}

105.2.6 Reinspections. ~~The building official may assess a A-reinspection fee shall be permitted to be assessed for each inspection or reinspection when an inspector arrives to perform the inspection and finds the where such portion of work for which inspection is called is not complete or where required when corrections called for in a previous inspection report have not been made.~~

~~This provision section shall not to be interpreted as requiring reinspection fees the first time a job is rejected for failure to comply be in accordance with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for inspection or reinspection.~~

The building official may assess a reinspection fee Reinspection fees shall be permitted to be assessed where when the inspection record card is not posted or otherwise available on the work site, when the approved plans are not readily available to the inspector, for failure to provide access on the date for which the inspection is requested, or for deviating from plans requiring the approval of the Authority Having Jurisdiction.

To obtain reinspection, the applicant shall file an application therefore in writing upon a form furnished for that purpose make a request and pay the reinspection fee in accordance with Table 104.5 Section 118 of the *Building Code* and the city fee schedule.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

105.4.1 Temporary Operation Inspection. For inspection of a boiler or a heating, ventilation, refrigeration, or air-conditioning system to be used on a temporary basis, a licensed air-conditioning contractor shall request the inspection and pay the fee stated for this provision in the city fee schedule. If the system is not approved for temporary operation on the first inspection, the reinspection fee will be charged for each subsequent inspection for such purpose.

No permit for temporary use shall be valid for a period longer than 30 calendar days. The Authority Having Jurisdiction is authorized to reissue a temporary permit upon payment of the fees stated for this provision in the city fee schedule for each successive period of not more than 30 days.

106.3 Penalties. A person, firm, or corporation violating or failing to comply with a provision of this code shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punishable by the following penalties: where no specific penalty is otherwise provided in this code, a fine, of not less than \$500.00 and not more than \$2,000.00; imprisonment; or both set forth by the governing laws of the jurisdiction. Each separate day, or a portion thereof, during which a violation of this code occurs or continues, shall be deemed to constitute a separate offense. Where any conduct in violation of this code also constitutes a violation of state penal law, the offense shall be punishable as provided in the applicable state law. In prosecutions under this code, the various provisions hereof that are designated as an "exception" or "exceptions" shall not be treated as exceptions within the meaning of Section 2.02 of the *Texas Penal Code*, and instead, they shall constitute defenses to prosecution within the meaning of Section 2.03 of the *Texas Penal Code*.

106.4 Stop Work Orders. Where work is being done contrary to the provisions of this code, the Authority Having Jurisdiction shall be permitted to order the work stopped by notice in writing served on persons engaged in the doing or causing such work to be done, and such persons shall forthwith stop work until authorized by the Authority Having Jurisdiction to proceed with the work.

At the time a stop work order is issued, the person performing the work and the permit holder shall be given notice of a right to a hearing on the matter pursuant to Section 103.5. On written request from the permit holder, such a hearing shall be held within three business days from the issuance of the stop work order unless the permit holder or person who was doing the work requests an extension of time. Any stop work order that has been issued shall remain in effect pending any hearing that has been requested unless the stop work order is withdrawn by the Authority Having Jurisdiction.

106.5 Authority to Disconnect Utilities in Emergencies. The Authority Having Jurisdiction shall have the authority to disconnect a mechanical system to a building, structure, or equipment regulated by this code in case of emergency where necessary to eliminate an immediate hazard to life or property. The Authority Having Jurisdiction shall, wherever possible, notify the serving utility, the owner, and the occupant of the building, structure, or premises of the decision to disconnect prior to taking such action, and shall notify such serving utility, owner, and occupant of the building, structure, or premises in writing of such disconnection immediately thereafter.

The notice shall also inform the owner and the occupant of the building (or the user if the mechanical equipment is not within a building) of a right to a hearing on the matter pursuant to

Section 103.5. On request, a hearing shall be conducted within three business days unless the owner or the owners authorized agent requests an extension of time.

106.6 Authority to Condemn. Where the Authority Having Jurisdiction ascertains that a mechanical system or portion thereof, regulated by this code, has become hazardous to life, health, or property, or has become insanitary, the Authority Having Jurisdiction shall order in writing that such mechanical system either be removed or placed in a safe or sanitary condition. The order shall specify a reasonable time limit for compliance of not less than three days from the date of the order's issuance and shall inform the owner and the occupant of the right to a hearing on the matter pursuant to Section 103.5. No person shall use or continue using~~maintain~~ a defective mechanical system after receiving such notice.

Where such mechanical system is to be disconnected, written notice shall be given to the owner, or the occupant of the building as specified by Section 106.5. In cases of immediate danger to life or property, such disconnection shall be permitted to be made immediately without such notice.

107.0 Board of Appeals Boards and Licenses.

107.1 General. ~~In order to hear and decide appeals of orders, decisions, or determinations made by the Authority Having Jurisdiction relative to the application and interpretations of this code, there shall be and is hereby created a Board of Appeals consisting of members who are qualified by experience and training to pass upon matters pertaining to mechanical system design, construction, and maintenance and the public health aspects of mechanical systems and who are not employees of the jurisdiction. The Authority Having Jurisdiction shall be an ex-officio member and shall act as secretary to said board but shall have no vote upon a matter before the board. The Board of Appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render decisions and findings in writing to the appellant with a duplicate copy to the Authority Having Jurisdiction.~~ The Mechanical Code Review Board and the Boiler Code Review and Licensing Board shall hear and decide appeals of orders, decisions or determinations made by the Authority Having Jurisdiction relative to the application and interpretations of this code, as applicable. (See Sections 110 and 111.)

107.2 Limitations of Authority. ~~The Board of Appeals aforesaid boards shall have no authority relative to interpretation of the administrative provisions of this code, which shall be the purview of the General Appeals Board (see Section 113 of the *Building Code*), unless otherwise specified, nor shall the aforesaid boards be empowered to waive requirements of this code.~~

108.0 Emergency Work.

108.1 General. Notwithstanding any requirement in this code or in the *Construction Code* that requires the issuance of a permit under this code prior to commencing work or that imposes an additional fee for work commenced without a permit being first obtained, a permit or additional fee is not required to commence work if:

- (1) The work involves the emergency repair or replacement of an existing air-conditioning, heating, ventilation or refrigeration system;
- (2) The work needs to be commenced immediately in order to protect property or to preserve the health of persons;

- (3) Notice is given to the Authority Having Jurisdiction by mail, telephone, email, fax or other approved method when the work was commenced; and,
- (4) A permit is then obtained within 48-hours as provided in Subsection 108.2.

The Authority Having Jurisdiction shall promulgate regulations and forms as required to administer this section.

108.2 Time Limit for Obtaining Permit. The licensed contractor, in order to avoid penalties for failure to obtain a permit prior to commencing such emergency work, in addition to complying with Section 108.1, must also apply for a permit for the emergency work within 48 hours after 8:00 a.m. of the first day that the city permit office is opened for business after the date on which the contractor commences such repair or replacement.

108.3 Operation of System. If the repair or replacement is completed prior to the time that the licensed air-conditioning contractor is required to apply for a permit under these provisions, at the contractor's sole risk and responsibility for any and all injuries and damages that might result therefrom, the contractor may place the system or equipment in operation, provided that the contractor then remains at the job site and checks the operation for a period of at least 15 minutes before leaving the premises. The contractor shall instruct the occupant of the premises or the person in charge of the premises regarding the manner in which the system or equipment may be immediately shut off in case of malfunction in its operation and shall provide the aforesaid occupant or person with a telephone number(s), where the licensed contractor can be reached in case of an emergency resulting from operation of the system or equipment prior to inspection by the jurisdiction.

108.4 Emergency Appeal. In the event of a dispute between the jurisdiction's inspector and the licensed air-conditioning and refrigeration contractor doing the job as to the existence of the emergency requiring the commencing of the job without a permit, the dispute shall be first considered by the Authority Having Jurisdiction. The contractor may appeal the decision of the Authority Having Jurisdiction to the Mechanical Code Review Board or Boiler Code Licensing and Review Board, as applicable, for its consideration and decision. In reviewing the decision of the Authority Having Jurisdiction, the Board shall base its decision on the evidence and testimony presented by both parties.

109.0 Temporary Operation Permit.

109.1 General. Any heating, ventilating, refrigerating or air-conditioning system being altered or installed by authority of a permit issued under the provisions of this code may be operated for limited periods of time only for testing purposes prior to passing final inspection, on the following conditions:

- (1) The licensed air-conditioning contractor in whose name said permit is issued shall request that the Authority Having Jurisdiction inspect the system.
- (2) If, upon inspection, the system is approved for operation for testing purposes, the Authority Having Jurisdiction shall indicate the length of time that the system may be operated for testing purposes, based upon the size and type of system and the extent of the installation or alteration involved.
- (3) Upon expiration of the temporary operation permit for testing purposes, the system shall be given a final inspection. If the system is not approved, a reinspection fee will be charged on all subsequent inspections until the system is approved as complying with the requirements of the code, or is uninstalled.

109.2 Extension of Time. The time period permitted for operating the system for testing purposes only may be extended by the Authority Having Jurisdiction when necessary to complete the testing of the system to determine that it is operating safely. The extension of such time period shall be noted in writing on the permit, and the system shall still be subject to Section 109.1(3).

For the temporary operation permit fee, see the city fee schedule.

110.0 Mechanical Code Review Board.

110.1 Creation of Board. There is hereby created a Mechanical Code Review Board, hereinafter in this section called the "board," consisting of seven members. Each member of the board except the members in Position Nos. 1 and 2 shall be appointed by the mayor and confirmed by the city council. The mayor shall designate a member to be chairperson. The contractor members filling Position Nos. 5 and 6 shall have been actively engaged in the air-conditioning business in the jurisdiction for at least five years prior to the date of their appointment.

The positions on said board shall be filled as follows:

Position No. 1 shall be filled by the Authority Having Jurisdiction.

Position No. 2 shall be filled by the fire marshal of the jurisdiction.

Position No. 3 and 4 shall each be filled by a registered professional engineer licensed by the State of Texas who is actively engage in mechanical engineering.

Position No. 5 shall be filled by a duly licensed Class A air-conditioning and refrigeration contractor licensed under the Texas Air Conditioning and Refrigeration Contractor License Law.

Position No. 6 shall be filled by a duly licensed Class B air-conditioning and refrigeration contractor licensed under the Texas Air Conditioning and Refrigeration Contractor License Law.

Position No. 7 shall be filled by a representative of the public generally.

The Authority Having Jurisdiction and the fire marshal each, from time to time, may designate in writing a person under their supervision to act in their place as their duly authorized representative. The representative shall enjoy all rights and privileges of the position. A copy of such a designation, specifying the dates any such person shall act as representative of the Authority Having Jurisdiction or of the fire marshal, shall be filed with the minutes of the board.

The terms of office for the appointees to Position Nos. 3, 5 and 7 on the board will expire on the second day of January of odd-numbered years. The terms of office for the appointees to Position Nos. 4 and 6 will expire on the second day of January of even-numbered years. However, each member shall continue in office until a successor has been appointed and qualified.

Those members of the board in Position Nos. 1 and 2 shall serve ex officio.

The amendment of this code section shall not terminate the term of office of any person currently serving on the board. Any person who is currently serving on the board shall continue to serve in the position for which he was appointed and confirmed until a successor is appointed and qualified.

In addition to other qualifications hereinabove required, each member of the board shall be a citizen of the United States. All appointed members of the board shall be selected on the basis of their technical and professional qualifications, except that the appointee to Position No. 7 is not required to have the technical and professional qualifications required for other members

of the board. Each member of the board shall be subject to removal by the mayor. Four members of the board at any meeting shall constitute a quorum for transaction of all business of the board. A majority vote of the members present at any meeting at which a quorum is present shall prevail.

Whenever any position on the board becomes vacant by reason of death, resignation or removal, said vacancy shall be filled for the unexpired term of the member being replaced. Should a vacancy occur on the board, the mayor shall appoint, with the approval of the city council, another qualified person to serve the unexpired term of the vacancy.

The board shall hold regular annual meetings in Houston, Texas, the exact time and place to be designated by the chairperson of the board, who is also authorized to call special meetings when deemed necessary. The Authority Having Jurisdiction, or a duly authorized representative, shall act as secretary of the board. Each member of the board shall receive \$50.00 for each meeting the member attends (not to exceed three meetings in a calendar month) at which a quorum is present, provided, however, each member of the board who is an employee of the jurisdiction will be paid only for those meetings the member attends that are neither held during nor continue beyond the member's regular working hours.

The secretary of the board shall keep the minutes of the board meetings and other business of the board, including correspondence received and sent by the board. The minutes of the board shall be public records available for inspection by the public at all reasonable times.

110.2 Duties. The board shall serve as the Board of Appeals for matters relating to the provisions of this code and shall serve in an advisory capacity to the Authority Having Jurisdiction in technical matters pertaining to provisions of this code. In addition, the board is hereby authorized to perform such other duties as specified in this division and to make recommendations to city council regarding the provisions of this code pertaining to or affecting air-conditioning, ventilation, or refrigeration.

Exception: As provided by Section 111 of this code, matters within the jurisdiction of the Boiler Code Review and Licensing Board shall be heard by that board.

110.3 Restriction on Participation in Certain Matters. No board member shall vote on any matter or participate as a board member in the discussion of any matter in which the member has a personal or financial interest other than as a member of a class or group, of which each member will be affected substantially to the same extent by the board's action or decision in the matter as will the other members of the class or group. (For restrictions on jurisdiction officials, see Chapter 171 of the *Texas Local Government Code*.)

110.4 Approval of New Materials. A person, firm, or corporation (hereinafter called "person") desiring approval of any material, device, fixture, method of assemblage, installation, appurtenance, or appliance that is a part of or pertains to heating, air-conditioning, ventilation, refrigeration or heat-producing appliances or systems (hereinafter individually and collectively referred to as "item") may submit the item to the Authority Having Jurisdiction for approval along with a written application containing such information as the Authority Having Jurisdiction may require for determination of approval under Section 302.2.

If the Authority Having Jurisdiction denies a request for an approval, the person who made the request may appeal that decision by delivering a written notice of appeal to the secretary of the board within 10 days of receipt of the notice of the decision of the Authority Having Jurisdiction. Upon receipt of the notice of appeal, the board shall set the matter for hearing. The board may request any additional tests be conducted that it finds are necessary to determine whether the decision of the Authority Having Jurisdiction should be upheld or overturned. All such tests shall be at the expense of the person requesting the approval. The burden shall be on that person to show that the decision of the Authority Having Jurisdiction should be overturned.

The decision of the board upholding or overturning the decision of the Authority Having Jurisdiction shall be set out in the minutes of the board. If the board overturns the decision of the Authority Having Jurisdiction, it shall set forth in its minutes any conditions or limitations to which the approval is made subject.

110.5 Appeals. Any owner, user, license applicant, license holder, or interested person who is affected and aggrieved by a decision of the board may appeal the board's decision to the city council, pursuant to Rule 12 of Section 2-2 of the *City Code*.

Upon appeal to the city council from the board's decision, the board's secretary shall file with the city secretary a copy of the minutes of the board setting forth the board's decision and a copy of any minutes of the board reflecting any discussion or motions concerning the matter. Upon receipt of all materials required by the city secretary's Office, the city secretary shall set the matter for consideration.

All orders or decisions of the Authority Having Jurisdiction shall be in writing and shall be and remain in full force and effect until reversed, suspended, cancelled or annulled by the board or the city council.

The decision of the city council shall be final.

110.6 License Required. Except as otherwise provided herein, a person who does not hold a current and applicable license as required by the Texas Air Conditioning and Refrigeration Contractor License Law shall not install, alter or repair any heating, ventilating, air-conditioning or refrigeration system, or any part thereof, or obtain any permit to do so.

Note: The Texas Air Conditioning and Refrigeration Contractor Licensing Law, which is codified as Chapter 1302 of the *Texas Occupations Code*, includes certain exemptions from the requirement of obtaining a state license, which will be honored by this jurisdiction. These exemptions include: work performed by homeowners on their own homes, certain maintenance work by employees of the property owner or management company, certain work performed by employees of regulated electric and gas utility companies, and certain work performed by licensed professional engineers in connection with their business operations.

110.7 State License Notification Requirement. Each person licensed under the Texas Air Conditioning and Refrigeration Contractor License Law shall notify and register his notification with the Authority Having Jurisdiction in a form and manner prescribed by the Authority Having Jurisdiction prior to performing any work pertaining to that license within the jurisdiction. The notification shall be registered and maintained on file within the jurisdiction offices of the Mechanical Inspections Section, Code Enforcement Branch, Houston Public Works. Each notification registration shall expire on December 31 of each year. Additionally, a notification registration shall expire upon the registrant's failure to provide proof of current insurance coverage or proof of license renewal.

110.8 Liability Insurance. Each person who is required to register shall, upon registration and continuously thereafter for as long as the registration is renewed, maintain proof of current liability insurance coverage in the amount and form specified in applicable state laws and regulations. The proof shall be in the form of a copy of the certificate furnished to the state and evidence that the carrier of the insurance will provide 10 days' notice to the Authority Having Jurisdiction in the event that the policy is reduced or terminated prior to the expiration date specified on the certificate.

110.9 Violations. It shall be unlawful for any person, partnership, firm or corporation who is not licensed under the Texas Air Conditioning and Refrigeration Contractor License Law to display a

sign or advertise in any other manner that such person, partnership, firm or corporation is authorized to engage in business as an air-conditioning and refrigeration contractor.

It shall be unlawful for a licensed air-conditioning and refrigeration contractor to:

- (1) Permit a license to be used in any manner contrary to any of the provisions of this code;
- (2) Obtain a permit required under this code in another person's name or allow the use of his name by another person for the purpose of obtaining a permit when the licensed air-conditioning and refrigeration contractor does not intend to or does not, in fact, do or supervise the work authorized by the permit; or,
- (3) Take out permits for air-conditioning work to be done by a person, partnership, firm or corporation other than the person, firm, partnership, or corporation by whom the permittee is employed.

Licensed air-conditioning and refrigeration contractors shall not be simultaneously employed by, or work for, more than one business entity for the purpose of obtaining permits under this code or for the purpose of doing or supervising work that can be done only by authority of a permit obtained under the provisions of this code.

110.10 Identification of Vehicles and Sites. Each vehicle used in conjunction with air-conditioning and refrigeration contracting shall be marked as required by Title 16 Texas Administration Code Section 75.71(g). When an unlicensed subcontractor is at a job site not identified by a marked vehicle, the site shall be identified either by a temporary sign on the subcontractor's vehicle or on a sign visible and readable from the nearest public street containing the contractor's license number and company name.

110.11 Contractor Records. Each time that a licensed air-conditioning and refrigeration contractor or any employee thereof does any installation, replacement, or repair of any type on any air-conditioning, refrigeration, ventilation or heating system, or combination of such systems, the contractor shall make a record of the work. The contractor shall readily make available the records, upon request, for inspection and copying by the Authority Having Jurisdiction and the contractor must hold the records on file for at least two years. Before leaving the premises where the work is performed, the contractor shall deliver one copy of the record to the owner or the owner's representative. These records shall contain the following information:

- (1) Name and address of licensed contractor.
- (2) License number of licensed contractor.
- (3) Name of owner.
- (4) Date.
- (5) General nature of work performed.
- (6) Any other information required by applicable provisions of the Texas Air Conditioning and Refrigeration Contractor License Law and regulations issued thereunder.

111.0 Boiler Code Review and Licensing Board.

111.1 Creation and Composition. There is hereby created a Boiler Code Review and Licensing Board consisting of five members, hereinafter in this section called the "board." The members in Position Nos. 1 through 4 of the board shall be appointed by the mayor and confirmed by the city council. The mayor shall designate a member to be chairperson. Each of the five positions shall be filled as follows:

Position No. 1 shall be filled by a registered professional engineer licensed by the State of Texas who is actively engaged in the design of mechanical systems using boilers as a source of heat energy.

Position No. 2 shall be filled by an owner, partner, officer, or manager of a firm that is actively engaged in the manufacture, sale, repair or installation (or combination thereof) of boilers.

Position No. 3 shall be filled by a licensed stationary engineer who has held a first-grade license issued by the jurisdiction for not less than 10 years.

Position No. 4 shall be filled by a person who is an owner, partner, officer, or manager of a firm that is the user of a boiler.

Position No. 5 shall be filled by the Authority Having Jurisdiction.

The Authority Having Jurisdiction, from time to time, may designate in writing a member of the jurisdiction's Boiler Inspection Section to act in his place as a duly authorized representative. The representative shall enjoy all rights and privileges of the position. A copy of the designation, specifying the dates such a person shall act as representative of the Authority Having Jurisdiction, shall be filed with the minutes of the board.

111.2 Appointments, Removals, Etc. The terms of office for the appointees to Position Nos. 1 and 3 shall expire on the second day of January of odd-numbered years, and the terms of the appointees to Position Nos. 2 and 4 shall expire on the second day of January of even-numbered years. However, each member shall continue in office until a successor is appointed and qualified. The amendment of this code section shall not terminate the term of office of any person currently serving in any position of the board. Any appointed member who is currently serving on the board shall continue to serve in the position to which he was appointed and confirmed until a successor is appointed and confirmed by city council under this code. Each appointed member of the board shall be subject to removal at any time by the mayor. Each member of the board shall receive \$50.00 for services for each meeting of the board the member attends at which a quorum is present, provided, however, each member of the board who is an employee of the jurisdiction shall be paid only for those meetings that are not held during the board member's regular working hours.

Three members of the board present at any meeting shall constitute a quorum for the transaction of all business of the board. A majority vote of board members present at any meeting at which a quorum is present shall prevail.

The board shall meet twice each month. The chairperson shall have the power to call a special session of the board when deemed necessary, but no more than three meetings may be held in any month. In the absence of the chairperson at any meeting, the board members present may, by majority vote, select a temporary chairperson for that meeting.

111.3 Restriction on Participation in Certain Matters. No board member shall vote on any matter or participate as a board member in the discussion of any matter in which the member has a personal or financial interest other than as a member of a class or group, of which each member will be affected substantially to the same extent by the board's action or decision in the matter as will the other members of the class or group. (For restrictions on jurisdiction officials, see Chapter 171 of the *Texas Local Government Code*.)

111.4 Records. The board shall keep or cause to be kept a written record of its meetings. The records shall be open to inspection by the public at all reasonable times.

111.5 Authority Having Jurisdiction. The Authority Having Jurisdiction is hereby charged with determining compliance with the provisions of this code. The Authority Having Jurisdiction shall

prepare and maintain a record of all persons qualified to install and operate boilers under the provisions of this code. The Authority Having Jurisdiction or duly appointed representative shall act as secretary to the board at all meetings.

111.6 Examinations. The board shall develop and administer examinations for stationary engineer's licenses. The examinations shall determine the applicant's capacity and ability to understand and safely operate boilers, steam equipment and the various auxiliary machinery, appliances and appurtenances in conjunction with the operation of such boilers and steam equipment. The board shall perform such other duties as may be required of it by the governing body and mayor of the jurisdiction. The board shall adopt rules and regulations which, insofar as they relate to boilers, shall conform to the ASME Code and shall not be inconsistent with the terms and provisions of this code.

111.7 Review and Action of the Boiler Board. Disputes arising between inspectors and any person or persons concerning the application of the provisions of this code to the installation of boiler facilities serving the property of such person or persons may be submitted to the Authority Having Jurisdiction. An interested party (other than an inspector) who is dissatisfied with the decision of the Authority Having Jurisdiction in the matter may appeal that decision to the board. Upon such an appeal, each party to the dispute shall be entitled to present its side of the matter to the board, and the board shall render its decision on the matter based on the information presented by both sides and the board's interpretation of applicable provisions of this code.

The board shall have the power, by a majority vote, to revoke or cancel a stationary engineer's license, operator's license, or operator's permit for dishonesty, incompetency, or misconduct by the license or permit holder while discharging his duties or for neglect of his duties.

No license or permit shall be permanently revoked or canceled without first giving the license or permit holder an opportunity to be heard by the board. The Authority Having Jurisdiction shall provide notice of a right to a hearing on the matter pursuant to Section 103.5.

The Authority Having Jurisdiction shall have the authority to suspend for just cause a stationary engineer's license, operator's license, or operator's permit. The holder of a suspended license or permit shall not engage in activities authorized by the license or permit while such license or permit is suspended but shall be given an opportunity to be heard by the board within five working days after delivering to the Authority Having Jurisdiction a written request for a hearing.

111.8 Review of New Materials, Methods and Revisions to the Code. Any person whose boiler products are not approved under this code may file a petition in writing for approval thereof. The petition shall be delivered to the Authority Having Jurisdiction, who shall determine whether the material or method should be approved pursuant to Section 302.2 of this code. If the Authority Having Jurisdiction denies approval of the material or method, the person who made the request may appeal that decision by delivering a written notice of appeal to the secretary of the board within 10 days of receipt of the notice of the decision of the Authority Having Jurisdiction. Upon receipt of the notice of appeal, the board shall set the matter for hearing. The board may request any additional tests be conducted that it finds are necessary to determine whether the decision of the Authority Having Jurisdiction should be upheld or overturned. All such tests shall be at the expense of the person requesting the approval. The burden shall be on that person to show that the decision of the Authority Having Jurisdiction should be overturned.

The decision of the board upholding or overturning the decision of the Authority Having Jurisdiction shall be set out in the minutes of the board. If the board overturns the decision of the Authority Having Jurisdiction, it shall set forth in its minutes any conditions or limitations to which the approval is made subject.

The board shall receive requests for revisions to those provisions of this code that affect matters relating to boilers, and it shall be the duty of the board to recommend to the city council any changes to this code that the board deems necessary. The board shall make a report to the city council annually stating its recommended changes.

111.9 Appeals. Any owner, user, license applicant, license holder, or interested person who is affected and aggrieved by a decision of the board may appeal the board's decision to the city council, pursuant to Rule 12 of Section 2-2 of the City Code.

Upon appeal to the city council from the board's decision, the board's secretary shall file with the city secretary a copy of the minutes of the board setting forth the board's decision and a copy of any minutes of the board reflecting any discussion or motions concerning the matter. Upon receipt of all materials required by the city secretary's Office, the city secretary shall set the matter for consideration.

All orders or decisions of the Authority Having Jurisdiction shall be in writing and shall be and remain in full force and effect until reversed by the board or the city council or suspended, cancelled or annulled.

The decision of the city council shall be final.

112.0 Stationary Engineer's License.

112.1 License. Persons who desire to secure a stationary engineer's license shall apply to the board and pay to the Authority Having Jurisdiction the applicable fee stated in the city fee schedule.

Licenses shall be granted in three grades:

- (1) A first-grade stationary engineer's license authorizes the licensee to have direct charge of, operate or supervise any power boiler of any size.
- (2) A second-grade stationary engineer's license authorizes the licensee to have direct charge of, operate, and supervise any power boiler having an aggregate amount of heat output not to exceed 8,380,000 Btu per hour and to act as assistant or watch engineer under the charge and supervision of the holder of a first-grade stationary engineer's license of any power boiler.
- (3) A third-grade stationary engineer's license authorizes the licensee to have direct charge of, operate, or supervise any power boiler having an aggregate amount of heat output not to exceed 3,352,000 Btu per hour and to act as assistant or watch engineer under the charge and supervision of the holder of a first- or second-grade stationary engineer's license of any power boiler having an aggregate amount of heat output not to exceed 8,380,000 Btu per hour.

112.2 Stationary Engineer Examination Application. An applicant for a first-grade stationary engineer's license shall present to the board service letters showing that he has: (i) at least four years of hands-on boiler operating experience on boilers used to heat water or liquid for environmental heating or commercial processing purposes or for generating steam or vapor by direct application of heat; (ii) a graduation certificate from an accredited engineering school and at least two years of hands-on boiler operating experience with boilers used to heat water or liquid for environmental heating or commercial processing purposes or for generating steam or vapor by direct application of heat; or (iii) a United States Department of Labor diploma showing the applicant finished a full three-year course as an apprentice stationary engineer and two years of hands-on boiler operating experience with boilers used to heat water or liquid for environmental

heating or commercial processing purposes or for generating steam or vapor by direct application of heat.

An applicant for a second-grade stationary engineer's license shall present to the board service letters showing that he has: (i) at least three years of hands-on boiler operating experience with boilers used to heat water or liquid for environmental heating or commercial processing purposes or for generating steam or vapor by direct application of heat; or (ii) a graduation certificate from an accredited engineering school and at least one year of hands-on boiler operating experience on boilers used to heat water or liquid for environmental heating or commercial processing purposes or for generating steam or vapor by direct application of heat.

An applicant for a third-grade stationary engineer's license shall present to the board service letters showing that he has: (i) at least two years of hands-on boiler operating experience with boilers used to heat water or liquid for environmental heating or commercial processing purposes or for generating steam or vapor by direct application of heat; or (ii) a graduation certificate from an accredited engineering school and at least six months of hands-on boiler operating experience on boilers used to heat water or liquid for environmental heating or commercial processing purposes or for generating steam or vapor by direct application of heat.

No person may take an examination for a stationary engineer's license unless he has submitted the service letters, certificates, and/or diplomas to the board as required by this section and the submitted documents have been accepted by the board.

Applicants will be required to correctly answer at least 70 percent of the questions comprising the examination to qualify for a stationary engineer's license of any grade. All questions and answers will be written in the English language.

An applicant for a stationary engineer's license who fails to satisfactorily pass an examination shall not be entitled to a refund of the examination fee paid to the jurisdiction and shall not be reexamined for the grade in which the applicant failed, or examined for a higher grade, within a period of less than 30 days.

Each applicant shall pay the examination fee stated for this provision in the city fee schedule for each examination for which the applicant applies. The fee is to be paid to the Authority Having Jurisdiction at the time the application is filed. Service letters shall be filed with the application. An applicant shall be eligible for examination on the date of the next regularly scheduled examination that is held at least seven days after the date of application.

Applicants who have successfully passed the examination shall pay the license fee stated for this provision in the city fee schedule to the Authority Having Jurisdiction prior to the issuance of the license. The license shall expire on December 31 of the year of issuance, unless suspended or *revoked*. Thereafter, the license may be renewed annually pursuant to the provisions set forth below. The receipt for payment of a license renewal fee shall be displayed with the license. Failure to do so shall constitute grounds for the suspension or *revocation* of the license.

112.3 License Renewals. License renewals shall be granted without reexamination upon payment of the fee stated for this provision in the city fee schedule, provided such fee is paid within 30 days after the expiration date of the license and not thereafter. When a renewal application is filed more than 30 days after the expiration of the license, the fee for renewal shall be as stated for this provision in the city fee schedule. When the annual license renewal fee has not been paid for a period of *five consecutive* years, the license shall not be renewed until the applicant has successfully passed a reexamination.

Each certificate or license issued under the terms and provisions of this section shall be signed by the person to whom it was issued as required by the board.

112.4 Validity, Replacement of License. When the holder of a license is examined by the board and granted a license in a higher grade, the higher-grade license shall not be issued until the license of the lower grade is surrendered and all required fees are paid to the Authority Having Jurisdiction.

When a license becomes lost or destroyed, the board shall grant a new license in the same grade, provided proof of such loss or destruction is presented to the satisfaction of the board. The fee for a replacement license shall be stated for this provision in the city fee schedule. If the proof of such loss or destruction is not satisfactory to the board, reexamination in the same grade shall be required, and the fee for the reexamination shall be as provided in Section 112.2.

112.5 Reciprocity. A person who holds a current and valid marine engineer's license issued by the United States Coast Guard shall be qualified for examination by the board for a stationary engineer's license of equal or lower grade, provided the license fee set forth in Section 112.2 has been paid.

A person who holds a current and valid stationary engineer's or a steam engineer's license issued by a state, municipality, or government agency shall be qualified for examination by the board in the grade of the equivalent license in this jurisdiction, as determined by the board, provided the holder of the license presents proof to the satisfaction of the board that the license was granted as a result of boiler operating experience and a passing grade on a written examination on the operation, maintenance and repair of boilers and boiler accessories and safety rules for the boilers.

No license issued by a foreign government, graduation certificate from a foreign school, college, or university, or any service letter from an employer in a foreign country shall qualify the holder thereof to be examined by the board for a stationary engineer's license of any grade unless the submitted document and the information contained therein are determined valid by the board and equivalent to the standards prescribed above. Upon examination of the information presented, the board shall designate the grade in which the applicant may be examined, if such evidence is found by the board to be valid.

112.6 Expiration of License. Each license issued for stationary engineers that was in effect the day prior to the adoption of this code by city council shall expire on the 31st day of December of the year in which this code is adopted. Any such license may be renewed as though it had been originally issued pursuant to this code.

112.7 Limitations of Operator. Except as provided in Section 113.1, no person shall:

- (1) Have direct charge, control, or supervision of any power boiler; or,
- (2) Act as or perform the duties of a stationary engineer or assistant watch engineer on any power boiler.

Nor shall any owner, user or person operate or use, or cause or permit any boiler to be operated or used unless the persons responsible for the operation of the boiler have current and valid licenses for the applicable classes as required in Section 112.1.

112.8 Duties of the Certificate Holder. Each holder of a certificate of stationary engineer's license shall file with the board the name of the employer, the plant location, and the amount of Btu-per-hour heat output of the boiler that the holder is operating. Each holder of a stationary engineer's license shall enclose his license certificate under glass in a dustproof frame and shall display it in a conspicuous place in the plant where the holder is employed.

The operator's permit issued under Section 113.1 designating the person in charge of the boiler shall be enclosed under glass in a dustproof frame and prominently displayed as near as possible to the boiler to which the operator's permit applies.

112.9 Responsibility of the Boiler Owner or User. Every owner or user of a power boiler that has heat output that exceeds 2,100,000 Btu per hour shall establish a method of operation utilizing one or more licensed stationary engineers of the herein required license grade. The operating method shall include direct physical examination of the boiler by the licensed stationary engineer at reasonable time intervals to ensure its safe operation. The owner or user shall establish the operation method based on accepted boiler industry practices commensurate with load characteristics, use, and configuration of the boiler.

113.0 Boiler Operator's Permit.

113.1 Application, Issuance, Fee and Expiration. An owner or user of any hot-water-heating boiler, low-pressure hot-water-heating boiler, or steam-heating boiler at pressure of 15 pounds per square inch or less used to heat water or liquid for environmental heating or commercial processing purposes or a power boiler having an heat output that does not exceed 2,100,000 Btu per hour, may apply to the Authority Having Jurisdiction for a permit to allow the boiler to be operated by the owner or user or by a person knowledgeable in the operation of the boiler, instead of by a licensed stationary engineer. The person who is to operate the boiler shall be the owner of the boiler or his bona fide employee and shall demonstrate competency to do so in a manner determined by the board. The board shall establish the method of testing and the minimum knowledge, ability, and qualifications such person must demonstrate to show competency to operate the distinctive types of boilers. If a person demonstrates competency in the operation of the type of boiler for which the permit is sought, the permit shall be granted upon the payment of the permit fee stated in the city fee schedule. The permit shall expire on December 31st of each year, unless suspended or *revoked* before the expiration date.

113.2 Renewal Application and Fee. Renewal of such permits shall be granted upon the payment of the renewal fee stated for this provision in the city fee schedule if the renewal is applied for within 30 days after the expiration of such permit. If the renewal is not applied for within 30 days after the expiration of such permit, the applicant may renew the permit upon payment of the regular fee stated for this provision in the city fee schedule.

113.3 Permit Specific to Location and Boilers at the Location. A permit shall be valid only for the specific location and for the boilers at the location named on the permit. Separate permits may be issued for a person to operate boilers at two or more locations owned by the employer of the boiler operator listed on the permit. When a permit is issued for boiler operation at two or more locations, the applicant must file for a separate boiler operator permit for each location and pay the fee for each boiler operator permit received.

113.4 Replacement of Lost or Destroyed Permit. When an operator's permit becomes lost or destroyed, the Authority Having Jurisdiction may grant a replacement permit in the same manner as set forth for a stationary engineer's license in Section 112.4.

113.5 Expiration After Adoption of Code. All permits issued for the operation of boilers that were in effect the day prior to the adoption of this code by city council shall expire on the 31st day of December of the year in which this code is adopted. Any such permit may be renewed as though it had been originally issued pursuant to this code.

114.0 Boiler Related Inspections and Liabilities. The Authority Having Jurisdiction shall periodically inspect each location where a boiler is installed to determine if the boiler is being operated by an authorized person in accordance with all applicable laws. Such inspections shall

be made annually or at such other intervals as the Authority Having Jurisdiction determines is necessary to ensure compliance with applicable laws.

Exception: Boilers used solely for the production of domestic water are exempted from 114.0.

If there is a conflict between this code and the State of Texas Boiler Law in Chapter 755 of the *Texas Health and Safety Code* and any amendments thereto, then state law will apply.

The provisions of this code shall not be construed to relieve from responsibility or lessen the responsibility of any person, firm, corporation, master plumber, appliance dealer, or installer owning, operating, or installing any boiler or other equipment described in this section for damages to persons or property caused by any defect therein, nor shall the jurisdiction be held responsible for any such liability as a result of an inspection authorized or an approval issued by this code.

CHAPTER 2

DEFINITIONS

201.2 Interchangeability. Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

201.3 Specific Construction and Terms Defined in Other Codes. Where specific rules of construction or terms are not addressed or defined in this code and are addressed or defined in the *City Code* or another volume of the *Construction Code*, such terms or specific constructions herein shall have the meanings ascribed to them in those other volumes, as applicable to the construction and proposed scope of work hereunder.

203.0

– A –

Alteration. Any change in an original design or configuration.

Authority Having Jurisdiction. The *Director of Public Works*, who is appointed to administer and enforce the provisions of this code. ~~organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, installations, or procedures. The Authority Having Jurisdiction shall be a federal, state, local, or other regional department or an individual such as a plumbing official, mechanical official, labor department official, health department official, building official, or others having statutory authority. In the absence of a statutory authority, the Authority Having Jurisdiction may be some other responsible party.~~ This definition shall include the Authority Having Jurisdiction's duly authorized representatives.

204.0

– B –

Building Code. The ~~building code~~ *City of Houston Building Code*, as that is adopted and amended by this jurisdiction.

Building Official. The director of Houston Public Works or the duly authorized representative designated by the director to act as the chief construction code enforcement official of the jurisdiction; also known as chief building official. The term also includes the Houston Airport Systems building official who may be designated by the building official to perform *Construction Code* permitting and enforcement activities on Houston Airport Systems premises.

205.0

– C –

Certificate of Compliance. A certificate stating that materials and products meet specified standards or that the scope of work under a specific permit was done in compliance with approved construction documents. Any reference in the *Construction Code* to a "CC", certificate of

completion, or a certificate of inspection issued by this jurisdiction, is a reference to a certificate of compliance as defined herein.

City Code. The Code of Ordinances, City of Houston, Texas.

City Fee Schedule. The schedule of fees charged by the city for various permits, licenses, authorizations and services, which is maintained on the city's website.

Code Official. The Houston Fire Department and Building Code Enforcement employees, including but not limited to, plan analysts, field inspectors, and other technical staff charged with the administration and enforcement of this code as specifically delegated by the Authority Having Jurisdiction. The code official is authorized to approve designs, construction, equipment, materials, installations, processes, procedures, practices, and other duties necessary to verify and document compliance with the Construction Code, ordinances, and other laws and policies as specifically delegated by the chief building official, fire chief, and the Authority Having Jurisdiction.

Construction Code. Has the meaning ascribed in Section 1-2 of the City Code.

206.0

– D –

Design Flood Elevation. See Chapter 19 of the City Code for provisions regarding the flood plain. The elevation of the “design flood,” including wave height, relative to the datum specified on the community’s legally designated flood hazard map. In areas designated as Zone AO, the design flood elevation is the elevation of the highest existing grade of the building’s perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number is taken as being equal to 2 feet (610 mm).

Detached Boiler. Any class of boiler that remains in its original installed location and is permanently disconnected from its energy source (i.e. natural gas, electricity, etc.).

207.0

– E –

Electrical Code. The National Electrical Code promulgated by the National Fire Protection Association, as adopted by this jurisdiction. The City of Houston Electrical Code, as adopted and amended by this jurisdiction.

Energy Conservation Code. The City of Houston Residential Energy Conservation Code or the City of Houston Commercial Energy Conservation Code, both as adopted and amended by this jurisdiction.

208.0

– F –

Family. An individual or two or more persons related by blood or marriage or a group of not more than 10 persons (excluding live in personnel hired to assist the family) who need not be related by blood or marriage living together in a dwelling unit.

Fire Code. The fire code *The City of Houston Fire Code, as* adopted by this jurisdiction.

Fire Code Official. The jurisdiction's fire marshal, who is charged with the administration and enforcement of the *Fire Code*, or an authorized representative.

Flood Hazard Area. See Chapter 19 of the *City Code* for provisions regarding the flood plain. The greater of the following two areas:

- (1) ~~The area within a floodplain subject to a 1 percent or greater chance of flooding in any given year.~~
- (2) ~~The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.~~

212.0

– J –

Jurisdiction. The governmental unit that has adopted this code under due legislative authority.

215.0

– M –

Mechanical Integrity. The physical installation of products, systems, or equipment in accordance with their intended purpose and according to the manufacturer's specifications and manufacturer's installation instructions.

216.0

– N –

National Board Inspection Code. The manual for boiler and pressure vessel inspectors published by the *National Board of Boiler and Pressure Vessel Inspectors*.

Non-standard Boiler. A boiler that does not qualify as a standard boiler.

218.0

– P –

Plumbing Code. The ~~Uniform Plumbing Code promulgated by the International Association of Plumbing and Mechanical Officials,~~ *City of Houston Plumbing Code*, as adopted by this jurisdiction.

Portable Boiler. A boiler primarily designed and intended for temporary use by anyone at any location.

Repair (Boilers). The work necessary to restore a boiler or a pressure vessel to a good and sound operating condition, provided there is no deviation from the original design.

Residential Code. The *City of Houston Residential Code*, as adopted and amended by this jurisdiction.

Safety Appliances. Safety devices such as safety valves or safety relief valves (within the jurisdictional limits as prescribed by the Authority Having Jurisdiction) provided for the purposes of diminishing the danger of accidents.

Secondhand Boiler. A boiler for which both the location and ownership have changed.

Standard Boiler. A boiler that bears the Texas stamp, the ASME stamp, or the stamp of any jurisdiction that has adopted a standard of construction equivalent to that required by the State of Texas.

{EDITORIAL NOTE: ALL OTHER PORTIONS OF CHAPTER 2 REMAIN AS SET FORTH IN THE 2015 UMC.}

CHAPTER 3

GENERAL REGULATIONS

303.8 Equipment and Appliances on Roofs. Equipment and appliances on roofs shall be designed or enclosed so as to withstand climatic conditions in the area in which they are installed. Where enclosures are provided, each enclosure shall permit easy entry and movement, ~~shall be of reasonable height,~~ and shall have not less than a 30 inch (762 mm) clearance between the entire service access panel(s) of the equipment and appliance, and the wall of the enclosure. [NFPA 54:9.4.1.1]

303.8.4 Clearance. Equipment and appliances shall be installed on a well-drained surface of the roof. Not less than ~~6-10 feet (1829-3048 mm)~~ 3048 mm of clearance shall be between a part of the equipment and appliance and the edge of a roof or similar hazard, or rigidly fixed rails, guards, parapets, or other building structures not less than 42 inches (1067 mm) in height shall be provided on the exposed side. [NFPA 54:9.4.2.2]

303.10.1 Clearance Reduction. Reduced clearances to combustible construction for listed equipment and appliances shall comply with the listing and Table 303.10.1. Where permitted by the manufacturer, and not provided in this code, reduced clearances to combustible construction for unlisted equipment and appliances shall comply with Table 303.10.1. Unlisted equipment and appliances shall comply with Table 303.10.1.

304.1 General. Appliances shall be located with respect to building construction and other equipment so as to permit access to the appliance. ~~Sufficient c~~Clearance shall be maintained to permit cleaning of heating surfaces; the replacement of filters, blowers, motors, burners, controls, and vent connections; the lubrication of moving parts where necessary; the adjustment and cleaning of burners and pilots; and the proper functioning of explosion vents, where provided. For attic installation, the passageway and servicing area adjacent to the appliance shall be floored. [NFPA 54:9.2.1]

Unless otherwise specified, not less than 30 inches (762 mm) in depth, width, and height of working space shall be provided.

Exception: A platform shall not be required for unit heaters or room heaters.

304.3.1 Access. Buildings exceeding 15 feet (4572 mm) in height shall have ~~an inside~~ means of access to the roof in accordance with this section, unless other means acceptable to the Authority Having Jurisdiction are used. [NFPA 54:9.4.3.2]

304.3.1.1 Access Type. The inside means of access shall be a permanent, or foldaway inside stairway, or ladder, terminating in an enclosure, scuttle, or trap door. Such scuttles or trap doors shall be not less than 22 inches by 24 inches (559 mm by 610 mm) in size, shall open easily and safely under all conditions, especially snow; and shall be constructed so as to permit access from the roof side unless deliberately locked on the inside.

Not less than ~~6-10~~ feet (~~1829 3048~~ mm) of clearance shall be between the access opening and the edge of the roof or similar hazard, or rigidly fixed rails or guards not less than 42 inches (1067 mm) in height shall be provided on the exposed side. Where parapets or other building structures are utilized in lieu of guards or rails, they shall be not less than 42 inches (1067 mm) in height. [NFPA 54:9.4.3.3]

304.4 Appliances in Attics and Under-Floor Spaces. An attic or under-floor space in which an appliance is installed shall be accessible through an opening and passageway not less than the largest component of the appliance, ~~and or~~ not less than 22 inches by 30 inches (559 mm by 762 mm) ~~whichever is more restrictive.~~ Where an appliance is located within the attic a pull down stair shall be provided that is not less than 22 inches (559 mm) in width at its narrowest point with a load capacity of not less than 350 pounds.

305.2 Flood Hazard Areas. See Chapter 19 of the City Code. ~~For buildings located in flood hazard areas, heating, ventilating, air-conditioning, refrigeration, miscellaneous heat-producing, and energy-utilizing equipment and appliances shall be elevated at or above the elevation in accordance with the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher.~~

Exception: ~~Equipment and appliances shall be permitted to be located below the elevation in accordance with the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher, provided that the systems are designed and installed to prevent water from entering or accumulating within their components and the systems are constructed to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to such elevation.~~

305.2.1 Coastal High Hazard Areas. ~~Mechanical systems in buildings located in coastal high hazard areas shall be in accordance with the requirements of Section 305.2, and mechanical systems, pipes, and appurtenances shall not be mounted on or penetrate through walls that are intended to breakaway under flood loads in accordance with the building code.~~

305.2.2 Air Exhaust and Intake Openings. ~~Outside air exhaust openings and air intake openings shall be located at or above the elevation required by the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher.~~

310.2 Condensate Control. Where an equipment or appliance is installed in a space where damage is capable of resulting from condensate overflow, ~~other than damage to replaceable lay-in ceiling tiles,~~ a secondary drain line shall be provided and shall be drained to a readily observed location in accordance with Section 310.1. An additional protection method for condensate overflow shall be provided in accordance with one of the following:

{EDITORIAL NOTE: THE REMAINDER OF THIS SECTION REMAINS AS SET FORTH IN THE 2015 UMC.}

310.3.2 Insulation. Primary drain piping inside buildings shall be insulated for the first 15 feet (4572 mm) horizontally from the drain pan. The insulation shall be a minimum of ½ inch (12.7 mm) in thickness.

CHAPTER 4

VENTILATION AIR

TABLE 402.1
MINIMUM VENTILATION RATES IN BREATHING ZONE^{1, 2, 4}
[ASHRAE 62.1: TABLE 6.2.2.1]

OCCUPANCY CATEGORY ⁴	PEOPLE OUTDOOR Air Rate R_p (cfm/person)	AREA OUTDOOR Air Rate R_A (cfm/ft ²)	DEFAULT OCCUPANT Density ³ (people/1000 ft ²)	AIR CLASS
CORRECTIONAL FACILITIES				
Booking/waiting	7.5	0.06	50	2
Cell	5	0.12	25	2
Day room	5	0.06	30	1
Guard stations	5	0.06	15	1
DRY CLEANERS / LAUNDRIES				
Coin-operated dry cleaner	15	—	20	
Coin-operated laundries	7.5	0.12	20	2
Commercial dry cleaner	30	0.06	30	
Commercial laundry	25	—	10	
Storage, pick up	7.5	0.12	30	
EDUCATIONAL FACILITIES				
Art classroom	10	0.18	20	2
Classrooms (ages 5-8)	10	0.12	25	1
Classrooms (age 9 plus)	10	0.12	35	1
Computer lab	10	0.12	25	1
Daycare (through age 4)	10	0.18	25	2
Daycare sickroom	10	0.18	25	3
Lecture classroom	7.5	0.06	65	1
Lecture hall (fixed seats)	7.5	0.06	150	1
Media center ^a	10	0.12	25	1
Multi-use assembly	7.5	0.06	100	1
Music/theater/dance	10	0.06	35	1
Science laboratories ^e	10	0.18	25	2
University/college laboratories	10	0.18	25	2
Wood/metal shop	10	0.18	20	2
FOOD AND BEVERAGE SERVICE				
Bars, cocktail lounges	7.5	0.18	100	2
Cafeteria/fast food dining	7.5	0.18	100	2

OCCUPANCY CATEGORY ⁴	PEOPLE OUTDOOR Air Rate R _P (cfm/person)	AREA OUTDOOR Air Rate R _A (cfm/ft ²)	DEFAULT OCCUPANT Density ³ (people/1000 ft ²)	AIR CLASS
Kitchen (cooking) ⁱ	7.5	0.12	20	2
Restaurant dining rooms	7.5	0.18	70	2
GENERAL				
Break rooms	5	0.06	25	1
Coffee stations	5	0.06	20	1
Conference/meeting	5	0.06	50	1
Corridors	—	0.06	—	1
Occupiable storage rooms for liquids or gels ^b	5	0.12	2	2
HOSPITALS, NURSING AND CONVALESCENT HOMES				
Autopsy rooms	—	0.5	20	
Medical procedure rooms	15	—	20	
Operating rooms	30	—	20	
Patient rooms	25	—	10	
Physical therapy	15	—	20	
Recovery and ICU	15	—	20	
HOTELS, MOTELS, RESORTS, DORMITORIES				
Barracks sleeping areas	5	0.06	20	1
Bedroom/living room	5	0.06	10	1
Dormitory sleeping areas	5	0.06	—	
Gambling casinos	7.5	0.16	—	
Laundry rooms, central	5	0.12	10	2
Laundry rooms within dwelling units	5	0.12	10	1
Lobbies/pre-function	7.5	0.06	30	1
Multipurpose assembly	5	0.06	120	1
OFFICE BUILDINGS				
Breakrooms	5	0.12	50	1
Main entry lobbies	5	0.06	10	1
Occupiable storage rooms for dry materials	5	0.06	2	1
Office space	5	0.06	5	1
Reception areas	5	0.06	30	1
Telephone/data entry	5	0.06	60	1
MISCELLANEOUS SPACES				
Bank or bank lobbies	7.5	0.06	15	1
Bank vaults/safe deposit	5	0.06	5	2
Computer (not printing)	5	0.06	4	1
Freezer and refrigerated spaces (<50°F) ^e	10	—	—	2
General manufacturing	10	0.18	7	3

OCCUPANCY CATEGORY ⁴	PEOPLE OUTDOOR Air Rate R _P (cfm/person)	AREA OUTDOOR Air Rate R _A (cfm/ft ²)	DEFAULT OCCUPANT Density ³ (people/1000 ft ²)	AIR CLASS
(excludes heavy industrial and processes using chemicals)				
Pharmacy (prep. area)	5	0.18	10	2
Photo studios	5	0.12	10	1
Shipping/receiving ^b	10	0.12	2	2
Sorting, packing, light assembly	7.5	0.12	7	2
Telephone closets	—	—	—	1
Transportation waiting	7.5	0.06	100	1
Warehouses ^b	10	0.06	—	2
PUBLIC ASSEMBLY SPACES				
Auditorium seating area	5	0.06	150	1
Courtrooms	5	0.06	70	1
Legislative chambers	5	0.06	50	1
Libraries	5	0.12	10	1
Lobbies	5	0.06	150	1
Museums (children's)	7.5	0.12	40	1
Museums/galleries	7.5	0.06	40	1
Places of religious worship	5	0.06	120	1
RESIDENTIAL				
Common corridors	—	0.06	—	1
Dwelling unit ^{f, g}	5	0.06	See footnote ^f	1
RETAIL				
Sales (except as below)	7.5	0.12	15	2
Barber shop	7.5	0.06	25	2
Beauty and nail salons ^h	20-25	0.12-0.25	25	2
Coin-operated laundries	7.5	0.12	20	2
Mall common areas	7.5	0.06	40	1
Pet shops (animal areas)	7.5	0.18	10	2
Supermarket	7.5	0.06	8	1
SPORTS AND ENTERTAINMENT				
Bowling alley (seating)	10	0.12	40	1
Disco/dance floors	20	0.06	100	2
Gambling casinos	7.5	0.18	120	1

OCCUPANCY CATEGORY ⁴	PEOPLE OUTDOOR Air Rate R _P (cfm/person)	AREA OUTDOOR Air Rate R _A (cfm/ft ²)	DEFAULT OCCUPANT Density ³ (people/1000 ft ²)	AIR CLASS
Game arcades	7.5	0.18	20	1
Gym, sports arena (play area) ^e	20	0.18	7	2
Health club/aerobics room	20	0.06	40	2
Health club/weight rooms	20	0.06	10	2
Spectator areas	7.5	0.06	150	1
Stages, studios ^d	10	0.06	70	1
Swimming (pool & deck) ^c	—	0.48	—	2

For SI units: 1 cubic foot per minute = 0.0283 m³/min, 1 square foot = 0.0929 m²

Notes:

- 1 This table applies to no-smoking areas. Rates for smoking-permitted spaces shall must be determined using other methods.
- 2 Volumetric airflow rates are based on an air density of 0.075 pounds of dry air per cubic foot (lb_{da}/ft³) (1.201 kg_{da}/m³), which corresponds to dry air at a barometric pressure of 1 atm (101 kPa) and an air temperature of 70°F (21°C). Rates shall be permitted to be adjusted for actual density but such adjustment is not required for compliance with this chapter.
- 3 The default occupant density shall be used where actual occupant density is not known.
- 4 Where the occupancy category for a proposed space or zone is not listed, the requirements for the listed occupancy category that is most similar in terms of occupant density, activities, and building construction shall be used.

ITEM-SPECIFIC NOTES FOR TABLE 402.1

- a For high school and college libraries, use values shown for Public Assembly Spaces – Libraries.
- b Rate is capable of not being sufficient where stored materials include those having potentially harmful emissions.
- c Rate does not allow for humidity control. Additional ventilation or dehumidification shall be permitted to be required to remove moisture. "Deck area" refers to the area surrounding the pool that would be expected to be wetted during normal pool use, i.e., where the pool is occupied. Deck area that is not expected to be wetted shall be designated as a space type (for example, "spectator area").
- d Rate does not include special exhaust for stage effects, e.g., dry ice vapors, smoke.
- e Where combustion equipment is intended to be used on the playing surface or in the space, additional dilution ventilation, source control, or both shall be provided.
- f Default occupancy for dwelling units shall be two persons for studio and one-bedroom units, with one additional person for each additional bedroom.
- g Air from one residential dwelling shall not be recirculated or transferred to other space outside of that dwelling.
- h Provide minimum 80% outdoor makeup air to air conditioning system through fixed openings.
- i Where the hood is eliminated for enclosed single batch low temperature chemical dishwashers, the ventilation shall be designed by a licensed design professional to accommodate the latent and sensible heat load emitted from such appliances.

TABLE 403.7
MINIMUM EXHAUST RATES
[ASHRAE 62.1: TABLE 6.5]

OCCUPANCY CATEGORY ⁴	EXHAUST RATE (cfm/unit)	EXHAUST RATE (cfm/ft ²)	AIR CLASS
Arenas ²	–	0.50	1
Art classrooms	–	0.70	2
Auto repair rooms ¹	–	1.50	2
Barber shops	–	0.50	2
Beauty and nail salons	–	0.60	2
Cells with toilet	–	1.00	2
Copy, printing rooms	–	0.50	2
Darkrooms	–	1.00	2
Educational science laboratories	–	1.00	2
Janitor closets, trash rooms, recycling	–	1.00	3
Kitchens – commercial	–	0.70	2
Kitchenettes	–	0.30	2
Locker rooms	–	0.50	2
Locker/dressing rooms	–	0.25	2
Paint spray booths	–	–	4
Parking garages ³	–	0.75	2
Pet shops (animal areas)	–	0.90	2
Refrigerating machinery rooms ⁶	–	–	3
Residential – kitchens ⁷	2550/100	–	2
Soiled laundry storage rooms	–	1.00	3
Storage rooms, chemical	–	1.50	4
Toilets – private ^{5, 9}	2025/50	–	2
Toilets – public ^{4, 9}	50/70	–	2
Woodwork shop/classrooms	–	0.50	2

For SI units: 1 cubic foot per minute = 0.0283 m³/min, 1 square foot = 0.0929 m²

Notes:

- 1 Stands where engines are run shall have exhaust systems that directly connect to the engine exhaust and prevent escape of fumes.
- 2 Where combustion equipment is intended to be used on the playing surface, additional dilution ventilation, source control, or both shall be provided.
- 3 Exhaust rate is not required for open parking garages as defined in accordance with the building code.
- 4 Rate is per water closet, urinal, or both. Provide the higher rate where periods of heavy use are expected to occur, e.g., toilets in theatres, schools, and sports facilities. Otherwise the lower rate shall be permitted to be used.
- 5 Rate is for a toilet room intended to be occupied by one person at a time. For continuous system operation during normal hours of use, the lower rate shall be permitted to be used. Otherwise the lower rate shall be permitted to be used.
- 6 For refrigeration machinery rooms, the exhaust rate shall comply with Chapter 11.
- 7 For continuous system operation, the lower rates shall be permitted. Otherwise the higher rate shall be used.
- 8 For unlisted occupancies for a proposed space not listed in the table, the requirements for the listed occupancy that is most similar in terms of occupant density and occupancy type shall be used.
- 9 Exhaust air that has been cleaned in accordance with the criteria of Class 1 shall be permitted to be recirculated.

405.0 Smoke Control Systems.

405.1 Scope and Purpose. This section applies to mechanical and passive smoke control systems that are required by the *Building Code* or the *Fire Code*. The purpose of this section is

to establish minimum requirements for the design, installation and acceptance testing of smoke control systems that are intended to provide a tenable environment for the evacuation or relocation of occupants. These provisions are not intended for the preservation of contents, the timely restoration of operations or for assistance in fire suppression or overhaul activities. Smoke control systems regulated by this section serve a different purpose than the smoke- and heat-venting provisions in Section 910 of the *Building Code* or the *Fire Code*.

405.2 General Design Requirements. Buildings, structures, or parts thereof required by the *Building Code* or the *Fire Code* to have a smoke control system or systems shall have such systems designed in accordance with the applicable requirements of Section 909 of the *Building Code* and the generally accepted and well-established principles of engineering relevant to the design. The construction documents shall include sufficient information and detail to adequately describe the elements of the design necessary for the proper implementation of the smoke control systems. These documents shall be accompanied by sufficient information and analysis to demonstrate compliance with these provisions.

405.3 Special Inspection and Test Requirements. In addition to the ordinary inspection and test requirements that buildings, structures and parts thereof are required to undergo, smoke control systems subject to the provisions of Section 909 of the *Building Code* shall undergo special inspections and acceptance testing by a Houston registered special inspector, sufficient to verify the proper commissioning of the smoke control design in its final installed condition. The design submission accompanying the construction documents shall clearly detail procedures and methods to be used and the items subject to such inspections and tests. Such commissioning shall be in accordance with generally accepted engineering practice and, where possible, based on published standards for the particular testing involved. The special inspections and tests required by this section shall be conducted under the same terms as found in Section 1704 of the *Building Code*.

405.4 Analysis. A rational analysis supporting the types of smoke control systems to be employed, their methods of operation, the systems supporting them and the methods of construction to be utilized shall accompany the submitted construction documents and shall include, but not be limited to, the items indicated in Sections 405.4.1 through 405.4.7.

405.4.1 Stack Effect. The system shall be designed such that the maximum probable normal or reverse stack effects will not adversely interfere with the system's capabilities. In determining the maximum probable stack effect, altitude, elevation, weather history and interior temperatures shall be used.

405.4.2 Temperature Effect of Fire. Buoyancy and expansion caused by the design fire in accordance with Section 405.9 shall be analyzed. The system shall be designed such that these effects do not adversely interfere with the system's capabilities.

405.4.3 Wind Effect. The design shall consider the adverse effects of wind. Such consideration shall be consistent with the wind-loading provisions of the *Building Code*.

405.4.4 HVAC Systems. The design shall consider the effects of the heating, ventilating and air-conditioning (HVAC) systems on both smoke and fire transport. The analysis shall include all permutations of systems' status. The design shall consider the effects of fire on the HVAC systems.

405.4.5 Climate. The design shall consider the effects of low temperatures on systems, property and occupants. Air inlets and exhausts shall be located so as to prevent snow or ice blockage.

405.4.6 Duration of Operation. All portions of active or engineered smoke control systems shall be capable of continued operation after detection of the fire event for a period of not less than either 20 minutes or 1.5 times the calculated egress time, whichever is greater.

405.4.7 Smoke Control System Interaction. The design shall consider the interaction effects of the operation of multiple smoke control systems for all design scenarios.

405.5 Smoke Barrier Construction. Smoke barriers required for passive smoke control and a smoke control system using the pressurization method shall comply with the *Building Code*. Smoke barriers shall be constructed and sealed to limit leakage areas exclusive of protected openings. The maximum allowable leakage area shall be the aggregate area calculated using the following leakage area ratios:

(1) Walls:

$$\underline{A/A_W} = 0.00100$$

(2) Interior exit stairways and ramps and exit passageways:

$$\underline{A/A_W} = 0.00035$$

(3) Enclosed exit access stairways and ramps and all other shafts:

$$\underline{A/A_W} = 0.00150$$

(4) Floors and roofs:

$$\underline{A/A_F} = 0.00050$$

Where:

A = Total leakage area, square feet (m²).

A_F = Unit floor or roof area of barrier, square feet (m²).

A_W = Unit wall area of barrier, square feet (m²).

The leakage area ratios shown do not include openings created by gaps around doors and operable windows. The total leakage area of the smoke barrier shall be determined in accordance with Section 405.5.1 and tested in accordance with Section 405.5.2.

405.5.1 Total Leakage Area. Total leakage area of the barrier is the product of the smoke barrier gross area times the allowable leakage area ratio, plus the area of other openings such as gaps around doors and operable windows.

405.5.2 Testing of Leakage Area. Compliance with the maximum total leakage area shall be determined by achieving the minimum air pressure difference across the barrier with the system in the smoke control mode for mechanical smoke control systems utilizing the pressurization method. Compliance with the maximum total leakage area of passive smoke control systems shall be verified through methods such as door fan testing or other methods, as approved by the fire code official.

405.5.3 Opening Protection. Openings in smoke barriers shall be protected by automatic-closing devices actuated by the required controls for the mechanical smoke control system. Door openings shall be protected by door assemblies complying with the requirements of the *Building Code* for doors in smoke barriers.

Exceptions:

- (1) Passive smoke control systems with automatic-closing devices actuated by spot-type smoke detectors listed for releasing service installed in accordance with the *Building Code*.
- (2) Fixed openings between smoke zones that are protected utilizing the airflow method.
- (3) In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 405.5.3.1, the doors shall not be required to be protected in accordance with Section 716 of the *Building Code*. The doors shall be close-fitting within operational tolerances and shall not have a center mullion or undercuts in excess of ¾ inch (19.1 mm), louvers or grilles. The doors shall have head and jamb stops and astragals or rabbets at meeting edges and, where permitted by the door manufacturer's listing, positive-latching devices are not required.
- (4) In Group I-2 and ambulatory care facilities, where such doors are special-purpose horizontal sliding, accordion or folding door assemblies installed in accordance with Section 1010.1.4.3 of the *Building Code* and are automatic closing by smoke detection in accordance with Section 716.5.9.3 of the *Building Code*.
- (5) Group I-3.
- (6) Openings between smoke zones with clear ceiling heights of 14 feet (4267 mm) or greater and bank down capacity of greater than 20 minutes as determined by the design fire size.

405.5.3.1 Group I-1 Condition 2; Group I-2 and Ambulatory Care Facilities. In Group I-1 Condition 2; Group I-2 and ambulatory care facilities, where doors are installed across a corridor, the doors shall be automatic closing by smoke detection in accordance with Section 716.5.9.3 of the *Building Code* and shall have a vision panel with fire-protection-rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested.

405.5.3.2 Ducts and Air Transfer Openings. Ducts and air transfer openings are required to be protected with a minimum Class II, 250°F (121°C) smoke damper complying with the *Building Code*.

405.6 Pressurization Method. The primary mechanical means of controlling smoke shall be by pressure differences across smoke barriers. Maintenance of a tenable environment is not required in the smoke control zone of fire origin.

405.6.1 Minimum Pressure Difference. The minimum pressure difference across a smoke barrier shall be 0.05-inch water gage (12.4 Pa) in fully sprinklered buildings. In building permitted to be other than fully sprinklered, the smoke control system shall be designed to achieve pressure differences not less than two times the maximum calculated pressure difference produced by the design fire.

405.6.2 Maximum Pressure Difference. The maximum air pressure difference across a smoke barrier shall be determined by required door-opening or closing forces. The actual force required to open exit doors when the system is in the smoke control mode shall be in accordance with the *Building Code*. Opening and closing forces for other doors shall be determined by standard engineering methods for the resolution of forces and reactions. The calculated force to set a side-hinged, swinging door in motion shall be determined by:

$$F = F_{dc} + K(WA\Delta P)/2(W-d)$$

Where:

A = Door area, square feet (m²).

d = Distance from door handle to latch edge of door, feet (m).

F = Total door opening force, pounds (N).

F_{dc} = Force required to overcome closing device, pounds (N).

K = Coefficient 5.2 (1.0).

W = Door width, feet (m).

ΔP = Design pressure difference, inches of water gage (Pa).

405.6.3 Pressurized Stairways and Elevator Hoistways. Where stairways or elevator hoistways are pressurized, such pressurization systems shall comply with Section 405 as smoke control systems, in addition to the requirements of Section 909.20 of the *Building Code* and 909.21 of the *Fire Code*.

405.7 Airflow Design Method. Where approved by the code official, smoke migration through openings fixed in a permanently open position, which are located between smoke control zones by the use of the airflow method, shall be permitted. The design airflow shall be in accordance with this section. Airflow shall be directed to limit smoke migration from the fire zone. The geometry of openings shall be considered to prevent flow reversal from turbulent effects. Smoke control systems using the airflow method shall be designed in accordance with NFPA 92.

405.7.1 Prohibited Conditions. This airflow design method shall not be employed where either the quantity of air or the velocity of the airflow will adversely affect other portions of the smoke control system, unduly intensify the fire, disrupt plume dynamics or interfere with building occupants exiting. Airflow toward the design fire shall not exceed 200 feet per minute (1.02 m/s). Where the calculated airflow exceeds this limit, the airflow method shall not be used.

405.8 Exhaust Method. Where approved by the building official, mechanical smoke control for large enclosed volumes, such as in atriums or malls, shall be permitted to utilize the exhaust method. Smoke control systems using the exhaust method shall be designed in accordance with NFPA 92.

405.8.1 Exhaust Rate. The height of the lowest horizontal surface of the accumulating smoke layer shall be maintained not less than 6 feet (1829 mm) above any walking surface that forms a portion of a required egress system within the smoke zone.

405.9 Design Fire. The design fire shall be based on a rational analysis performed by the registered design professional and approved by the code official. The design fire shall be based on the analysis in accordance with Section 405.4 and this section.

405.9.1 Factors Considered. The engineering analysis shall include the characteristics of the fuel, fuel load, effects included by the fire and whether the fire is likely to be steady or unsteady.

405.9.2 Design Fire Fuel. Determination of the design fire shall include consideration of the type of fuel, fuel spacing and configuration.

405.9.3 Heat-Release Assumptions. The analysis shall make use of the best available data from approved sources and shall not be based on excessively stringent limitations of combustible material.

405.9.4 Sprinkler Effectiveness Assumptions. A documented engineering analysis shall be provided for conditions that assume fire growth is halted at the time of sprinkler activation.

405.10 Equipment. Equipment, such as, but not limited to, fans, ducts, automatic dampers and balance dampers, shall be suitable for its intended use, suitable for the probable exposure temperatures that the rational analysis indicates and as approved by the code official.

405.10.1 Exhaust Fans. Components of exhaust fans shall be rated and certified by the manufacturer for the probable temperature rise to which the components will be exposed. This temperature rise shall be computed by:

$$T_s = (Q_c/mc) + (T_a)$$

Where:

c = Specific heat of smoke at smoke-layer temperature, BTU/lb°F (kJ/kg • K).

m = Exhaust rate, pounds per second (kg/s).

Q_c = Convective heat output of fire, Btu/s (kW).

T_a = Ambient temperature, °F (K).

T_s = Smoke temperature, °F (K).

Exception: Reduced T_s as calculated based on the assurance of adequate dilution air.

405.10.2 Ducts. Duct materials and joints shall be capable of withstanding the probable temperatures and pressures to which they are exposed as determined in accordance with Section 405.10.1. Ducts shall be constructed and supported in accordance with Chapter 6. Ducts shall be leak tested to 1.5 times the maximum design pressure in accordance with nationally accepted practices. Measured leakage shall not exceed 5 percent of design flow. Results of such testing shall be a part of the documentation procedure. Ducts shall be supported directly from fire-resistance-rated structural elements of the building by substantial, noncombustible supports.

Exception: Flexible connections, for the purpose of vibration isolation, that are constructed of approved fire-resistance-rated materials are exempt from 405.10.2.

405.10.3 Equipment, Inlets and Outlets. Equipment shall be located so as to not expose uninvolved portions of the building to an additional fire hazard. Outdoor air inlets shall be located so as to minimize the potential for introducing smoke or flame into the building. Exhaust outlets shall be so located as to minimize reintroduction of smoke into the building and to limit exposure of the building or adjacent buildings to an additional fire hazard.

405.10.4 Automatic Dampers. Automatic dampers, regardless of the purpose for which they are installed within the smoke control system, shall be listed and conform to the requirements of approved, recognized standards.

405.10.5 Fans. In addition to other requirements, belt-driven fans shall have 1.5 times the number of belts required for the design duty, with the minimum number of belts being two. Fans shall be selected for stable performance based on normal temperature and, where applicable, elevated temperature. Calculations and manufacturer's fan curves shall be part

of the documentation procedures. Fans shall be supported and restrained by noncombustible devices in accordance with the structural design requirements of the *Building Code*. Motors driving fans shall operate within the limits specified on their nameplate horsepower (kilowatts), as determined from measurement of actual current draw. Motors driving fans shall have a minimum service factor of 1.15.

405.11 Standby Power. The smoke control system shall be supplied with standby power in accordance with Section 2702 of the *Building Code*.

405.11.1 Equipment Room. The standby power source and its transfer switches shall be in a room separate from the normal power transformers and switch gears and ventilated directly to and from the exterior. The room shall be enclosed with not less than 1-hour fire-resistance-rated fire barriers constructed in accordance with Section 707 of the *Building Code* or horizontal assemblies constructed in accordance with Section 711 of the *Building Code*, or both. Power distribution from the two sources shall be by independent routes.

405.11.2 Power Sources and Power Surges. Elements of the smoke control system relying on volatile memories or the like shall be supplied with uninterruptible power sources of sufficient duration to span 15-minute primary power interruption. Elements of the smoke control system susceptible to power surges shall be suitable protected by conditioners, suppressors or other approved means.

405.12 Detection and Control Systems. Fire detection systems providing control input or output signals to mechanical smoke control systems or elements thereof shall comply with the requirements of Section 907 of the *Building Code*. Such systems shall be equipped with a control unit complying with UL 864 and listed as smoke control equipment.

405.12.1 Verification. Control systems for mechanical smoke control systems shall include provisions for verification. Verification shall include positive confirmation of actuation, testing, manual override and the presence of power downstream of all disconnects. A preprogrammed weekly test sequence shall report abnormal conditions audibly, visually and by printed report. The preprogrammed weekly test shall operate all devices, equipment and components used for smoke control.

Exception: Where verification of individual components tested through the preprogrammed weekly testing sequence will interfere with, and produce unwanted effects to, normal building operation, such individual components are permitted to be bypassed from the preprogrammed weekly testing, where approved by the building official and in accordance with both of the following:

- (1) Where the operation of components is bypassed from the preprogrammed weekly test, a listed control unit shall verify weekly the presence of power downstream of all disconnects.
- (2) Testing of all components bypassed from the preprogrammed weekly test shall be in accordance with Section 909.20.6 of the *Fire Code*.

405.12.2 Wiring. In addition to meeting the requirements of the *Electrical Code*, mechanical smoke control, wiring, regardless of voltage, shall be fully enclosed within continuous raceways. The requirement of this section shall apply only to wiring extending from the fire alarm system control unit that activates any required smoke-control system component such as relays, fans, dampers, or stair pressurization systems.

405.12.3 Activation. Smoke control systems shall be activated in accordance with the *Building Code* or the *Fire Code*.

405.12.4 Automatic Control. Where complete automatic control is required or used, the automatic control sequences shall be initiated from an appropriately zoned automatic sprinkler system complying with Section 903.3.1.1 of the *Fire Code*, from manual controls that are readily accessible to the fire department, and any smoke detectors required by engineering analysis.

405.13 Control-Air Tubing. Control-air tubing shall be of sufficient size to meet the required response times specified by the design professional or *Fire Code*, whichever is more restrictive. Tubing shall be flushed clean and dry prior to final connections. Tubing shall be adequately supported and protected from damage. Tubing passing through concrete or masonry shall be sleeved and protected from abrasion and electrolytic action.

405.13.1 Materials. Control-air tubing shall be hard-drawn copper, Type L, ACR in accordance with ASTM B 42, ASTM B 43, ASTM B 68, ASTM B 88, ASTM B 251 and ASTM B 280. Fittings shall be wrought copper or brass, solder type in accordance with ASME B 16.18 or ASME B 16.22. Changes in direction shall be made with appropriate tool bends. Brass compression-type fittings shall be used at final connection to devices; other joints shall be brazed using a BCuP-5 brazing alloy with solidus above 1,100°F (593°C) and liquids below 1,500°F (816°C). Brazing flux shall be used on copper-to-brass joints only.

Exception: Nonmetallic tubing used within control panels and at the final connection to devices are exempted from 405.13.1, provided all of the following conditions are met:

- (1)** Tubing shall comply with the requirements of Section 602.2.3.
- (2)** Tubing and connected devices shall be completely enclosed within a galvanized or paint-grade steel enclosure having a minimum thickness of 0.0296 inch (0.7534 mm) (No. 22 gage). Entry to the enclosure shall be by copper tubing with a protective grommet of Neoprene or Teflon or by suitable brass compression to male barbed adapter.
- (3)** Tubing shall be identified by appropriately documented coding.
- (4)** Tubing shall be neatly tied and supported within the enclosure. Tubing bridging cabinets and doors or moveable devices shall be of sufficient length to avoid tension and excessive stress. Tubing shall be protected against abrasion. Tubing serving devices on doors shall be fastened along hinges.

405.13.2 Isolation from Other Functions. Control tubing serving other than smoke control functions shall be isolated by automatic isolation valves or shall be an independent system.

405.13.3 Testing. Control-air tubing shall be tested at three times the operating pressure for not less than 30 minutes without any noticeable loss in gauge pressure prior to final connection to devices.

405.14 Marking and Identification. The detection and control systems shall be clearly marked at all junctions, accesses and terminations.

405.15 Control Diagrams. Identical control diagrams shall be provided and maintained as required by the *Fire Code*.

405.16 Fire Fighter's Smoke Control Panel. A fire fighter's smoke control panel for fire department emergency response purposes only shall be provided in accordance with the *Fire Code*.

405.17 System Response Time. Smoke control system activation shall comply with the *Fire Code*.

405.18 Acceptance Testing. Devices, equipment, components and sequences shall be tested in accordance with Section 405.3 of this code and the *Fire Code*.

405.19 System Acceptance. Authority Having Jurisdiction acceptance of the smoke control system shall be based on special inspections documenting compliance with the provisions of this code and the *Fire Code*.

CHAPTER 5

EXHAUST SYSTEMS

504.4 Clothes Dryers. A clothes dryer exhaust duct shall not be connected to a vent connector, gas vent, chimney, and shall not terminate into a crawl space, attic, or other concealed space. Exhaust ducts shall not be assembled with screws or other fastening means that extend into the duct and that are capable of catching lint, and that reduce the efficiency of the exhaust system. Exhaust ducts shall be constructed of rigid metallic material. Transition ducts used to connect the dryer to the exhaust duct shall be listed for that application or installed in accordance with the clothes dryer manufacturer's installation instructions. Clothes dryer exhaust ducts shall terminate to the outside of the building in accordance with Section 502.2.1 and shall be equipped with a backdraft damper. Screens shall not be installed at the duct termination. Devices, such as fire or smoke dampers, that will obstruct the flow of the exhaust shall not be used. Where ducts are joined, the male end shall be inserted in the direction of airflow.

504.4.2.1 Length Limitation. Unless otherwise permitted or required by the dryer manufacturer's instructions and approved by the Authority Having Jurisdiction, domestic dryer moisture exhaust ducts shall not exceed a total combined horizontal and vertical length of 44 35 feet (4267-10,668 mm), including two 90 degree (1.57 rad) elbows. A length of 2 feet (610 mm) shall be deducted for each 90 degree (1.57 rad) elbow in excess of two. Where the exhaust duct is concealed within the building construction and exceeds the length limitation of this section, a permanent label or tag shall be located within 6 feet (1,829 mm) of the exhaust duct connection identifying the length of the exhaust duct.

504.6 Gypsum Wallboard Ducts. Bathroom and laundry room exhaust ducts, and other environmental air ducts shall not be permitted to be constructed of gypsum wallboard subject to the limitations of Section 602.5.

508.1 Where Required. Type I hoods shall be installed at or above commercial-type deep-fat fryers, broilers, grills, hot-top ranges, ovens, barbecues, rotisseries, and similar equipment that emits comparable amounts of smoke or grease in a food-processing establishment. For the purpose of this section, a food-processing establishment shall include a building or portion thereof used for the processing of food, but shall not include a dwelling unit. Type II hoods shall be installed above equipment and dishwashers that generate steam, heat, and products of combustion, and where grease or smoke is not present.

Exceptions:

- (1) Cooking appliance that is in accordance with UL 710B for reduced emissions where the grease discharge does not exceed 2.9 E-09 ounces per cubic inch (oz/in³) (5.0 E-06 kg/m³) where operated with a total airflow of 500 cubic feet per minute (cfm) (0.236 m³/s).
- (2) Recirculating systems listed in accordance with UL 710B and installed in accordance with Section 516.0.
- (3) Dishwashing machines connected to a Type II duct system and exhausted directly to the outdoors.

- (4) Dishwashing machines with a self-contained condensing system listed in accordance with UL 921 and installed in a space where the HVAC system has been engineered to accommodate the latent and sensible heat load emitted from such appliances as approved by the Authority Having Jurisdiction. Such equipment shall be provided with an interlocking device to prevent opening of the appliance prior to completion of its cycle.
- (5) Residential cooking equipment located in daycare facilities, churches, employee lunchrooms, or similar locations that are no more hazardous than kitchen facilities in an individual dwelling unit.
- (6) Listed convection ovens.

510.1.7 Type II Exhaust Duct Systems. Ducts and plenums serving Type II hoods shall be constructed of rigid metallic materials in accordance with Chapter 6. Duct bracing and supports shall comply with Chapter 6. Ducts subject to positive pressure and ducts conveying moisture-laden or waste-heat-laden air shall be adequately sealed.

510.9.1 Rooftop Terminations. Rooftop terminations shall be arranged with or provided with the following:

- (1) Not less than 10 feet (3,048 mm) of horizontal clearance from the outlet to adjacent buildings, property lines, and air intakes.

Exception: Exhaust outlets for grease ducts serving commercial food heat-processing equipment may terminate not less than 5 feet (1,524 mm) from an adjacent building, adjacent property line or air intake opening into a building if the air from the exhaust outlet is discharged away from such locations.

{EDITORIAL NOTE: THE REMAINDER OF THIS SECTION REMAINS AS SET FORTH IN THE 2015 UMC.}

513.1 General. Fire-extinguishing equipment for the protection of grease removal devices, hood exhaust plenums, and exhaust duct systems shall be provided in accordance with this section or the *Fire Code*, whichever is most restrictive. [NFPA 96:10.1.1]

CHAPTER 6

DUCT SYSTEMS

602.5 Gypsum. Where gypsum products are exposed in return air ducts or plenums, the air temperature shall be restricted to a range from 50°F (10°C) to 125°F (52°C), and moisture content shall be controlled so that the material is not adversely affected. For the purpose of this section, gypsum products shall not be exposed in ducts serving as supply from evaporative coolers, and in other air-handling systems regulated by this chapter where the temperature of the gypsum product will be below the dew point temperature, and exhaust systems complying with the requirements of Chapter 5.

603.11 Cross Contamination. Hazardous or product-conveying exhaust ~~Exhaust~~ ducts and venting systems under positive pressure shall not extend into or pass through ducts or plenums.

603.12 Underground Installation. Ducts installed underground shall be approved for the installation and shall have a slope of not less than $\frac{1}{8}$ inch per foot (10.4 mm/m). Ducts, plenums, and fittings shall be permitted to be constructed of concrete, clay, or ceramics where installed in the ground or in a concrete slab, provided the joints are tightly sealed. Metal ducts where installed in or under a concrete slab shall be stainless steel or galvanized and encased in not less than 2 inches (51 mm) of concrete.

604.1 General. Air ducts conveying air at temperatures exceeding 140°F (60°C) shall be insulated to maintain an insulation surface temperature of not more than 140°F (60°C). Factory-made air ducts and insulations intended for installation on the exterior of ducts shall be legibly printed with the name of the manufacturer, the thermal resistance (R) value at installed thickness, flame-spread index and smoke developed index of the composite material. Internal duct liners and insulation shall be installed in accordance with the Energy Conservation Code ~~SMACNA HVAC Duct Construction Standards—Metal and Flexible.~~

Exceptions:

- (1) Factory-installed plenums, casings, or ductwork furnished as a part of HVAC equipment tested and rated in accordance with approved energy efficiency standards.
- (2) Ducts or plenums located in conditioned spaces where heat gain or heat loss will not increase energy use.
- (3) For runouts less than 10 feet (3,048 mm) in length to air terminals or air outlets, the rated R value of insulation need not exceed R-3.5.
- (4) The rated R value of required insulation on the b~~Backs~~ of air outlets and outlet plenums exposed to unconditioned or indirectly conditioned spaces with face areas exceeding 15 square feet (0.09295 m²) need not exceed R-2; those 15 square feet (0.09295 m²) or smaller need not be insulated.
- (5) Ducts and plenums used exclusively for evaporative cooling systems.

605.5 Access and Identification. Fire and smoke dampers shall be provided with an approved means of access large enough to allow inspection and maintenance of the damper and its

operating parts. The access shall not affect the integrity of the fire resistance-rated assembly. The access openings shall not reduce the fire resistance rating of the assembly.

Access shall not require the use of tools. Access doors in ducts shall be tight fitting and approved for the required duct construction. Access points shall be permanently identified visibly on the exterior of the duct and at the ceiling level by a label with letters not less than ½ of an inch (12.7 mm) in height reading as one of the following:

- (1) Smoke Damper
- (2) Fire Damper
- (3) Fire/Smoke Damper

Access doors shall be not more than 2 inches (51 mm) less than the size of the duct up to 24 inches (610 mm), and 24 inch by 24 inch (610 mm by 610 mm) in ducts of 28 inches (711 mm) dimension or larger.

608.1 Air-Moving Systems and Smoke Detectors. Air-moving systems supplying air in excess of ~~2000~~ 2,200 cubic feet per minute (ft³/min) (~~0.9439~~ 1.0382 m³/s) to enclosed spaces within buildings shall be equipped with an automatic shutoff. Automatic shutoff shall be accomplished by interrupting the power source of the air-moving equipment upon detection of smoke in the main supply-air duct or return-air duct served by such equipment. Duct smoke detectors shall comply with UL 268A and shall be installed in accordance with the manufacturer's installation instructions. Such devices shall be compatible with the operating velocities, pressures, temperatures, and humidities of the system. Where fire-detection or alarm systems are provided for the building, the smoke detectors shall be supervised by such systems in an approved manner.

Exceptions:

- (1) Where the space supplied by the air-moving equipment is served by a total coverage smoke-detection system in accordance with the fire code, interconnection to such system shall be permitted to be used to accomplish the required shutoff.
- (2) Automatic shutoff is not required where occupied rooms served by the air-handling equipment have direct exit to the exterior and the travel distance does not exceed 100 feet (30,480 mm). For the purpose of this exception, occupied rooms shall not include rooms that have less than 300 square feet (27.8709 square meters) and are ancillary to the function of the space served by the air-handling system, such as restrooms, storerooms, or cashier or manager offices.
- (3) Automatic shutoff is not required for Group R, Division 3 and Group U occupancies.
- (4) Automatic shutoff is not required for approved smoke-control systems or where analysis demonstrates shutoff would create a greater hazard, such as shall be permitted to be encountered in air-moving equipment supplying specialized portions of Group H Occupancies. Such equipment shall be required to have smoke detection with remote indication and manual shutoff capability at an approved location.
- (5) Smoke detectors that are factory installed in listed air-moving equipment shall be permitted to be used in lieu of smoke detectors installed in the main supply-air duct served by such equipment.

CHAPTER 9

INSTALLATION OF SPECIFIC APPLIANCES

904.4 Temperature- or Pressure-Limiting Devices. See Chapter 10 of this code. ~~Steam and hot water boilers, respectively, shall be provided with approved automatic limiting devices for shutting down the burner(s) to prevent boiler steam pressure or boiler water temperature from exceeding the maximum allowable working pressure or temperature. Safety limit controls shall not be used as operating controls. [NFPA 54:10.3.4]~~

904.5 Low-Water Cutoff. See Chapter 10 of this code. ~~Water boilers and steam boilers shall be provided with an automatic means to shut off the fuel supply to the burner(s) where the boiler water level drops to the lowest safe water line. In lieu of the low-water cutoff, water tube or coil-type boilers that require forced circulation to prevent overheating and failure shall have an approved flow sensing device arranged to shut down the boiler where the flow rate is not capable of protecting the boiler against overheating. [NFPA 54:10.3.5]~~

904.6 Steam Safety and Pressure-Relief Valves. See Chapter 10 of this code. ~~Steam and hot water boilers shall be equipped, respectively, with listed or approved steam safety or pressure-relief valves of discharge capacity and shall comply with ASME requirements. A shutoff valve shall not be placed between the relief valve and the boiler or on discharge pipes between such valves and the atmosphere. [NFPA 54:10.3.6]~~

913.1.1 Gasketed Fireplace Doors. A gasketed fireplace door shall not be installed on a factory-built fireplace, except where the fireplace system has been tested in accordance with UL 127 and the *Energy Conservation Code*.

916.2.1.1 Unvented Room Heaters. Unvented room heaters shall be prohibited in accordance with Section 2445.1 of the *Residential Code* ~~not be installed in bathrooms or bedrooms.~~

{EDITORIAL NOTE: THE REMAINDER OF THIS SECTION REMAINS AS SET FORTH IN THE 2015 UMC AND IS NOT ADOPTED BY THIS JURISDICTION.}

928.0 Pool Heaters. Pool heaters shall comply with Appendix L of the *Plumbing Code*.

{EDITORIAL NOTE: THE REMAINDER OF SECTION 928 REMAINS AS SET FORTH IN THE 2015 UMC AND IS NOT ADOPTED BY THIS JURISDICTION.}

CHAPTER 10

BOILERS AND PRESSURE VESSELS

1001.1 Applicability. The requirements of this chapter shall apply to the construction, installation, operation, repair, and alteration of boilers and pressure vessels. Low-pressure boilers shall comply with this chapter and Section 904.0. The installation or repair of gas and potable water piping and/or accessories shall be subject to the provisions of the *Plumbing Code*.

Exceptions:

- (1) Listed and approved potable water heaters with a nominal capacity not exceeding 120 gallons (454 L) and having a heat input not exceeding 200,000 British thermal units per hour (Btu/h) (58.6 kW) used for hot water supply at a pressure not exceeding 160 pounds force per square inch (psi) (1,103 kPa) and at temperatures not exceeding 210°F (99°C), in accordance with the plumbing code.
- (2) Pressure vessels used for unheated water supply, including those containing air that serves as a cushion and is compressed by the introduction of water and tanks connected to sprinkler systems.
- (3) Portable unfired pressure vessels and Interstate Commerce Commission (I.C.C.) containers.
- (4) Containers for liquefied petroleum gases, bulk oxygen, and medical gas that are regulated by the fire code.
- (5) Unfired pressure vessels in business, factory, hazardous, mercantile, residential, storage, and utility occupancies having a volume not exceeding 5 cubic feet (0.14 m³) and operating at pressures not exceeding 250 psi (1,724 kPa).
- (6) Pressure vessels used in refrigeration systems shall comply with Chapter 11.
- (7) Pressure tanks used in conjunction with coaxial cables, telephone cables, power cables, and other similar humidity control systems.
- (8) A boiler or pressure vessel subject to regular inspection by federal inspectors or licensed by federal authorities.

1001.7 Makeup water connection to steam boilers. Approved backflow preventers shall be installed in accordance with the *Plumbing Code*.

1003.6 Potable Water Boilers. Permits and inspections pertaining to boilers used exclusively for the production of potable hot water shall be administered by the Plumbing Inspection Section staff of the Authority Having Jurisdiction.

1003.7 Permit Required. Except for work exempted by Section 104.2 of this code, a permit shall be obtained from the Authority Having Jurisdiction prior to installation, reinstallation, alteration, repair or replacement of boilers and pressure vessels related to steam and hot water boiler systems. Alteration of safety control systems on automatic boilers or replacement, repair, or alteration of breeching, vent connector, vent pipe or chimney, and the conversion of solid fuel-

fired boilers as permitted by Section 1010.0 shall also require a permit. See Chapter 1 for requirements for obtaining permits.

1003.8 Boiler Nameplate. A boiler nameplate shall be attached to each boiler. Lost or destroyed nameplates shall be replaced in accordance with the *National Board Inspection Code*.

1005.6 Authority to Set and Seal Safety Appliances. All safety and safety relief valves for ASME Section I, Section IV, and Section VIII Division 1 boilers must be repaired, tested, set, and sealed by one of the following, provided the scope of the issued certificate of authorization covers the work to be performed:

- (1) An organization holding a valid V, HV, or UV certification or authorization, as appropriate, issued by the American Society of Mechanical Engineers (ASME);
- (2) An organization holding a valid VR certificate of authorization issued by the National Board of Boiler and Pressure Vessel Inspectors; or
- (3) An organization holding a valid owner/operate certificate of authorization issued by the Texas Department of Licensing and Regulation.

1006.0 Gas Shutoff Valves.

1006.1 General. An approved manual shutoff valve shall be installed within 3 feet (914 mm) of the boiler gas train, upstream of all control devices on the main burner of a gas-fired boiler. The takeoff point for the gas supply to the pilot shall be upstream of the gas shutoff valve of the main burner and shall be valved separately. A union or other approved means of disconnect shall be provided immediately down-stream of these shutoff valves.

1008.2 Low-Water Fuel Cutoff and Feed Water Pump Control Combined in a Single Device. Where a low-water fuel cutoff and feed water pump control combined in a single device is used, an additional separate low-water fuel cutoff with manual reset shall be installed, or be in accordance with the manufacturer's specifications of a listed device. The additional control shall be wired in series electrically with the existing low-water fuel cutoff.

1008.3 Low-Water Fuel Cutoff Housed in Either the Water Column or Separate Chamber. The installation shall be provided with a blow down pipe and valve not less than ¾ inch pipe size. The arrangement shall be such that when the water column is blown down, the water level in it will be lowered sufficiently to activate the low-water fuel cutoff device.

1013.1 General. An installation for which a permit is required shall not be put into service until it has been inspected and approved by the Authority Having Jurisdiction.

It shall be the duty of the owner or his authorized representative to notify the Authority Having Jurisdiction that the installation is ready for inspection and test. It also shall be the duty of the owner or his authorized representative to post in a conspicuous position on the installation a notice in substantially the following form: "Warning! This installation has not been inspected and approved by the Authority Having Jurisdiction and shall not be covered or concealed until so inspected and approved," and it shall be unlawful for anyone other than the Authority Having Jurisdiction to remove such notice. The Authority Having Jurisdiction shall require such tests as it deems necessary to determine that the installation is in accordance with the provisions of this section. Such tests shall be made by the owner or his authorized representative in the presence

of the Authority Having Jurisdiction. All boiler installations shall be hydrostatically tested by the owner or owner's authorized representative in the presence of the Authority Having Jurisdiction and in accordance with the *National Board Inspection Code*.

Exception: On installation designed and supervised by a registered design professional, the Authority Having Jurisdiction shall have the authority to permit inspection and testing by such registered design professional.

Where the owner or his authorized representative requests inspection of a boiler prior to its installation, the Authority Having Jurisdiction shall make such inspection.

1013.2 Temporary Operating Permit. ~~It shall be unlawful to operate a boiler or pressure vessel without first obtaining a valid operating permit to do so from the Authority Having Jurisdiction. Such permit shall be displayed in a conspicuous place adjacent to the boiler or vessel. The operating permit shall not be issued until the equipment has been inspected and approved by the Authority Having Jurisdiction.~~

Exception: ~~The operation of steam heating boilers, low-pressure hot water heating boilers, hot water supply boilers, and pressure vessels in residential occupancies of less than six dwelling units and in utility occupancies.~~

An installer of a boiler installed by authority of a permit issued under the provisions of this code may operate a temporary boiler and its appurtenances for a limited time for the purpose of cleaning, testing and adjusting, prior to passing final inspection, upon the following conditions:

- (1) The installer in whose name the permit is issued shall request the Authority Having Jurisdiction to inspect the system for approval of such operation.
- (2) If upon inspection the system is approved for operation as described in this section, the Authority Having Jurisdiction shall indicate in writing on said permit that a temporary operation is approved for the purpose of cleaning, testing, and adjusting for a period of 30 working days from date of inspection.
- (3) On or before the expiration date of the temporary operating permit, the system shall be given a final inspection and if the system fails to be approved, a reinspection fee will be charged for each subsequent inspection until the system is finally approved as complying with the requirements of this code.
- (4) Should the cleaning, testing, and adjusting of a boiler system not be completed within the time stipulated on the temporary operating permit, the Authority Having Jurisdiction may extend the time for just cause.

CHAPTER 11

REFRIGERATION

1101.1 Applicability. Part I governs the design, installation, and construction of refrigeration systems, equipment, refrigerant piping, pressure vessels, and safety devices for new buildings, replacement of parts, alterations, and substitution of different refrigerants. Replacement of existing refrigeration systems, conversion to a different refrigerant or installation of a new refrigeration system into an existing building shall conform to the requirements of this chapter. Part II governs the installation and construction of cooling towers.

1101.1.1 Existing Systems. The requirements of this section shall apply to existing refrigerant systems, equipment or devices where a substitution of a different refrigerant or replacement or addition of a refrigeration system or equipment occurs, and:

- (1) The quantity of refrigerant in the largest system in the room exceeds the allowable quantities per Table 1102.2; or
- (2) The replaced, converted or altered system contains Group A1 refrigerant and has an aggregate horsepower of 100 or more for a single refrigerant system; or
- (3) The system contains other than Group A1 refrigerant

Exception: Absorption systems, see Section 1104.9, are exempted from 1101.2.

1104.9 Absorption Refrigeration.

1104.9.1 Lithium Bromide Absorption Refrigeration. Lithium bromide absorption refrigeration equipment using water as the refrigerant and steam or hot water as the energy source is exempt from refrigeration machinery room requirements and may be located in the same room with refrigeration equipment requiring a machinery room.

1104.9.2 Direct Fired Absorption Refrigeration. Direct fired absorption refrigeration equipment shall be installed in a room constructed as required for a boiler of similar Btu input. This equipment shall not be installed in a refrigeration machinery room.

1104.9.3 Ammonia Absorption Refrigeration. Ammonia absorption refrigeration equipment larger than 5 tons shall be installed in a refrigeration machinery room with the relief piped in accordance with the *Fire Code*.

1105.6 Prohibited Locations. Refrigeration systems or portions thereof shall not be located within a required exit enclosure. Refrigeration compressors exceeding 5 horsepower (3.7 kW) rating shall be located not less than 10 feet (3,048 mm) from an exit opening in a Group A; Group B; Group E; Group F; Group I; Group R; Division 1; or Group S Occupancy, unless separated by a one-hour fire-resistive occupancy separation fire barrier.

Exception: Refrigeration compressors containing A1 refrigerant located 10 feet (3048 mm) or less from an exit opening.

1106.9 Boilers in Existing Machinery Rooms.

1106.9.1 Isolation. Boilers and other heat-producing appliances shall be isolated from the machinery room by walls or partitions that create a reasonably distinct and separate atmosphere from the refrigeration machinery room. Combustion air shall be taken from other than refrigeration machinery rooms in accordance with Chapter 7 of this code. Partitions, doors and other components of the structure shall be made of materials as required for not less than a one-hour occupancy separation.

Exceptions:

- (1) Where it is physically impractical to comply with the above requirement, an evaluation report by a registered engineer or registered architect licensed to practice in the State of Texas shall be presented to the Authority Having Jurisdiction for approval. The walls, partitions and doors need not comply with the requirements set forth for a fire barrier, but may consist of one-hour material designed and constructed to isolate the machinery room from the boilers to create a reasonably distinct and separate atmosphere within the respective rooms.
- (2) Where it is found to be physically impractical to construct a separation of boilers and refrigeration machinery containing Group A1 or Group B1 refrigerant, a registered professional engineer licensed to practice in the State of Texas shall evaluate the effect that ventilation, both emergency and continuous, will have on the operation of boilers within the refrigeration machinery room. A report, including a statement clearly indicating that a boiler will operate safely shall be submitted to the Authority Having Jurisdiction for review and approval prior to placing the boilers and ventilation into operation simultaneously. If the registered professional engineer determines that the required continuous ventilation will not have a detrimental effect on the operation of boilers but that emergency ventilation will have a detrimental effect on boiler operation, an electrical interlock designed to shut off the fuel supply to boilers when emergency ventilation is energized may be used in lieu of isolation of the boilers from the machinery room.

1106.9.2 Engines in Existing Refrigeration Machinery Rooms. Engines are permitted in refrigeration machinery rooms, provided:

- (1) The refrigerant classification is Group A1 and Group B1 only;
- (2) Combustion air is taken from outside the building and to the engine in substantially sealed ducts or pipes;
- (3) Insulation is provided for all hot surfaces subject to a temperature of 800°F or higher;
- (4) Ventilation is provided to dissipate the radiant heat from the engines to keep the room below 120°F (48.89°C); and
- (5) There is no open flame or spark.

1106.9.3 Switchgear and Related Equipment in Machinery Rooms. Switchgear and related equipment may remain in an existing machinery room, provided:

- (1) The refrigerant classification is Group A1 or Group B1 only; and
- (2) The switchgear or related equipment possesses no clearance or work hazard in regard to the refrigeration machinery or the electrical switchgear.

1106.9.4 Emergency Control. Emergency control in accordance with Section 1107.6 shall be provided for the refrigeration equipment and existing air-handling equipment except machinery room ventilation fans.

1107.4 Distribution of Ventilation. Exhaust inlets or permanent openings shall be located to provide ventilation throughout the entire refrigeration machinery room. Emergency exhaust intakes shall be located within 12 inches (305 mm) of the floor unless the refrigerant is lighter than air.

1109.1.4 Piping Insulation. For minimum pipe insulation see the *Energy Code*.

CHAPTER 12

HYDRONICS

~~**1207.4 Solar Heat Collector Systems.** Solar water heating systems used in hydronic panel radiant heating systems shall be installed in accordance with the *Uniform Solar Energy Code* and *Hydronics Code* (USEHC).~~

CHAPTER 13

FUEL GAS PIPING

1301.0 Scope of Gas Piping. For provisions pertaining to fuel gas piping see Chapter 12 of the *Plumbing Code*.

{EDITORIAL NOTE: THE REMAINDER OF THIS CHAPTER REMAINS AS SET FORTH IN THE 2015 UMC AND IS NOT ADOPTED BY THIS JURISDICTION.}

CHAPTER 14

PROCESS PIPING

{EDITORIAL NOTE: THE REMAINDER OF THIS CHAPTER REMAINS AS SET FORTH IN THE 2015 UMC AND IS NOT ADOPTED BY THIS JURISDICTION. PROCESS PIPING SHALL COMPLY WITH SECTION 2907 AND OTHER APPLICABLE PROVISIONS OF THE FIRE CODE AS DEFINED HEREIN.}

CHAPTER 15

SOLAR ENERGY SYSTEMS

{EDITORIAL NOTE: THE REMAINDER OF THIS CHAPTER REMAINS AS SET FORTH IN THE 2015 UMC AND IS NOT ADOPTED BY THIS JURISDICTION. THE INSTALLATION OF SOLAR ENERGY SYSTEMS SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE *CONSTRUCTION CODE*, AS DEFINED HEREIN.}

CHAPTER 17

REFERENCED STANDARDS

TABLE 1701.1
REFERENCED STANDARDS

Standard Number	Standard Title	Application	Referenced Sections
<u>ASTM B 68-2011</u>	<u>Specification for Seamless Copper Tube, Bright Annealed (Metric)</u>	<u>Miscellaneous</u>	<u>405.13.1</u>
NFPA 70-20 <u>20</u> 44*	National Electrical Code	Miscellaneous	301.4, 511.1.6, 512.2.5, 516.2.7, 516.2.9(4), 602.2.1, 905.10.2, 1104.4(6), 1217.7.1, 1311.14.5(2), 1312.6, E 503.5(11)(c)
<u>NFPA 92-2015</u>	<u>Standard for Smoke Control Systems</u>	<u>Smoke Control</u>	<u>405.7, 405.8</u>
<u>UL 864-2003</u>	<u>Standards for Control Units and Accessories for Fire Alarm Systems</u>	<u>Miscellaneous</u>	<u>405.12</u>

Houston Amendments to the 2015 Uniform Plumbing Code



Adopted by Ord. No. 2021-1037¹

Passed December 1, 2021²

Effective April 1, 2022³

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1. The City Secretary shall insert the number of the adopting ordinance.
 2. The City Secretary shall insert the date passage and approval of the adopting ordinance.
 3. The City Secretary shall insert the effective date of the adopting ordinance.

CHAPTER 1

ADMINISTRATION

101.1 Title. ~~This document~~ These regulations shall be known as the Uniform City of Houston Plumbing Code, ~~may be cited as such and will be referred to hereinafter~~ referred to as “this code,” and also known as the Plumbing Code.

The City of Houston Construction Code collectively includes this volume and certain other codes, pamphlets, specifications and documents that are adopted in or by reference through the adopting ordinance, City of Houston Ordinance No. 2021-1037⁴.

102.1 Conflicting Provisions. ~~Where the requirements within the jurisdiction of this plumbing code conflict with the requirements of the mechanical code, this code shall prevail. In instances where this code, applicable standards, or the manufacturer’s installation instructions conflict, the more stringent provisions shall prevail. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall prevail.~~

Where, in any specific instance, provisions of this code, including adopted appendices, specify different materials, different methods of construction, or other requirements that differ from those provided in the City Code or other volumes of the Construction Code, including adopted appendices, other than the Fire Code and its adopted appendices and standards, the most restrictive shall prevail. Where, in any specific instance, provisions of this code, including adopted appendices, specify different materials, different methods of construction, or other requirements that differ from those provided in the Fire Code, including its adopted appendices and standards, and the building official and the fire marshal are unable to mutually reconcile the requirements by issuing a written interpretation, then either of them may refer the matter to the General Appeals Board created under the Building Code, which shall conduct a review of the matter and issue a written code interpretation based upon the apparent intent of the codes involved. Notwithstanding any other provision, interpretations that are issued by the General Appeals Board shall not be subject to further appeal.

102.1.1 Residential Code. Plumbing for detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height, each with separate means of egress, and their accessory structures not more than three stories above grade plane in height shall comply with the Residential Code. Plumbing for residential occupancies to which the Residential Code does not apply shall be governed by this code.

102.1.2 Energy Efficiency. The Energy Conservation Code and Chapter 11 of the Residential Code, and any amendments adopted as authorized by state law, constitute the energy efficiency/conservation codes of the jurisdiction.

102.1.3 Irrigation Systems. Irrigation systems shall comply with standards and specifications regarding the design, installation, and operation of such systems in accordance with Chapter 344 of the Texas Administrative Code, Chapter 1903 of the Texas Occupations Code and any rules adopted by the Texas Commission on Environmental Quality pursuant to Section 1903.053 of the Texas Occupations Code.

4. The City Secretary shall insert the number of the adopting ordinance.

102.8 Appendices. The provisions in the appendices are intended to supplement the requirements of this code and shall not be considered part of this code unless formally adopted as such. Appendices A, B, C, I, K, and L, as amended by this jurisdiction, are hereby adopted and shall be incorporated into and made part of this code.

102.9 Exempt Installations. The provisions of this code shall not apply to:

- (1) Gas service mains from the street main to the meter.
- (2) The installation of gas meters by the utility organization supplying gas.
- (3) Gas piping installations of the utility organization made on its own or public premises and part of the general gas supply and distribution for this jurisdiction and surrounding communities.
- (4) The installation of public sewers and public water distribution systems by this jurisdiction, its contractors, agents and employees.

102.10 Homeowners. In accordance with the Plumbing License Law, this code shall not prevent any homeowner from installing and maintaining plumbing in a building owned and occupied by him as his homestead if done in compliance with the requirements of all applicable state-adopted codes and ordinances of this jurisdiction. Such privilege does not grant the right to violate any of the provisions of this code or state-adopted codes, nor shall it be construed as exempting any such property owner from obtaining a permit and paying the required fees therefor, except for work that is exempt from permitting under this code.

102.11 Basic Principles. The general requirements of this code are enunciated as necessary principles for basic environmental sanitation through designed, acceptably installed, and adequately maintained plumbing systems. The following principles shall serve to define the intent of this code:

Principle No. 1. All premises intended for human habitation, occupancy, or use shall be provided with a supply of potable water that is neither connected with unsafe water supplies nor subject to the hazards of backflow, backsiphonage, or back pressure due to dormant or inert periods.

Principle No. 2. Every building having plumbing fixtures installed and intended for human habitation, occupancy, or use and located on premises abutting a street, alley, or easement in which there is a public sewer shall have a separate connection with such sewer. Where two or more buildings are located on one lot fronting 75 feet (22.9 m) or less on such street, alley, or easement and the lot is under one ownership, one sewer connection to the public main may be used for all buildings located thereon. On any industrial tract, apartment project, or similar installation under one ownership where the sanitary sewers within the tract, project or installation are maintained and operated by one owner, separate connections shall be made to the privately owned and maintained sewer, but only one connection need be made to the public sewer.

Principle No. 3. Each dwelling unit shall have not less than one water closet, one bathtub or shower, one lavatory, and one kitchen-type sink. Adequate 120°F (48°C) hot water shall be provided to the tub or shower, lavatory, and kitchen sink. All other structures for human occupancy or use on premises located within 300 feet (91.4 m) of a public sewer or having a private sewage disposal system shall have adequate sanitary sewer facilities but in no case less than one water closet and one fixture for cleansing purposes.

Principle No. 4. Plumbing fixtures shall be made of smooth, nonabsorbent material, shall be free from concealed fouling surface, and shall be located in ventilated enclosures.

Principle No. 5. Each fixture directly connected to the drainage system shall be equipped with a water-seal trap.

Principle No. 6. No substance that will clog the pipes, produce explosive mixtures, destroy the pipes or their joints or interfere unduly with the sewage disposal process shall be allowed to enter the building drainage system.

Principle No. 7. Proper sewage backflow protection shall be provided to prevent overflow into the building as well as to prevent contamination of food, water, sterile goods, and similar materials. In any instance where the possibility of contamination may occur due to backflow or overflow the fixture, device, or appliance shall be connected indirectly to the building drainage system.

Principle No. 8. No water closet shall be located in a room or compartment that is not properly lighted and ventilated.

Principle No. 9. If water closets or other plumbing fixtures are installed in buildings located on premises where there is no public sewer available as determined by the provisions of all applicable ordinances, provisions shall be made for disposing of the building sewage by a method of sewage treatment and disposal approved by the Authority Having Jurisdiction. On-site sewage disposal systems shall additionally comply with Chapter 366 of the Texas Health and Safety Code.

Principle No. 10. Where a plumbing drainage system may be subject to backflow of sewage, provisions shall be made to prevent its overflow in the building.

Principle No. 11. Plumbing shall be installed without compromise to the strength of structural members and to prevent damage to walls and other surfaces through fixture usage.

Principle No. 12. Sewage or other waste from a plumbing system that may be deleterious to surface or subsurface waters shall not be discharged into the ground or into any waterway unless it has first been rendered innocuous through subjection to a form of treatment that is approved by the Authority Having Jurisdiction and that meets the standards established by applicable law.

103.2 Liability. ~~The Authority Having Jurisdiction charged with the enforcement of this code, acting in good faith and without malice in the discharge of the Authority Having Jurisdiction's duties, shall not thereby be rendered personally liable for damage that accrues to persons or property as a result of an act or by reason of an act or omission in the discharge of duties. A suit brought against the Authority Having Jurisdiction or employee because of such act or omission performed in the enforcement of provisions of this code shall be defended by legal counsel provided by this jurisdiction until final termination of such proceedings. Except as otherwise provided by law, the Authority Having Jurisdiction shall not be personally liable for damages arising out of any act or omission arising out of any official action taken to implement or enforce the provisions of this code. Additionally, except as otherwise provided by law, the Authority Having Jurisdiction shall not be personally liable for damages arising out of any act or omission committed in the course and scope of employment. Where and to the extent consistent with the provisions of Chapter 2, Article X, of the City Code, this jurisdiction shall provide legal representation and indemnification for any suit or claim brought against the Authority Having Jurisdiction because of acts or omissions performed in the implementation or enforcement of this code.~~

This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating or controlling any building, structure, system or other construction for any

damages to persons or property caused by defects, nor shall the code enforcement agency or the jurisdiction be held as assuming any such liability by reason of the inspections authorized by this code or any permits or certificates issued under this code.

103.3.1 Licensing. ~~Provision for licensing shall be determined by the Authority Having Jurisdiction.~~ **Irrigation Permit.** An installer of an irrigation system shall obtain a separate permit for each property before installing such a system.

104.2 Exempt Work. A permit shall not be required for the following:

- (1) The stopping of leaks in drains, or soil, waste, or vent pipe, provided, however, that if a trap, drain pipe, or soil, waste, or vent pipe becomes defective and it becomes necessary to remove and replace ~~the same~~ it with new material, ~~the same~~ it shall be considered as new work and for which a permit shall be procured and inspection made as provided in this code.
- (2) The clearing of stoppages, including the removal and reinstallation of bathroom or kitchen faucets or water closets, or the repairing of leaks in pipes, valves, or fixtures, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes, or fixtures.

Exemption from the permit requirements of this code shall not be deemed to grant authorization for work to be done in violation of the provisions of ~~the~~ this code or other laws or ordinances of this jurisdiction.

This section shall be construed in a manner that is consistent with the Plumbing License Law, and no provision herein shall be construed to exempt work for which a permit is required to be obtained from this jurisdiction.

104.3 Application for Permit. Upon application by a state-licensed master plumber or by a property owner of a building owned and occupied by him as his homestead to install storm and sanitary sewers, plumbing fixtures, appurtenances and appliances for drainage, gas, water and/or sewer lines, or medical gas, water treatment and/or irrigation lines and appurtenances, or by drain layer's license holders to install storm sewers, or by an installer of an irrigation system to install irrigation lines or systems, if the conditions and requirements of this code have been complied with and if there are adequate facilities or arrangements have been made to provide service to such plumbing installations, the Authority Having Jurisdiction shall issue a permit. No plumbing permit shall be issued until a building permit has first been issued where a building permit is required. To obtain a plumbing permit, the applicant shall first file an application therefore in writing on a form furnished by the Authority Having Jurisdiction for that purpose. Such application shall:

- (1) Identify and describe the work to be covered by the permit for which application is made.
- (2) Describe the land upon which the proposed work is to be done by legal description, street address, or similar description that will readily identify and definitely locate the proposed building or work.
- (3) Indicate the use or occupancy for which the proposed work is intended.
- (4) Be accompanied by construction documents in accordance with Section 104.3.1.
- (5) Be signed by the permittee or the permittee's authorized agent. The Authority Having Jurisdiction shall be permitted to require evidence to indicate such authority.

- (6) Give such other data and information ~~in accordance with~~ as may reasonably be required by the Authority Having Jurisdiction.
- (7) Be accompanied by the applicable fees as provided in the city fee schedule.

104.3.2 Plan Review Fees. Where a plan or other data is required to be submitted in accordance with Section 104.3.1, a plan review fee shall be paid at the time of submitting construction documents for review.

The plan review fees for plumbing systems work shall be charged as described in Section 118.1.11 of the Building Code and the city fee schedule ~~determined and adopted by this jurisdiction.~~

The plan review fees specified in this subsection are separate fees from the permit fees ~~specified in Section 104.5.~~

~~Where plans are incomplete or changed so as to require additional review, a fee shall be charged at the rate shown in Table 104.5.~~

When approved plans are lost or changed so as to require an additional plan review or when a plan review is required and there is no building permit required, a plan review fee shall be charged as described in Section 118.2.8 of the Building Code and the city fee schedule.

104.3.2.1 Deferred Submittal Plan Review Fees. A plan review fee shall be paid at the time of submitting construction documents for review of deferred submittal plans. The fee for any deferred submittal review shall be charged at the rate shown in the city fee schedule for a minimum permit fee plus applicable administration fee. The plan review fees specified in this subsection are separate fees from the permit fees.

104.3.3 Time Limitation of Application. An application for which no permit is issued within 180 days following the date of application shall become inactive, and plans and other data submitted for review thereafter shall be returned to the applicant or destroyed by the Authority Having Jurisdiction. The building official is authorized to grant one or more extensions of time for additional periods not to exceed 180 days each, for a maximum of two years from the date of the original application, upon written request and justifiable cause demonstrated by the applicant. If an application for permit does not result in a permit within two years after the date of original application, the permit application shall expire. In order to renew action on an application after expiration, the applicant shall submit a new permit application and plans and shall pay a new plan review fee. ~~Applications for which no permit is issued within 180 days following the date of application shall expire by limitation, plans and other data submitted for review thereafter, shall be returned to the applicant or destroyed by the Authority Having Jurisdiction. The Authority Having Jurisdiction shall be permitted to exceed the time for action by the applicant for a period not to exceed 180 days upon request by the applicant showing that circumstances beyond the control of the applicant have prevented action from being taken. No application shall be extended more than once. In order to renew action on an application after expiration, the applicant shall resubmit plans and pay a new plan review fee.~~

104.4.2 Validity of Permit. The issuance of a permit or approval of construction documents shall not be construed to be a permit for, or an approval of, a violation of the

provisions of this code or other ordinance of the jurisdiction. No permit presuming to give authority to violate or cancel the provisions of this code shall be valid.

The issuance of a permit based upon plans, specifications, or other data shall not prevent the Authority Having Jurisdiction from thereafter requiring the correction of errors in said plans, specifications, and other data or from preventing building operations being carried on thereunder where in violation of this code or of other ordinances of this jurisdiction.

A permit and all its privileges are issued to the property owner, regardless of who submits the application or pays the fees. Where a Texas license is required to perform specific work, a permit shall be valid only for work performed under the licensed master plumber named on the application. A name change on an application or an existing permit must be obtained if the licensed master plumber listed on the application or existing permit is no longer responsible for the work performed. Provided that a refund has not been issued, the property owner has not changed, and written authority to amend the permit to designate a different master plumber has been provided by the property owner to the building official, the building official shall issue an amended permit. A name change fee and an administrative fee shall be charged as provided in Section 118.1 of the *Building Code* and the city fee schedule.

In the case of the death or dissolution of the original property owner or master plumber, pursuant to a timely name change request submitted within 45 calendar days after such death or dissolution, the permit will be transferred to the new property owner or master plumber or amended to designate the new property owner or master plumber at no fee except for the administrative fee established in Section 118.1.1 of the *Building Code* and the city fee schedule. Applicants requiring a re-permit who fail to re-permit any applicable work within the time frames established by this code shall be subject to permit fees established in Section 118 of the *Building Code* and the city fee schedule based on the scope of work for all remaining construction and uninspected work. Approved plans are issued to the property owner and the property owner's authorized agent listed on the permit associated with the plans.

104.4.3 Expiration. ~~A permit issued by the Authority Having Jurisdiction under the provisions of this code shall expire by limitation and become null and void where the work authorized by such permit is not commenced within 180 days from the date of such permit, or where become inactive unless the work authorized by such permit has commenced and been inspected by a city inspector within 180 days after its issuance, or if the work authorized by such permit is suspended or abandoned at a time after the work is commenced for a period of 180 days after the time the work was commenced. Before such work is recommenced, a new permit shall first be obtained to do so, and the fee therefore shall be one-half the amount required for a new permit for such work, provided no changes have been made or will be made in the original construction documents for such work, and provided further that such suspensions or abandonment has not exceeded 1 year.~~

If work has not commenced under a permit within two years after the date of issuance or is suspended or abandoned at any time for a period of two years, the permit shall expire and become null and void. In order to recommence work under an expired permit, the permit holder shall pay the full applicable permit fee and submit plans that comply with this code for all uninspected work.

Exception: For the purpose of issuing a certificate of occupancy or a certificate of compliance, the Authority Having Jurisdiction may, upon request, reactivate a permit and perform a final inspection of work.

104.4.4 Extensions. The Authority Having Jurisdiction is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated. A permittee holding an unexpired permit shall be permitted to apply for an extension of the time within which work shall be permitted to commence under that permit where the permittee is unable to commence work within the time required by this section. The Authority Having Jurisdiction shall be permitted to extend the time for action by the permittee for a period not exceeding 180 days upon written request by the permittee showing that circumstances beyond the control of the permittee have prevented action from being taken. No permit shall be extended more than once. In order to renew action on a permit after expiration, the permittee shall pay a new full permit fee.

104.4.5 Suspension or Revocation. The Authority Having Jurisdiction is authorized to shall be permitted to, in writing, suspend or revoke a permit issued under the provisions of this code wherever the permit is issued in error or on the basis of incorrect, inaccurate, or incomplete information, supplied or in violation of either any ordinance, or regulation, or provision of this code. Prior to taking such action, the Authority Having Jurisdiction shall provide notice of a right to a hearing on the matter pursuant to Section 106.7.1.

104.5 Fees. The fee for each permit shall be as set forth in the city fee schedule. Fees shall be assessed in accordance with the provisions of this section and as set forth in the fee schedule, Table 104.5. The fees are to be determined and adopted by this jurisdiction.

104.5.1.1 Special Investigation Fee. If the investigation in Section 104.5.1 reveals that work without a permit has commenced, a special investigation fee shall be collected in an amount equal to the amount of the permit fee that is required by this code if a permit were to be issued. The payment of such special investigation fee shall not exempt a person from compliance with other provisions of this code, nor from a penalty prescribed by law.

104.5.2 Minimum Investigation Fees. An minimum investigation fee, as established in Section 118.1.15 and the city fee schedule, shall be charged for all investigations other than those conducted pursuant to Section 104.5.1. The payment of such minimum investigation fee shall not exempt a person from compliance with other provisions of this code, nor from a penalty prescribed by law.

104.5.3 Fee Refunds. The Authority Having Jurisdiction shall be permitted to authorize the refunding of a fee as follows:

- (1) — The amount paid hereunder that was erroneously paid or collected.
- (2) — Refunding of not more than a percentage, as determined by this jurisdiction where no work has been done under a permit issued in accordance with this code.

The building official may authorize the refund of any fee paid hereunder that was erroneously paid or collected due to an error by a city employee. This provision shall not be applicable if the error occurred because of incorrect information provided by the applicant.

The building official may authorize a refund of not more than 90 percent of the amount in excess of the minimum permit fee paid when no work has been done under a permit issued in accordance with this code. If work has been done under the permit, no

refund shall be authorized. The originally paid administrative fee and the plan review portion of the permit fee shall be nonrefundable.

The building official ~~Authority Having Jurisdiction~~ shall not authorize a the refunding of any fee paid except upon written application filed by the original permittee holder not to exceed later than 180 calendar days after the date of fee payment.

104.5.4 Annual Fee Increase. Notwithstanding any maximum fee established pursuant to the Construction Code, the fees in this or in any volume of the Construction Code, as adjusted according to this section, shall be automatically increased on the first day of each subsequent calendar year as provided in Section 1-13 of the City Code.

105.2.6 Reinspections. The building official may assess a ~~A-reinspection fee shall be permitted to be assessed~~ for each inspection or reinspection when an inspector arrives to perform the inspection and finds the ~~where such~~ portion of work for which inspection is called is not complete or where required when ~~where required~~ corrections called for in a previous inspection report have not been made.

~~This provision section~~ shall not to be interpreted as requiring reinspection fees the first time a job is rejected for failure to comply be in accordance with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for inspection or reinspection.

The building official may assess a reinspection fee ~~Reinspection fees shall be permitted to be assessed where~~ when the inspection record card is not posted or otherwise available on the work site, when the approved plans are not readily available to the inspector, for failure to provide access on the date for which the inspection is requested, or for deviating from plans requiring the approval of the Authority Having Jurisdiction.

To obtain reinspection, the applicant shall ~~file an application therefore in writing upon a form furnished for that purpose~~ make a request and pay the reinspection fee in accordance with ~~Table 104.5~~ Section 118 of the Building Code and the city fee schedule.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

106.1 General. It shall be unlawful for a person, firm, or corporation to erect, construct, enlarge, alter, repair, move, improve, remove, convert, demolish, equip, use, or maintain plumbing or permit the same to be done in violation of this code. It shall be a violation to falsify any test required by this code.

106.3 Penalties. A person, firm, or corporation violating a provision of this code shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punishable by a fine, imprisonment, or both set forth by the governing laws of the jurisdiction. Each separate day or portion thereof, during which a violation of this code occurs or continues, shall be deemed to constitute a separate offense. Where no specific penalty is otherwise provided in this code, the violation of any provision of this code shall constitute a misdemeanor punishable upon conviction by a fine of not less than \$500.00 nor more than \$2,000.00. Each day that any violation continues shall constitute and be punishable as a separate offense. Where any such conduct in violation of this code also constitutes a violation of state penal law, then the offense shall be punishable as provided in the

applicable state law. In prosecutions under this code, the various provisions hereof that are designated as an "exception" or "exceptions" shall not be treated as exceptions within the meaning of Section 2.02 of the Texas Penal Code, and instead, they shall constitute defenses to prosecution within the meaning of Section 2.03 of the Texas Penal Code.

106.4 Stop Work Orders. Where work is being done contrary to the provisions of this code, the Authority Having Jurisdiction shall be permitted to order the work stopped by notice in writing served on persons engaged in the doing or causing such work to be done, and such persons shall forthwith stop work until authorized by the Authority Having Jurisdiction to proceed with the work.

At the time such stop work order is issued, the person doing the work and the permit holder shall be given notice of a right to a hearing on the matter pursuant to Section 106.7 of this code. On written request from the person doing the work or the permit holder, such a hearing shall be held within three business days unless the permit holder or the person doing the work requests an extension of time. Any stop work order that has been issued shall remain in effect pending any hearing requested on the matter, unless the stop work order is withdrawn by the Authority Having Jurisdiction.

106.7 Hearing Procedures.

106.7.1 Hearing Notices. Whenever notice is to be given to any person concerning the right to a hearing, the notice may be given by personal hand delivery, certified mail, or personal delivery service, return receipt requested. If notice is being given to a building owner or to a tenant therein, and the Authority Having Jurisdiction is unable to determine the name or address of such person after checking the building and the applicable records of the jurisdiction's Department of Public Works, the County Appraisal District, the electrical utility company and the gas utility company, the Authority Having Jurisdiction shall mail notice to the billing addresses of the building as shown on the records of the Water Division of the jurisdiction's Department of Public Works and shall post the notice on or in view of each entrance to the building. Additionally, if any notice is mailed to a building owner or a building tenant and is returned without delivery, notice shall be effective if posted on or in view of each entrance of the building.

106.7.2 Hearings. Except where otherwise specifically provided, all hearings held pursuant to this code shall be conducted by the director of Houston Public Works or a representative, who shall hereinafter be referred to as the "hearing official." The director shall not designate any person to be a hearing official under this code who has taken any part in the investigation of the matter that is the subject of the hearing or any person who directly supervised the investigation. The hearing official shall consider only the evidence presented at the hearing in rendering a decision. The hearing official shall set forth the decision in writing and shall provide the decision to each party in the same manner as a notice of a right to a hearing.

107.1 General. In order to hear and decide appeals of orders, decisions, or determinations made by the Authority Having Jurisdiction relative to the application and interpretations of this code, there shall be and ~~here~~ is hereby created a Plumbing Code Review Board of Appeals consisting of seven members who are qualified by experience and training to pass upon matters pertaining to plumbing design, construction, and maintenance and the public health aspects of plumbing systems and who are not employees of the jurisdiction. The Authority Having Jurisdiction shall be an ex-officio member and shall act as secretary to said board but shall have no vote upon a matter before the board. ~~The Board of Appeals shall be appointed by the governing body and shall hold~~

~~office at its pleasure.~~ The board shall adopt rules of procedure for conducting its business and shall render decisions and findings in writing to the appellant with a duplicate copy to the Authority Having Jurisdiction.

107.3 Composition. Each board member, except the member in position 7, shall be appointed by the Mayor and confirmed by the City Council. The Mayor shall designate a member to be the chairperson. Each of the seven positions shall be numbered:

- (1) Positions 1 and 2 shall be filled by professional engineers registered by the State of Texas who are actively engaged in the design of plumbing systems.
- (2) Positions 3 and 4 shall be filled by licensed master plumbers.
- (3) Position 5 shall be filled by a degreed engineer who is employed by a local gas utility company.
- (4) Position 6 shall be filled by a member of the public at large.
- (5) Position 7 shall be filled by the chief plumbing inspector of this jurisdiction.

107.4 Terms of Office; Qualifications; Removal; Vacancy; Meetings. The terms of office for the appointees to Position Nos. 1, 3, and 5 shall expire on the second day of January of odd-numbered years, and the terms of office for the appointees to Position Nos. 2, 4, and 6 shall expire on the second day of January of even-numbered years; however, each member shall continue in office until his respective successor shall have been appointed and qualified. The adoption of this code shall not terminate the term of office of any person currently serving in any position on the board.

In addition to other qualifications herein above required, each member of the board shall be a citizen of the United States. All members of the board other than the appointee to Position 6 shall be selected on the basis of their technical and professional qualifications.

Each member of the board shall be subject to removal by the Mayor. Whenever any position on the board becomes vacant by reason of death, resignation, or removal, the vacancy shall be filled for the unexpired term of the member being replaced. The Mayor shall appoint, subject to confirmation by City Council, another qualified person to serve the unexpired term of the vacancy.

The board shall hold meetings in this jurisdiction at times and places to be designated by the chairperson, who is also authorized to call special meetings when deemed necessary. Each member of the board shall receive \$50.00 for each meeting he attends at which a quorum is present; provided, however, those members who are employees of this jurisdiction will be paid only for those meetings they attend that are neither held during nor continue beyond their regular working hours. Members shall not be compensated for more than three meetings in any one calendar month.

107.5 Quorum. Four board members present at any meeting shall constitute a quorum for the transaction of all business of said board. A majority vote of the board members present at any meeting constituting a quorum shall prevail.

107.6 Review of Action of Plumbing Inspectors. Disputes arising between plumbing inspectors and any person concerning the application of the provisions of this code may be submitted to the Authority Having Jurisdiction. Any interested party (other than an inspector of this jurisdiction) who is dissatisfied with the decision of the Authority Having Jurisdiction on the matter may appeal that decision to the board by making application therefor in writing to the Authority Having Jurisdiction.

The Authority Having Jurisdiction shall forward the application to the board chairperson, who shall inform the applicant and the Authority Having Jurisdiction in writing of the date and time set for a hearing on the matter. If the applicant fails to appear at the hearing, either in person or by an attorney, the dispute shall be decided against the applicant. Each party to the dispute shall be entitled to present his side of the matter to the board, and the board shall render its decision on the matter based upon its interpretation of the applicable provisions of this code. Any party to the dispute who is dissatisfied with the board's decision shall have the right to appeal the decision to the City Council, by delivering a written notice of appeal to the office of the City Secretary within 10 days after the date of the board's decision. The City Council shall affirm, reverse, or modify the board's decision based upon the City Council's interpretation of the applicable provisions of this code. The City Council's decision on the matter shall be final.

All appeals to the City Council are subject to the rules of the City Council, which are codified in Section 2-2 of the *City Code*, copies of which are available from the City Secretary. Parties wishing to preserve their right of appeal must comply with the rules of the City Council, including Rule 12.

107.7 Review of New Materials, Methods and Interpretations of this Code. Any person whose plumbing products are not specifically approved by this code may file a petition in writing for approval thereof with the Authority Having Jurisdiction, who shall determine whether the material or method should be approved pursuant to this code. If the Authority Having Jurisdiction denies approval of the material or method, the decision may be appealed to the board. Such an appeal shall be by a petition delivered to the Authority Having Jurisdiction who in turn shall deliver the petition to the chairperson of the board. The board shall, within 30 days after the date of filing of the petition, hear the petition and determine the merits of the material or method. The board may establish any additional tests to which the product must be subjected if the board finds the tests necessary to determine whether the product should be approved. Any and all tests shall be made at the petitioner's expense, and the petitioner shall deposit the cost with this jurisdiction before the tests are made. If additional tests are required, the board shall render its decision within 30 days after the tests are completed.

In the event the board is of the opinion that the plumbing should be approved pursuant to Section 301.3 of this code, they shall so state in the minutes of the board, and such plumbing shall be approved.

108.0 Licensing.

108.1 General. Before any person shall engage in any plumbing business within the jurisdiction, the person shall secure a state license as a master plumber as required by the Texas State Board of Plumbing Examiners under the current Plumbing License Law. A master license holder shall annually register his state plumbing license with the Authority Having Jurisdiction during the month of initial registration. The Authority Having Jurisdiction shall not register a master plumber as a contractor until and unless the master plumber is listed on the Texas State Board of Plumbing Examiner's website.

Registration shall not be effective if the master plumber fails to maintain current proof of insurance as required by state law.

108.2 License to Do Plumbing Work. Each person engaged in plumbing installation shall be licensed either as a master plumber, current journeyman plumber, or an apprentice plumber by the Texas State Board of Plumbing Examiners under the Plumbing License Law. A licensed master plumber must have a medical gas endorsement to engage in the installation of medical gas.

108.2.1 Licensing of Drain Layers. Before any person other than a master plumber engages in the business of laying sanitary or storm sewers, the person shall make an application for and secure a drain layer's license. The application for and issuance of such license shall be in accordance with Chapter 47 of the *City Code*.

108.2.2 Registered Irrigators. Before any person other than a master plumber engages in the installation of lawn irrigation systems, the person shall obtain a certificate of registration (license) under state law and register with the Authority Having Jurisdiction. This requirement shall not extend to work that is exempt under this code and state law.

The annual fee for irrigator registration required under this section is stated in the city fee schedule.

108.2.3 Certified Water Treatment Specialists. Before any person other than a master plumber engages in the business of installing water treatment equipment, the person must secure a State of Texas Water Treatment Specialist Certification under Chapter 341 of the Texas Health and Safety Code, and register the certification with the Authority Having Jurisdiction.

108.3 Illegal Work. Upon notice from the Authority Having Jurisdiction, any person engaged in plumbing or drain laying business whose work, workmanship or materials do not conform to this code shall immediately make necessary changes or corrections to conform to this code. If work has not been so changed 10 days after delivery of this notice, the Authority Having Jurisdiction shall refuse to issue any further permits to the person until the nonconforming work has been fully corrected in accordance with this code.

108.4 Prohibited Use of Name or License to Obtain Permit. No person engaged in the business of plumbing or laying drains shall allow his name or license to be used by any other person to obtain a permit.

108.5 Vehicles Identification Required. Each person engaged in plumbing business in the jurisdiction shall identify all vehicles used in the business with signs showing the name of the business and the master plumber's license number. This information shall be accurate, legible and painted on each side of all vehicles at all times. Lettering shall be a minimum of 2 inches (50.8 mm) high.

{EDITORIAL NOTE: DELETE TABLE 104.5.}

CHAPTER 2

DEFINITIONS

201.2 Interchangeability. Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

201.3 Specific Construction and Terms Defined in Other Codes. Where specific rules of construction or terms are not addressed or defined in this code and are addressed or defined in the *City Code* or another volume of the *Construction Code*, such terms or specific constructions herein shall have the meanings ascribed to them in those other volumes, as applicable to the construction and proposed scope of work hereunder.

203.0

– A –

Authority Having Jurisdiction. ~~The director of Houston Public Works. The organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, installations, or procedures. The Authority Having Jurisdiction shall be a federal, state, local, or other regional department or an individual such as a plumbing official, mechanical official, labor department official, health department official, building official, or others having statutory authority. In the absence of a statutory authority, the Authority Having Jurisdiction may be some other responsible party.~~ This definition shall include the Authority Having Jurisdiction's duly authorized representative.

204.0

– B –

Building Code. The City of Houston *Building Code*, as adopted and amended by this jurisdiction.

Building Official. The director of Houston Public Works or the duly authorized representative designated by the director to act as the chief construction code enforcement official of the jurisdiction; also known as *chief building official*. The term also includes the Houston Airport Systems building official who may be designated by the building official to perform *Construction Code* permitting and enforcement activities on Houston Airport Systems premises.

205.0

– C –

Certificate of Compliance. A certificate stating that materials and products meet specified standards or that the scope of work under a specific permit was done in compliance with approved construction documents. Any reference in the *Construction Code* to a "CC", certificate of completion, or a certificate of inspection issued by this jurisdiction, is a reference to a certificate of compliance as defined herein.

City Code. The Code of Ordinances, City of Houston, Texas.

City Fee Schedule. The schedule of fees charged by the city for various permits, licenses, registrations, authorizations and services, which is maintained on the city's website.

Construction Code. Has the meaning ascribed in Section 1-2 of the City Code.

207.0

– E –

Electrical Code. The City of Houston Electrical Code, as adopted and amended by this jurisdiction.

Energy Conservation Code. The City of Houston Residential Energy Conservation Code, or the City of Houston Commercial Energy Conservation Code, as adopted and amended by this jurisdiction.

208.0

– F –

Fire Code. The City of Houston Fire Code, as adopted and amended by this jurisdiction.

209.0

– G –

Gravity Grease Interceptor. A plumbing appurtenance or appliance that is installed in a sanitary drainage system to intercept nonpetroleum fats, oils, and greases (FOG) from a wastewater discharge and is identified by volume, 30-minute retention time, baffle(s), not less than two compartments, a total volume of not less than 300–500 gallons (4435–1893 L), and gravity separation. {These interceptors shall either comply with the requirements of Chapter 10 or ~~are be~~ designed by a registered design professional.} Gravity grease interceptors are generally installed outside.

210.0

– H –

Health Department. The Houston Health Department.

212.0

– J –

Jurisdiction. The governmental unit that has adopted this code under due legislative authority.

215.0

– M –

Mechanical Code. The City of Houston *Mechanical Code*, as adopted and amended by this jurisdiction.

217.0

– O –

On-Site Treated Nonpotable Water. Nonpotable water, including gray water that has been collected, treated, and intended to be used on-site and is suitable for direct beneficial use. The level of treatment and quality shall comply with the rules promulgated by the Texas Commission on Environmental Quality.

218.0

– P –

Patient Care Room. Any ~~space-room~~ of a health care facility where patients are intended to be examined or treated. [NFPA 99:3.3.127.38]

Category 1 Space. Space in which failure of equipment or a system is likely to cause major injury or death of patients, staff, or visitors. [NFPA 99:3.3.127.1]

Category 2 Space. Space in which failure of equipment or a system is likely to cause minor injury to patient, staff, or visitors. [NFPA 99:3.3.127.2]

Category 3 Space. Space in which the failure of equipment or a system is not likely to cause injury to patients, staff, or visitors but can cause discomfort. [NFPA 99:3.3.127.3]

Category 4 Space. Space in which the failure of equipment or a system is not likely to have a physical impact on patient care. [NFPA 99:3.3.127.4]

Basic Care Room. A room in which the failure of equipment or a system is not likely to cause injury to the patients or caregivers but can cause patient discomfort (Category 3). [NFPA 99:3.3.138.1]

Critical Care Room. A room in which failure of equipment or a system is likely to cause major injury or death of patients or caregivers (Category 1). [NFPA 99:3.3.138.2]

General Care Room. A room in which failure of equipment or a system is likely to cause minor injury to patients or caregivers (Category 2). [NFPA 99:3.3.138.3]

Plumbing License Law. Chapter 1301 of the Texas Occupations Code.

220.0

– R –

Reclaimed Water. Nonpotable water provided by a water/wastewater utility that, as a result of tertiary treatment of domestic wastewater, meets public health requirements of the public health Authority Having Jurisdiction for its intended uses. The level of treatment and quality of the onsite recycled water shall comply with the rules promulgated by the Texas Commission on Environmental Quality and the provisions of the *Construction Code*, whichever is more restrictive.

Residential Code. The City of Houston *Residential Code*, as adopted and amended by this jurisdiction.

222.0

– T –

Toilet Facility. A room or space containing not less than one lavatory and one water closet.

CHAPTER 3

GENERAL REGULATIONS

301.3 Alternate Materials and Methods of Construction Equivalency. Nothing in this code is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this code. Technical documentation shall be submitted to the Authority Having Jurisdiction to demonstrate equivalency. The Authority Having Jurisdiction shall have the authority to approve or disapprove the system, method, or device for the intended purpose.

~~However, the exercise of this discretionary approval by the Authority Having Jurisdiction shall have no effect beyond the jurisdictional boundaries of said Authority Having Jurisdiction. An alternate material or method of construction so approved shall not be considered as in accordance with the requirements, intent, or both of this code for a purpose other than that granted by the Authority Having Jurisdiction where the submitted data does not prove equivalency.~~

301.4 Flood Hazard Areas. ~~All plumbing systems shall be designed and constructed in accordance with Chapter 19 of the *City Code*. Plumbing systems shall be located above the elevation in accordance with the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher.~~

Exception: ~~Plumbing systems shall be permitted to be located below the elevation in accordance with the building code for utilities and attendant equipment or the elevation of the lowest floor, whichever is higher, provided that the systems are designed and installed to prevent water from entering or accumulating within their components and the systems are constructed to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to such elevation.~~

301.4.1 Coastal High Hazard Areas. ~~Plumbing systems in buildings located in coastal high hazard areas shall be in accordance with the requirements of Section 301.4, and plumbing systems, pipes, and fixtures shall not be mounted on or penetrate through walls that are intended to breakaway under flood loads in accordance with the building code.~~

319.2 Medical Gas Systems. The installation of medical gas systems shall be performed by certified installers meeting the requirements of the Texas Board of Plumbing Examiners.

CHAPTER 4

PLUMBING FIXTURES AND FIXTURE FITTINGS

407.4 Transient Public Lavatories. Self-closing or metering faucets shall be installed on lavatories intended to serve the transient public, such as those in, but not limited to, service stations, train stations, airports, restaurants, and convention halls.

Exception: Self-closing or metering faucets installed on lavatories intended to serve the transient public are not required when a faucet meets Health Department regulations to dispense water at or above a specific temperature.

411.2 Water Consumption. Water closets shall have a maximum consumption not to exceed ~~4.6~~ 1.28 gallons (~~6.0~~ 4.85 Lpf) of water per flush, or be a high efficiency fixture, in accordance with ASME A112.19.2/CSA B45.1.

411.2.2 Flushometer Valve Activated Water Closets. Flushometer valve activated water closets shall have a maximum flush volume of ~~4.6~~ 1.28 gallons (~~6.0~~ 4.85 Lpf) of water per flush in accordance with ASME A112.19.2/CSA B45.1.

411.4 Personal Hygiene Devices. Water closets with integral personal hygiene devices shall comply with ASME A112.4.2/CSA B45.16.

412.1 Application. Urinals shall comply with ASME A112.19.2/CSA B45.1, ASME A112.19.19, or CSA B45.5/IAPMO Z124. Urinals shall have an average water consumption not to exceed ~~4~~ 0.5 gallon (~~3.8~~ 1.9 Lpf) of water per flush.

412.1.1 Nonwater Urinals. Nonwater urinals shall have a barrier liquid sealant to maintain a trap seal. Nonwater urinals shall permit the uninhibited flow of waste through the urinal to the sanitary drainage system. Nonwater urinals shall be cleaned and maintained in accordance with the manufacturer's instructions after installation. Where nonwater urinals are installed, not less than one water supplied fixture rated at not less than 1 water supply fixture unit (WSFU) shall be installed upstream on the same drain line to facilitate drain line flow and rinsing. Where nonwater urinals are installed they shall have a water distribution line rough-in to ~~the each individual~~ urinal location to allow for the installation of an approved backflow prevention device in the event of a retrofit.

415.2 Drinking Fountain Alternatives. Where food is consumed indoors, water stations shall be permitted to be substituted for drinking fountains. ~~Bottle filling stations shall be permitted to be substituted for drinking fountains up to 50 percent of the requirements for drinking fountains. Drinking fountains shall not be required for an occupant load for 30 or less.~~

416.2 Water Supply. Emergency eyewash and shower equipment shall not be limited in the water supply flow rates. Where hot and cold water is supplied to an emergency shower or eyewash

station, the temperature of the water supply shall be controlled by a temperature actuated mixing valve complying with ASSE 1071. Flow rate, discharge pattern, and temperature of flushing fluids shall be provided in accordance with ISEA Z358.1 based on the hazardous material.

418.3 Location of Floor Drains. Floor drains shall be installed in the following areas:

- (1) Toilet rooms containing two or more water closets or a combination of one water closet and one urinal, except in a dwelling unit.
- (2) Commercial kitchens and in accordance with Section 704.3.
- (3) Laundry rooms in commercial buildings and common laundry facilities in multi-family dwelling buildings.
- (4) Boiler rooms.
- (5) Industrial and manufacturing facilities, workshops, auto repair shops, and other facilities as required by the Authority Having Jurisdiction where oils, flammable and/or combustible liquids, or other hazardous materials are present, stored, or used. Floor drains shall be connected to appropriately designed interceptors as required by the Authority Having Jurisdiction and the provisions of Chapters 7 and 10 of this code.

422.1 Fixture Count. Each building shall have sanitary facilities as prescribed in Chapter 29, Table 2902.1, of the *Building Code*. Plumbing fixtures shall be provided for the type of building occupancy and in the minimum number shown in Table 422.1. The total occupant load and occupancy classification shall be determined in accordance with the building code. Occupancy classification not shown in Table 422.1 shall be considered separately by the Authority Having Jurisdiction.

~~———— The minimum number of fixtures shall be calculated at 50 percent male and 50 percent female based on the total occupant load. Where information submitted indicates a difference in distribution of the sexes such information shall be used in order to determine the number of fixtures for each sex. Once the occupancy load and occupancy are determined, Table 422.1 shall be applied to determine the minimum number of plumbing fixtures required. Where applying the fixture ratios in Table 422.1 results in fractional numbers, such numbers shall be rounded to the next whole number. For multiple occupancies, fractional numbers shall be first summed and then rounded to the next whole number.~~

{EDITORIAL NOTE: DELETE TABLE 422.1.}

CHAPTER 5

WATER HEATERS

TABLE 501.1(1)
FIRST HOUR RATING¹

Number of Bathrooms	1 to 1.5			2 to 2.5				3 to 3.5			
Number of Bedrooms	1	2	3	2	3	4	5	3	4	5	6
First Hour Rating, ² Gallons	42 38	54 49	54 49	54 49	67 62	67 62	80 74	67 62	80 74	80 74	80 74

For SI units: 1 gallon = 3.785 L

Notes:

1. The first hour rating is found on the "Energy Guide" label.
2. Solar water heaters shall be sized to meet the appropriate first hour rating as shown in the table.

507.13 Installation in Garages. Appliances in garages and in adjacent spaces that open to the garage and are not part of the living space of a dwelling unit shall be installed so that burners, ignition sources, and burner-ignition devices are located not less than 18 inches (457 mm) above the floor unless listed as flammable vapor ignition resistant. [NFPA 54:9.1.10.1]

508.3.2 Access Type. The inside means of access shall be a permanent, ~~or fold-away~~ inside stairway or ladder, terminating in an enclosure, scuttle, or trap door. Such scuttles or trap doors shall be not less than 22 inches by 24 inches (559 mm by 610 mm) in size, disappearing or pull-down attic stairs with a clear opening not less than 22 inches in width and a load capacity of not less than 350 pounds (158.757 kg) or a ladder permanently fastened to the building. Such a ladder or stairway shall not be more than 18 feet (5486 mm) in length between landings and not less than 14 inches (356 mm) in width and shall open easily and safely under all conditions, especially snow; and shall be constructed so as to permit access from the roof side unless deliberately locked on the inside. The ladder shall have rungs spaced not more than 14 inches (356 mm) center to center and not less than 7 inches (177.8 mm) from the face of the wall to the center of each rung. Each stile shall extend 30 inches (762 mm) above the surface to be reached, or as high as possible, if height is limited. Permanent ladders for water heater access need not be provided at parapets or walls less than 30 inches (762 mm) in height. All ladders shall be rated for a load capacity of not less than 350 pounds (158.757 kg).

Not less than 6 feet (1829 mm) of clearance shall be between the access opening and the edge of the roof or similar hazard, or rigidly fixed rails or guards not less than 42 inches (1067 mm) in height shall be provided on the exposed side. Where parapets or other building structures are utilized in lieu of guards or rails, they shall not be less than 42 inches (1067 mm) in height. (NFPA 54:9.4.3.3)

508.4 Appliances in Attics and Under-Floor Spaces. An attic or under-floor space in which an appliance is installed shall be accessible through an opening and passageway not less than as large as the largest component of the appliance, ~~and not less than 22 inches by 30 inches (559 mm by 762 mm)~~, and shall be made accessible by a ladder or disappearing or pull-down attic stairs with a clear opening of not less than 30 inches high and 22 inches in width at its narrowest

point and a load capacity of not less than 350 pounds (158.757 kg) or a ladder permanently fastened to the building with a load capacity of not less than 350 pounds (158.757 kg).

Such a ladder or stairway shall not be more than 18 feet (5486 mm) in length between landings and not less than 14 inches (356 mm) in width. The ladder shall have rungs spaced not more than 14 inches (356 mm) center to center and not less than 7 inches (177.8 mm) from the face of the wall. Each stile is to extend 30 inches (762 mm) above the surface to be reached, or as high as possible, if height is limited.

Exception: A portable ladder may be used for access for water heaters in attics in buildings with lift out ceilings.

CHAPTER 6

WATER SUPPLY AND DISTRIBUTION

603.5.8.1 Discharge of Water Used for Cooling. Water used for cooling of equipment or similar purposes shall not be returned to the potable water distributing system. When discharged to the building drainage system, wastewater shall be discharged through an indirect waste pipe or airgap.

603.5.18.2 Water Treatment Units. Reverse osmosis drinking water treatment units shall meet the requirements of the appropriate standards referenced in Table 1701.1. Waste or discharge from reverse osmosis or other types of water treatment units shall enter the drainage system through an airgap. Water supply for water softeners must be protected by a double check valve assembly.

603.5.21 Chemical Dispensers. The water supply to chemical dispensers shall be protected against backflow. The chemical dispenser shall comply with ASSE 1055 or the water supply shall be protected by one of the following methods:

- (1) Air gap.
- (2) Atmospheric vacuum breaker (AVB).
- (3) Pressure vacuum breaker backflow prevention assembly (PVB);
- (4) Spill-resistant pressure vacuum breaker (SVB).
- (5) Reduced-pressure principle backflow prevention assembly (RP).

TABLE 604.1
MATERIALS FOR BUILDING SUPPLY AND WATER DISTRIBUTION PIPING AND FITTINGS

MATERIAL	BUILDING SUPPLY PIPE AND FITTINGS	WATER DISTRIBUTION PIPE AND FITTINGS	REFERENCED STANDARD(S) PIPE	REFERENCED STANDARD(S) FITTINGS
Copper and Copper Alloys	X	X	ASTM B42, ASTM B43, ASTM B75, ASTM B88, ASTM B135, ASTM B251, ASTM B302, ASTM B447	ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.26, <u>ASME B16.50²</u> , ASME B16.51, <u>ASSE 1061</u>
CPVC	X	X	ASTM D2846, ASTM F441, ASTM F442, CSA B137.6	<u>ASSE 1061</u> , ASTM D2846, ASTM F437, ASTM F438, ASTM F439, ASTM F1970, CSA B137.6
CPVC-AL-CPVC	X	X	ASTM F2855	ASTM D2846
Ductile-Iron	X	X	AWWA C151	ASME B16.4, AWWA C110, AWWA C153

Galvanized Steel	X	X	ASTM A53	–
Malleable Iron	X	X	–	ASME B16.3
PE	X ^{*1}	–	ASTM D2239, ASTM D2737, ASTM D3035, AWWA C901, CSA B137.1	ASTM D2609, ASTM D2683, ASTM D3261, ASTM F1055, CSA B137.1
PE-AL-PE	X	X	ASTM F1282, CSA B137.9	ASTM F1282, ASTM F1974, ASTM F2159, ASTM F2735, ASTM F2769, CSA B137.9
<u>PE-AL-PEX</u>	<u>X</u>	<u>X</u>	<u>ASTM F1986</u>	<u>ASTM F1986</u>
PE-RT	X	X	ASTM F2769, <u>CSA B137.18</u>	<u>ASTM D3261, ASTM F1055, ASSE 1061, ASTM F1807, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F2769, CSA B137.18</u>
PEX	X	X	ASTM F876, ASTM F877, CSA B137.5, AWWA C904 ^{*1}	ASSE 1061, ASTM F877, ASTM F1807, ASTM F1960, ASTM F1961, ASTM F2080, ASTM F2159, ASTM F2735, CSA B137.5
PEX-AL-PEX	X	X	ASTM F1281, CSA B137.10, ASTM F2262	ASTM F1281, ASTM F1974, ASTM F2434, CSA B137.10
PP	X	X	ASTM F2389, CSA B137.11	ASTM F2389, CSA B137.11
PVC	X ^{*1}	–	ASTM D1785, ASTM D2241, AWWA C900	ASTM D2464, ASTM D2466, ASTM D2467, ASTM F1970, <u>AWWA C907</u>
Stainless Steel	X	X	ASTM A269, ASTM A312	–

Notes:

1. ^{*}For building supply or exterior cold-water applications, not for water distribution piping.
2. For brazed fittings only.

604.10.1 Tracer Wire. Plastic materials for building supply piping outside underground shall have an electrically continuous corrosion-resistant blue insulated copper tracer wire or other approved conductor installed adjacent to the piping. Access shall be provided to the tracer wire or the tracer wire shall terminate aboveground at each end of the nonmetallic piping. The tracer wire size shall not be less than 18 AWG and the insulation type shall be suitable for direct burial.

605.9 PEX Plastic Tubing and Joints. PEX plastic tubing and fitting joining methods shall be installed in accordance with the manufacturer's installation instructions and shall comply with Section 605.9.1 and through Section 605.9.23.

605.9.3 Tubing. PEX tubing shall have a minimum chlorine designation code of 5 to meet minimum chlorine resistance at end use condition of 100% of the time at 140°F. Acceptable markings on the tubing are: PEX 5106, PEX 5206, and PEX 5306.

605.12 PVC Plastic Pipe and Joints. PVC plastic pipe and fitting joining methods shall be installed in accordance with the manufacturer's installation instructions and shall comply with Section 605.12.1 through 605.12.3.

PVC piping shall not be exposed to direct sunlight unless the piping does not exceed 24 inches (610 mm) in length and is wrapped with not less than 0.04 of an inch (1.02 mm) thick tape or otherwise protected from UV degradation.

606.8 Draindown Valve. A means for draining the building piping shall be installed at each building entry. The drain down valve shall not be installed in an underground service pipe, but shall be installed at a location in the pipe above ground before the pipe enters the building.

607.2 Potable Water Tanks. ~~P-~~All potable water supply tanks, interior tank coatings, or tank liners intended to supply drinking water shall be in accordance with NSF 61. Soil or waste lines shall not pass directly over nonpressure water supply tanks or over manholes in pressure tanks.

607.3 Venting. Tanks used for potable water shall be tightly covered and vented in accordance with the manufacturer's installation instructions. Such vent shall be screened with a corrosion-resistant material of not less than number-24 100 mesh.

607.4 Overflow. Tanks shall have not less than a 16 square inch (0.01 m²) overflow that is screened with a corrosion-resistant material of not less than number-24 100 mesh. Overflow pipes for gravity tanks shall discharge above and within 6 inches (152.4 mm) of a roof drain, floor drain or catch basin, or they shall discharge into an open hub drain or water supplied sink.

607.6 Cleaning, Painting, Repairing Water Supply Tanks. A potable water supply tank for domestic purposes shall not be lined, painted or repaired with any material that does not meet the current ANSI/AWWA D102 standards and has not been approved by the Authority Having Jurisdiction.

607.7 When Required. When the water pressure from the public water main during flow is insufficient to supply fixtures that are likely to be in simultaneous operation, the supply shall be from a gravity house tank, pressure tank, or booster system. No pumps are permitted to take suction directly from a public water main in this jurisdiction.

Exception: Pumps may be allowed to take suction from a public water main in this jurisdiction when approved by the Authority Having Jurisdiction if the main is of sufficient size as determined and approved by the Water Engineering Division of Houston Public Works.

607.8 Drains. A potable water supply tank shall have a valved drain line located at the lowest point of the tank and discharge water as indirect waste or as required for overflow pipes.

607.9 Tanks—Below-Rim Supply.

- (1) Where a potable water outlet terminates below the rim of a tank, the tank shall have an overflow with a diameter not less than that provided in Table 607.9.

- (2) The potable water inlet to the tank or vat shall terminate a distance of not less than one and one-half times the height to which water can rise in the tank above the top of the overflow.
- (3) The distance from the inlet to the high water level shall be measured from the critical point of the potable water supply overflow.

TABLE 607.9
SIZES OF OVERFLOW PIPES FOR WATER SUPPLY TANKS

<u>Maximum Capacity of Water Supply Line to Tank</u>	<u>Diameter of Overflow Pipe (Inches ID)</u>
<u>0-50≤ gpm</u>	<u>2</u>
<u>>50-150≤ gpm</u>	<u>2 ½</u>
<u>>100-200≤ gpm</u>	<u>3</u>
<u>>200-400≤ gpm</u>	<u>4</u>
<u>400-700 gpm</u>	<u>5</u>
<u>700-1,000 gpm</u>	<u>6</u>
<u>Over 1,000 gpm</u>	<u>8</u>

607.10 Construction of Tanks. Tanks used for potable water supply or to supply standpipes for firefighting equipment only shall be equipped with tight vermin-proof covers. Such tanks shall be vented with a return bend vent pipe having an area not less than one half of the area of the overflow riser. The vent opening and overflow riser shall be covered with a metallic screen of not less than 100 mesh. To provide an air gap, the top of the overflow riser shall not be less than 2 inches (50.8 mm) below the fill connection. The potable water supply shall be protected from contamination via the fire standpipe supply by a divided suction tank or a separate tank for potable water supply or by installing an approved backflow preventer on the downstream side of the fire pumps. When a divided tank is used, the tank shall be divided by a double wall partition extending to the top of the tank, and each wall shall be sealed with a continuous weld between the wall and four sides of the tank. There shall be an air space of not less than 4 inches (101.6 mm) between the walls of the partition, with an opening (not threaded) at the bottom of the partition to give visual evidence of any loss of integrity of the walls of the partition (see Figure 6.5). The air space between the partition walls shall be given a 1.0 PSI air test with all welds soaped to ensure there are no leaks in the partition chamber. The tank fabricator shall furnish a certificate of compliance with this test that also includes a statement that the coating materials are in compliance with the requirements of ANSI/AWWA D102 and NSF 61 and a metal nameplate on the tank giving the name of the fabricator, the date of fabrication, and a serial number. All tanks for potable water service shall be constructed of new material to assure against possibility of contamination from previous usage.

607.11 Piping. Water piping from potable gravity and suction tanks to the suction side of the water pumps and from the discharge end of the pumps to the check valve shall be galvanized.

607.12 Vacuum Breaker. Pressure tanks used for supplying water to the potable water distribution system, to both the fire standpipes and the potable system or to supply standpipes for fire equipment only, shall be equipped with an acceptable vacuum breaking device located on the top of the tank. The air inlet of this device shall be covered with a metallic screen of not less than 100 mesh.

608.5 Discharge Piping. The discharge piping that servesing a temperature relief valve, pressure relief valve, or combination of both, shall have no valves, obstructions, or means of isolation and ~~be provided comply~~ with the following:

- (1) ~~Equal Discharge pipe shall be equal~~ to the size of the valve outlet and shall discharge full size to the flood level of the area receiving the discharge and pointing down.
- (2) Materials shall be rated at not less than the operating temperature of the system and approved for such use or shall comply with ASME A112.4.1.
- (3) Discharge pipe shall discharge independently by gravity through an air gap into the drainage system or outside of the building with the end of the pipe not exceeding 2 feet (610 mm) and not less than 6 inches (152 mm) above the ground and pointing downwards.
- (4) Discharge pipe shall discharge in such a manner that does not cause personal injury or structural damage.
- (5) No part of such discharge pipe shall be trapped or subject to freezing.
- (6) The terminal end of the pipe shall not be threaded.
- (7) Discharge from a relief valve into a water heater pan shall be prohibited.

609.3.1 Sleeves Through Floors. Approved materials shall be installed without joints and must be sleeved where they penetrate the floor. Pipe sleeves shall have a minimum wall thickness of 1/16 inch. No portion of the water pipe shall be in contact with the concrete. In water services that are 3 inches or larger, one fitting may be installed under the slab within 5 feet of the exterior of the building. The fitting shall be installed to allow for replacement without any damage being done to the structure. Galvanized pipe shall not be used in or under slabs.

609.4 Testing. Upon completion of a section or of the entire hot and cold water supply system, it shall be tested and proved tight under a water pressure not less than the working pressure under which it is to be used. The water used for tests shall be obtained from a potable source of supply. Except for plastic piping, a 50 psi (345 kPa) air pressure shall be permitted to be substituted for the water test. In either method of test, the piping shall withstand the test without leaking for a period of not less than 15 minutes.

Exception: PEX, PP or PE-RT tube shall be permitted to be tested with air where permitted by the manufacturer's instructions.

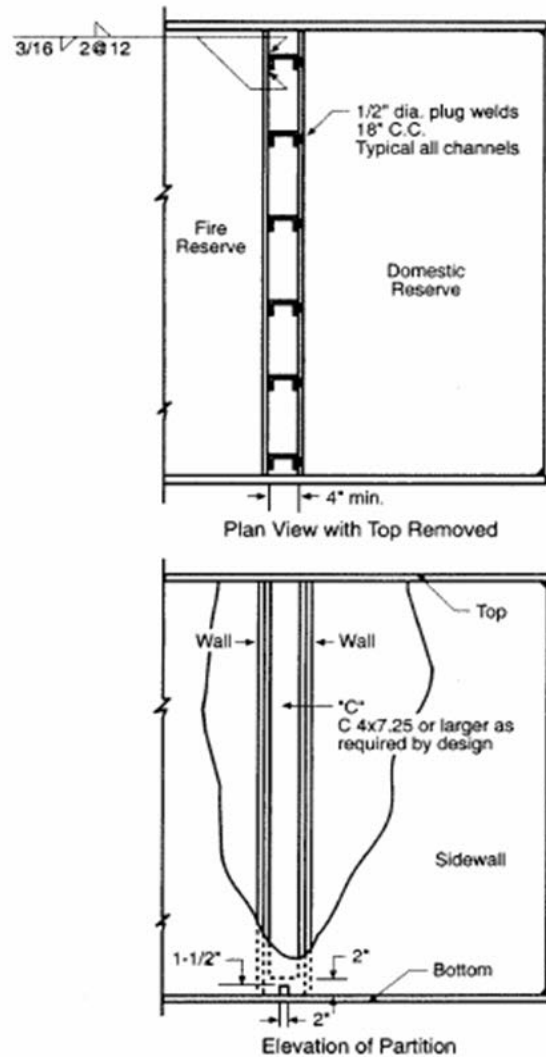
609.11 Pipe Insulation. Insulation of domestic hot water piping shall be in accordance with the Energy Conservation Code, Section 609.11.1 and Section 609.11.2.

~~**609.11.2 Pipe Insulation Wall Thickness.** Hot water pipe insulation shall have a minimum thickness of not less than the diameter of the pipe for a pipe up to 2 inches (50 mm) in diameter. Insulation wall thickness shall be not less than 2 inches (51 mm) for a pipe of 2 inches (50 mm) or more in diameter.~~

Exceptions:

- (1) ~~Piping that penetrates framing members shall not be required to have pipe insulation for the distance of the framing penetration.~~
- (2) ~~Hot water piping between the fixture control valve or supply stop and the fixture or appliance shall not be required to be insulated.~~

FIGURE 6.5



1. Tank must have a minimum of a 24-inch manway on each compartment.
2. Tank must have a ladder on the outside to access both manways.
3. Tank must have interior ladders inside to access bottom of tank from each manway.

CHAPTER 7

SANITARY DRAINAGE

701.2 Drainage Piping. Materials for drainage piping shall be in accordance with one of the referenced standards in Table 701.2 except that:

- (1) ~~No~~ Galvanized wrought-iron or galvanized steel pipe shall not be used underground and shall be kept not less than 6 inches (152 mm) aboveground.
- (2) ABS and PVC DWV piping installations shall be installed in accordance with applicable standards referenced in Table 1701.1 and Chapter 14 "Firestop Protection." Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a flame-spread index of not more than 25 and a smoke-developed index of not more than 50, where tested in accordance with ASTM E84 or UL 723. All tests shall comply with these standards including the sample size width and length. Plastic pipe shall not be tested when filled with water.
- (3) No vitrified clay pipe or fittings shall be used aboveground or where pressurized by a pump or ejector. Vitrified clay pipes and/or fittings shall be kept not less than 12 inches (305 mm) belowground.
- (4) Copper or copper alloy tube for drainage and vent piping shall have a weight of not less than that of copper or copper alloy drainage tube type DWV.
- (5) Stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than 6 inches (152 mm) aboveground.
- (6) Cast-iron soil pipe and fittings and the stainless-steel couplings used to join these products shall be listed and tested in accordance with standards referenced in Table ~~1701.1~~ 701.2. Such pipe and fittings shall be marked with the country of origin, manufacturer's name or registered trademark as defined in the product standards, the third party certifier's mark, and the class of the pipe or fitting ~~and identification of the original manufacturer in addition to markings required by referenced standards.~~
- (7) SDR 35 plastic pipe shall be the approved material for drainage piping size 8 inches or larger.

701.8 Below Slab. Piping installed below a slab on grade or mat type foundation shall be not less than 2 inches in diameter.

704.3 Commercial Sinks. Pot sinks, scullery sinks, dishwashing sinks, silverware sinks, and other similar fixtures shall be connected indirectly to the drainage system. ~~A floor drain shall be provided adjacent to the fixture, and the fixture shall be connected on the sewer side of the floor drain trap, provided that no other drainage line is connected between the floor drain waste connection and the fixture drain. The fixture and floor drain shall be trapped and vented in accordance with this code.~~

711.1 General. Drainage connections shall not be made into a drainage piping system within 8 feet (2438 mm) of a vertical to horizontal change of direction of a stack containing suds-producing

fixtures. Bathtubs, Laundries, washing machine standpipes, kitchen sinks, and dishwashers shall be considered suds-producing fixtures. Where parallel vent stacks are required, they shall connect to the drainage stack at a point 8 feet (2438 mm) above the lowest point of the drainage stack.

Exceptions:

- (1) Single-family residences.
- (2) Stacks receiving the discharge from less than three stories of plumbing fixtures.

713.4 Public Sewer Availability. The public sewer shall be permitted to be considered as not being available where such public sewer or a building or an exterior drainage facility connected thereto is located more than ~~200~~ 300 feet (60 960 91 440 mm) from ~~a proposed building or exterior drainage facility on~~ a lot or premises that abuts and is served by such public sewer.

715.1 Materials. The building sewer, beginning 2 feet (610 mm) from a building or structure, shall be of such materials as prescribed in this code. Pipe sizes 6 inches and smaller shall be PVC Schedule 40, and pipe sizes 8 inches or larger shall be permitted to be SDR 35.

715.3 Existing Sewers. Replacement of existing building sewer and building storm sewers using trenchless methodology and materials shall be installed in accordance with ASTM F1216. Cast-iron soil pipes and fittings shall not be repaired or replaced by using this method aboveground or belowground. Replacement using cured-in-place pipe liners shall not be used on collapsed piping or when the existing piping is compromised.

722.1 Building (House) Sewer. An abandoned building (house) sewer, or part thereof, shall be plugged or capped in an approved manner within 5 feet (1524 mm) of the property line. Before any building may be demolished, a sewer disconnect permit shall be obtained and an inspection made to verify that the sewer has been properly capped within 5 feet of the property line and that the water service has been disconnected and capped at the meter.

724.0 Private Sewage Disposal Systems.

724.1 General. Private sewage disposal systems shall conform to all applicable state laws and regulations, including the Construction Standards for Private Sewage Facilities, as published by the Texas Commission on Environmental Quality.

CHAPTER 8

INDIRECT WASTES

804.2 Accessible Receptors. Accessible indirect waste receptors may be fabricated utilizing a “P” trap, riser stub, and an increaser to form a funnel.

810.1 High Temperature Discharge. No steam pipe shall be directly connected to a plumbing or drainage system, nor shall water having a temperature above 140°F (60°C) be discharged under pressure directly into a drainage system. Pipes from boilers shall discharge by means of indirect waste piping, as determined by the Authority Having Jurisdiction or the boiler manufacturer's recommendations. Such pipes shall be permitted to be indirectly connected by discharging into an open or closed condenser or an intercepting sump of an approved type that will prevent the entrance of steam or such water under pressure into the drainage system. Closed condensers or sumps shall be provided with a vent that shall be taken off the top and extended separately, full size above the roof. Condensers and sumps shall be properly trapped at the outlet with a deep seal trap extending to within 6 inches (152 mm) of the bottom of the tank. The top of the deep seal trap shall have a $\frac{3}{4}$ of an inch (19.1 mm) opening located at the highest point of the trap to serve as a siphon breaker. Outlets shall be taken off from the side in such a manner as to allow a waterline to be maintained that will permanently occupy not less than one-half the capacity of the condenser or sump. Inlets shall enter above the waterline. Wearing plates or baffles shall be installed in the tank to protect the shell. The sizes of the blowoff line inlet, the water outlets, and the vent shall be as shown in Table 810.1. The contents of condensers receiving steam or hot water under pressure shall pass through an open sump before entering the drainage system. Water above 113°F (45°C) shall not be discharged to the jurisdiction's drainage system.

811.9 Sizing. An approved vented neutralizing basin is a basin with a bolted removable cover and dip-pipe outlet that is constructed of acid-resistant material such as molded seamless polyethylene, one-piece acid-proof chemical stoneware, lined carbon steel, or other material approved by the Authority Having Jurisdiction. Neutralizing basins shall be sized according to Table 811.9.

811.10 Material. Neutralization basins shall contain neutralizing material such as pieces of marble or limestone, 1 inch (25.4 mm) to 3 inches (76.2 mm) in size, so as to render effluent to a pH not less than 5 nor more than 11 before the effluent is discharged into the sewer system.

811.11 Sample Wells. Each chemical neutralization basin shall have a sample well on the discharge side of the neutralization basin.

TABLE 811.9
SIZES OF NEUTRALIZATION BASINS^{1,2}

<u>Number of Sinks</u>	<u>Tank Capacity (Gallons)</u>
<u>1</u>	<u>5</u>
<u>4</u>	<u>15</u>
<u>8</u>	<u>30</u>
<u>16</u>	<u>55</u>
<u>25</u>	<u>100</u>
<u>40</u>	<u>150</u>
<u>60</u>	<u>200</u>
<u>75</u>	<u>275</u>
<u>100</u>	<u>350</u>
<u>200</u>	<u>675</u>
<u>300</u>	<u>1200</u>
<u>500</u>	<u>2000</u>

Notes:

1. Tank capacities are measured from invert inlet.
2. Neutralization basins receiving intermittent discharge from equipment shall be sized according to the manufacturer's recommendations. Sizing criteria shall be shown on drawings.

CHAPTER 9

VENTS

903.1 Applicable Standards. Vent pipe and fittings shall comply with the applicable standards referenced in Table 701.2, except that:

- (1) ~~No~~ Galvanized steel or 304 stainless steel pipe shall not be installed underground and shall be not less than 6 inches (152 mm) aboveground.
- (2) ABS and PVC DWV piping installations shall be in accordance with ~~the applicable standards referenced in Table 1701.1, and Chapter 14 "Firestop Protection."~~ Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a flame-spread index of not more than 25 and a smoke-developed index of not more than 50 where tested in accordance with ASTM E84 or UL 723. All tests shall comply with these standards including the sample size width and length. Plastic pipe shall not be tested when filled with water.

CHAPTER 10

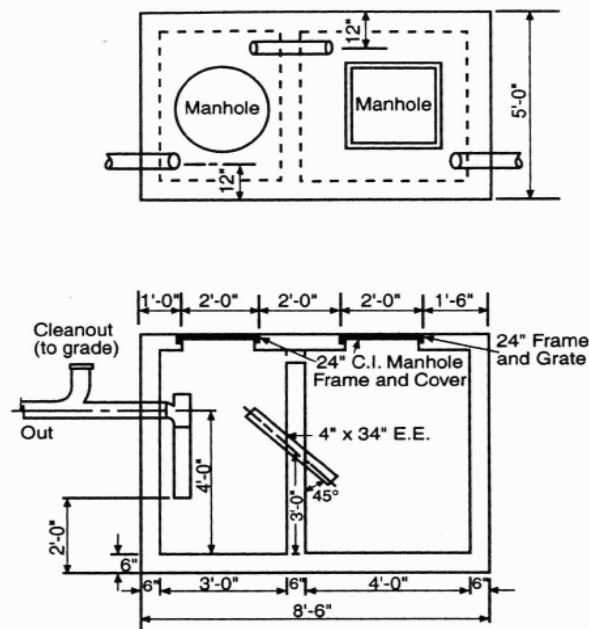
TRAPS AND INTERCEPTORS

1007.2 Trap Seal Primers. Potable water supply trap seal primer valves shall comply with ASSE 1018. Drainage and electronic design type trap seal primer devices shall comply with ASSE 1044.

1009.8 Sample Wells. Each interceptor shall be provided with a sample well on the discharge side of the interceptor.

1011.1 General. A private or public wash rack, or floor or slab used for cleaning machinery or machine parts shall be adequately protected against storm or surface water and shall drain or discharge into an approved interceptor (clarifier). See Figure M.T-1 for minimum size and construction criteria.

FIGURE M.T-1
MINIMUM SIZE AND CONSTRUCTION



Based on Usage of Precast Unit
Mud and Grease Interceptor for Wash Rack

1012.1 General. Laundry equipment in commercial and industrial buildings that does not have integral strainers shall discharge into an approved lint interceptor having a wire basket or similar

device that is removable for cleaning and that will prevent passage into the drainage system of solids $\frac{1}{2}$ of an inch (12.7 mm) or larger in maximum dimension, such as string, rags, buttons, or other solid materials detrimental to the public sewerage system. For lint interceptors other than a mechanical lint interceptor properly sized to manufacturer's instructions, see Figures L.T-1, L.T-2, and L.T-3 for minimum size and construction criteria.

1014.1.3 Food Waste Disposers and Dishwashers. No food waste disposer or dishwasher shall be connected to or discharge into a grease interceptor. Commercial food waste disposers shall be permitted to discharge directly into the building's drainage system.

Exception: Food waste disposers shall be permitted to discharge to grease interceptors that are designed to receive the discharge of food waste.

TABLE 1014.2.1
HYDROMECHANICAL GREASE INTERCEPTOR SIZING USING GRAVITY FLOW RATES¹

DIAMETER OF GREASE WASTE PIPE (inches)	MAXIMUM FULL PIPE FLOW (gpm) ²	SIZE OF GREASE INTERCEPTOR	
		ONE-MINUTE DRAINAGE PERIOD (gpm)	TWO-MINUTE DRAINAGE PERIOD (gpm)
2	20	20	10
3	60	75	35
4	125	150	75
5	230	250	125
6	375	500 400	250 200

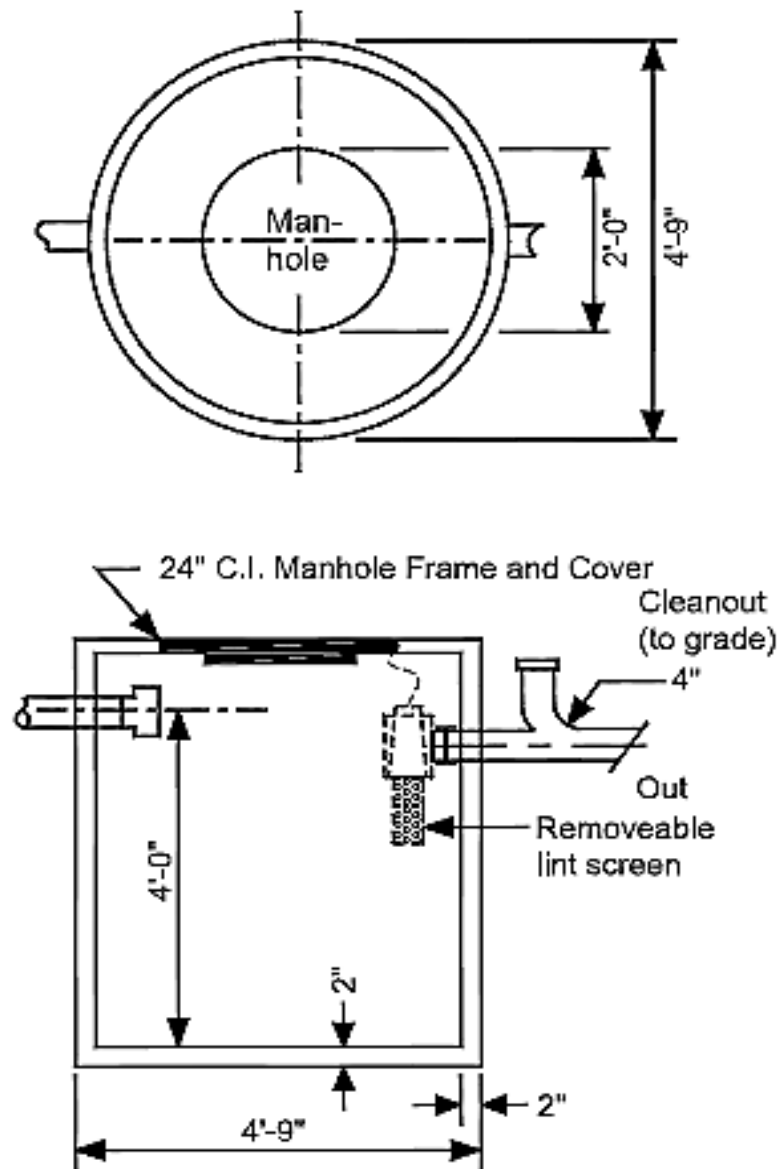
For SI units: 1 inch = 25 mm, 1 gallon per minute = 0.06 L/s

Notes:

1. For interceptor sizing by fixture capacity see the example below.
2. $\frac{1}{4}$ inch slope per foot (20.8 mm/m) based on Manning's formula with friction factor $N = .012$

1014.3.5 Construction Requirements. Gravity grease interceptors shall be designed to remove grease from effluent and shall be sized in accordance with this section. Gravity grease interceptors shall also be designed to retain grease until accumulations can be removed by pumping the interceptor. ~~It is recommended that a~~ A sample box well shall be located at the outlet end of gravity grease interceptors so that the Authority Having Jurisdiction can periodically sample effluent quality.

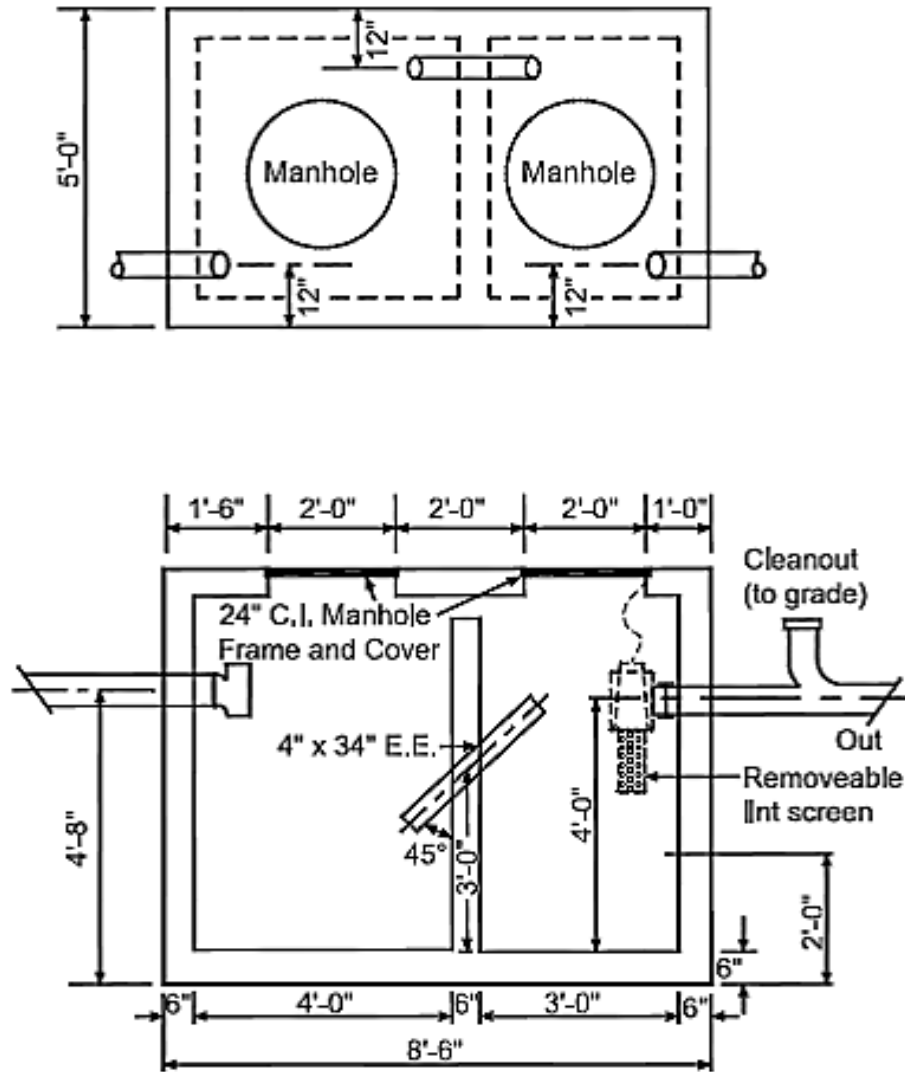
FIGURE L.T-1



Based on Usage of Precast Unit

Lint Interceptor Washateria Operation for 5 to 10 Machines

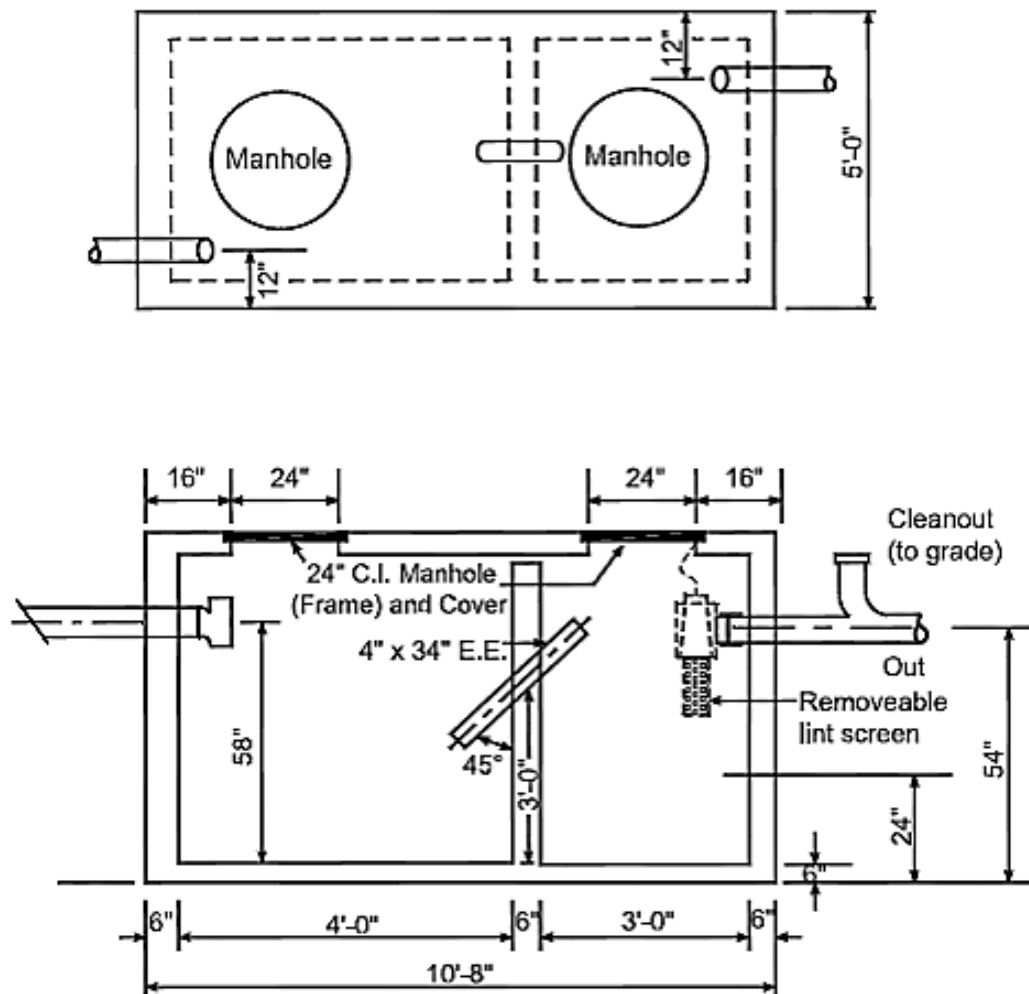
FIGURE L.T-2



Based on Usage of Precast Unit

Lint Interceptor Washateria Operation for 11 to 20 Machines

FIGURE L.T-3



Based on Usage of Precast Unit

Lint Interceptor Washateria Operation for 21 to 30 Machines

Larger establishments and commercial-type laundries require an approved design by the project professional engineer.

CHAPTER 11

STORM DRAINAGE

1101.4 Material Uses. Pipe, tube, and fittings conveying rainwater shall be of such materials and design as to perform their intended function to the satisfaction of the Authority Having Jurisdiction. Conductors within a vent or shaft shall be of cast-iron, galvanized steel, wrought iron, copper, copper alloy, lead, Schedule 40 ABS DWV, Schedule 40 PVC DWV, SDR 35 for 8 inch or larger PVC, stainless steel 304 or 316L [stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than 6 inches (152 mm) aboveground], or other approved materials, and changes in direction shall be in accordance with the requirements of Section 706.0. ABS and PVC DWV piping installations shall be installed in accordance with Chapter 14 "Firestop Protection." Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a flame-spread index of not more than 25 and a smoke developed index of not more than 50, where tested in accordance with ASTM E84 or UL 723. All tests shall comply with all requirements of these standards including the sample size width and length. Plastic pipe shall not be tested when filled with water.

1101.4.2 Conductors. Conductors installed aboveground in buildings shall be in accordance with the applicable standards referenced in Table 701.2 for aboveground drain, waste, and vent pipe. Conductors installed aboveground-level shall be of:

- ~~(1)~~ Seamless copper water tube, Type K, L, or M;
- ~~(2)~~ Schedule 40 copper pipe or Schedule 40 copper alloy pipe;
- ~~(3)~~ Type DWV copper drainage tube;
- ~~(4)~~ Service weight cast-iron soil pipe or hubless cast-iron soil pipe;
- ~~(5)~~ Standard weight galvanized steel pipe;
- ~~(6)~~ Stainless steel 304 or 316L [stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than 6 inches (152 mm) aboveground];
- ~~(7)~~ Schedule 40 ABS or Schedule 40 PVC plastic pipe;
- ~~(8)~~ SDR 35 plastic pipe 8 inches or longer.

1101.4.3 Leaders. Leaders installed outside shall be in accordance with the applicable standards referenced in Table 701.2 for aboveground drain, waste, and vent pipe; aluminum sheet metal; galvanized steel sheet metal; ~~or copper sheet metal;~~ or SDR 35 plastic pipe 8 inches or longer.

1101.12.1 Primary Roof Drainage. Roof areas of a building shall be drained by roof drains or gutters. The location and sizing of drains and gutters shall be coordinated with the structural design and pitch of the roof. Unless otherwise required by the Authority Having Jurisdiction, roof drains, gutters, vertical conductors or leaders, and horizontal storm drains for primary drainage shall be sized based on a storm rainfall rate of 8 inches per hour of 60 minutes duration and 100-year return period. ~~Refer to Table D 101.1 (in Appendix D) for 100-year, 60 minute storms at various locations.~~

1101.12.2.2.2 Combined System. The secondary roof drains shall connect to the vertical piping of the primary storm drainage conductor downstream of the last horizontal offset located below the roof. The primary storm drainage system shall connect to the building storm water that connects to an underground public storm sewer. The combined secondary and primary roof drain systems shall be sized in accordance with Section 1103.0 ~~based on double the rainfall rate for the local area.~~

1101.17 Enclosed Parking Garages. Drains within an enclosed parking garage shall be routed to the sanitary waste drainage system. Drains routed to a sanitary waste drainage system shall be provided with appropriate traps and a vent system. Vent systems shall comply with Chapter 9. Drains located on the top level of the enclosed parking garage and directly exposed to rainwater shall be drained to the storm drainage system. Traps and vents are not required on these drains.

1101.18 Open Parking Garages. All drains exposed to rainwater and connected to the storm drainage system within an open parking garage shall not require a trap or a vent system.

TABLE 1101.8
SIZING OF HORIZONTAL RAINWATER PIPING^{1, 2}

SIZE OF PIPE	FLOW (1/8 in./ft. slope)	MAXIMUM ALLOWABLE HORIZONTAL PROJECTED ROOF AREAS AT VARIOUS RAINFALL RATES (square feet)						
inches	gpm	1 (in/h)	2 (in/h)	3 (in/h)	4 (in/h)	5 (in/h)	6 (in/h)	8 (in/h)
3	34	3288	1644	1096	822	657	548	<u>411</u>
4	78	7520	3760	2506	1880	1504	1253	<u>906</u>
5	139	13 360	6680	4453	3340	2672	2227	<u>1670</u>
6	222	21 400	10 700	7133	5350	4280	3566	<u>2675</u>
8	478	46 000	23 000	15 330	11 500	9200	7670	<u>5750</u>
10	860	82 800	41 400	27 600	20 700	16 580	13 800	<u>10 350</u>
12	1384	133 200	66 600	44 400	33 300	26 650	22 200	<u>16 650</u>
15	2473	238 000	119 000	79 333	59 500	47 600	39 650	<u>29 750</u>

SIZE OF PIPE	FLOW 1/4 in./ft. Slope	MAXIMUM ALLOWABLE HORIZONTAL PROJECTED ROOF AREAS AT VARIOUS RAINFALL RATES (square feet)						
inches	gpm	1 (in/h)	2 (in/h)	3 (in/h)	4 (in/h)	5 (in/h)	6 (in/h)	8 (in/h)
3	48	4640	2320	1546	1160	928	773	<u>580</u>
4	110	10 600	5300	3533	2650	2120	1766	<u>1325</u>
5	196	18 880	9440	6293	4720	3776	3146	<u>2360</u>
6	314	30 200	15 100	10 066	7550	6040	5033	<u>3775</u>

8	677	65 200	32 600	21 733	16 300	13 040	10 866	<u>8150</u>
10	1214	116 800	58 400	38 950	29 200	23 350	19 450	<u>14 600</u>
12	1953	188 000	94 000	62 600	47 000	37 600	31 350	<u>23 500</u>
15	3491	336 000	168 000	112 000	84 000	67 250	56 000	<u>43 000</u>

SIZE OF PIPE	FLOW (1/2 in./ft. Slope)	MAXIMUM ALLOWABLE HORIZONTAL PROJECTED ROOF AREAS AT VARIOUS RAINFALL RATES (square feet)						
		1 (in/h)	2 (in/h)	3 (in/h)	4 (in/h)	5 (in/h)	6 (in/h)	8 (in/h)
inches	gpm							
3	68	6576	3288	2192	1644	1310	1096	<u>822</u>
4	156	15 040	7520	5010	3760	3010	2500	<u>1880</u>
5	278	26 720	13 360	8900	6680	5320	4450	<u>3340</u>
6	445	42 800	21 400	14 267	10 700	8580	7140	<u>5350</u>
8	956	92 000	46 000	30 650	23 000	18 400	15 320	<u>11 500</u>
10	1721	165 600	82 800	55 200	41 400	33 150	27 600	<u>20 700</u>
12	2768	266 400	133 200	88 800	66 600	53 200	44 400	<u>33 300</u>
15	4946	476 000	238 000	158 700	119 000	95 200	79 300	<u>59 500</u>

For SI units: 1 inch = 25 mm, 1 gallon per minute = 0.06 L/s, 1/8 inch per foot = 10.4 mm/m, 1 inch per hour = 25.4 mm/h, 1 square foot = 0.0929 m²

Notes:

1. The sizing data for horizontal piping are based on the pipes flowing full.
2. For rainfall rates other than those listed, determine the allowable roof area by dividing the area given in the 1 inch per hour (25.4 mm/h) column by the desired rainfall rate.

1107.0 Engineered Storm Drainage System.

1107.1 General. The design and sizing of a storm drainage system shall be permitted to be determined by generally accepted engineering practices. A registered design professional shall design the storm drainage system, and Section 301.5 shall govern the approval of such system.

1107.2 Siphonic Roof Drainage Systems. The design of a siphonic roof drainage system shall comply with ASPE 45.

1107.3 Siphonic Roof Drains. Siphonic roof drains shall comply with ASME A112.6.9.

CHAPTER 12

FUEL GAS PIPING

1201.1 Applicability. The regulations of this chapter shall govern the installation fuel gas piping, other than service pipe, in or in connection with a building, structure or within the property lines of premises ~~up to 5 pounds force per square inch (psi) (34 kPa), other than service pipe~~. Fuel oil piping systems shall be installed in accordance with NFPA 31.

Exception: Gas piping, meters, gas-pressure regulators, and other appurtenances used by the serving gas supplier in distribution of gas, other than undiluted LP-Gas. [NFPA 54:1.1.1.2(16)]

1202.3 Applications. This code shall not apply to the following (reference standards for some of which appear in Chapter 17):

- (1) Portable LP-Gas appliances and equipment that are not connected to a fixed fuel piping system.
- (2) Installation of appliances such as brooders, dehydrators, dryers, and irrigation equipment used for agricultural purposes.
- (3) Raw material (feedstock) applications, except for piping to special atmosphere generators.
- (4) ~~Oxygen~~ Portable oxygen-fuel gas cutting and welding systems.
- (5) ~~Industrial gas applications using such gases as acetylene and acetylenic compounds, hydrogen, ammonia, carbon monoxide, oxygen, and nitrogen.~~
- (5) Petroleum refineries, pipeline compressor or pumping stations, loading terminals, compounding plants, refinery tank farms, and natural gas processing plants.
- (6) Large integrated chemical plants or portions of such plants where flammable or combustible liquids or gases are produced by chemical reactions or used in chemical reactions.
- (7) LP-Gas installations at utility gas plants.
- (8) Liquefied natural gas (LNG) installations.
- (9) Fuel gas piping in electric utility ~~power~~ plants.
- (10) Proprietary items of equipment, apparatus, or instruments such as gas-generating sets, compressors, and calorimeters.
- (11) LP-Gas equipment for vaporization, gas mixing, and gas manufacturing.
- (12) LP-Gas piping for buildings under construction or renovations that are not to become part of the permanent building piping system—that is, temporary fixed piping for building heat.
- (13) Installation of LP-Gas systems for railroad switch heating.
- (14) Installation of LP-Gas and compressed natural gas (CNG) systems on vehicles.
- (15) Gas piping, meters, gas-pressure regulators, and other appurtenances used by the serving gas supplier in distribution of gas, other than undiluted LP-Gas. [NFPA 54:1.1.1.2]
- (16) Liquid petroleum gas facilities regulated by the Railroad Commission of Texas pursuant to Chapter 113 of the Texas Natural Resources Code.

1202.4 Other Requirements. All fuel oil facilities and piping shall conform to the requirements of Chapter 57 of the *Fire Code*.

1202.5 Gas Tests. A permit shall be required for all gas tests. The licensed master plumber registered with the city as the contractor of record for the permit shall perform a complete gas systems test and inspection with a city plumbing inspector present in the following circumstances:

- (1) During rough inspection and before startup of new installations.
- (2) Before resumption of use of a system where service has been interrupted for more than 365 days.
- (3) Before resumption of use of a system where service has been interrupted for any period of time due to one or more leaks or a fire.
- (4) When the system was found to be unsafe by the serving gas supplier or the Authority Having Jurisdiction.
- (5) Where required by the *Fire Code*.
- (6) Where service is not commenced within 180 days following a gas test.

1203.3.1 Rough Piping Inspection. This inspection shall be made after gas piping within the building authorized by the permit has been installed and before such piping has been covered or concealed or fixture or appliance has been attached thereto. This inspection shall include a determination that the gas piping size, material, and installation meet the requirements of this code. This inspection shall also include a pressure test. The gas piping shall pass an air pressure test of 25 psi (172.3689 kPa) for a period of 15 minutes with no perceptible drop.

Exception: For metal welded piping, and for piping carrying gas at pressure greater than 14 inches (0.4 m) water column pressure (3.4878 kPa), the test pressure shall be not less than 100 psi (689 kPa) for 30 minutes. These tests shall be made using air, CO², or nitrogen pressure only and shall be made in the presence of the inspector. The permit holder shall furnish all necessary apparatus for conducting tests.

1203.3.2 Final Piping Inspection. This inspection shall be made after piping authorized by the permit has been installed and after portions thereof that are to be covered or concealed are so concealed and before any fixture, appliance, or shutoff valve has been attached thereto, and after the completed system is ready to be put into service. This inspection shall comply with Section 1213.34. Test gauges used in conducting tests shall be in accordance with Section 318.0.

1208.6.1.3 Additional Requirements. Gas meters shall not be located under a show window, under interior stairways, or in engine, boiler, heater, or electric meter rooms. Gas meters shall be located at least 3 feet (914 mm) from known sources of ignition or air intakes.

1210.1.6 Piping Underground Beneath Buildings. Where gas piping is installed underground beneath buildings, the piping shall be one of the following:

- (1) Encased in an approved conduit designed to withstand the imposed loads and installed in accordance with Section 1210.1.6.1 or Section 1210.1.6.2.

- (2) A piping or encasement system listed for installation beneath buildings. [NFPA 54:7.1.6]
- (3) Pipe must be removable without causing damage to the structure. Sleeves for corrugated stainless-steel piping may terminate within the building.

1210.1.6.1 Conduit with One End Terminating Outdoors. The conduit shall extend into an accessible portion of the building and, at the point where the conduit terminates in the building, the space between the conduit and the gas piping shall be sealed to prevent the possible entrance of a gas leakage. Where the end sealing is of a type that will retain the full pressure of the pipe, the conduit shall be designed for the same pressure as the pipe. The conduit shall extend not less than 4 inches (102 mm) outside the building, be vented outdoors above finished ground level, and be installed so as to prevent the entrance of water and insects, and be graded to the outside. [NFPA 54:7.1.6.2]

1210.1.7.2 Tracer Wire. An electrically continuous corrosion-resistant tracer wire (not less than AWG 14 yellow) or tape shall be buried with the plastic pipe to facilitate locating. ~~One~~ Both ends of the tracer wire or tape shall terminate ~~be brought aboveground at a building wall or riser.~~ [NFPA 54:7.1.7.3]

1210.2.4.3 Piping on Roof Tops. Gas piping installed on a roof surface shall be elevated above the roof surface and shall be supported in accordance with Table 1210.2.4.1. [NFPA 54:7.2.5.4]

1210.3.4 Piping in Floors. In industrial occupancies, gas piping in solid floors such as concrete shall be laid in channels in the floor and covered to permit access to the piping with minimum damage to the building. Where piping in floor channels is exposed to excessive moisture or corrosive substances, the piping shall be protected in an approved manner. [NFPA 54:7.3.5.1]

Exception: ~~In other than industrial occupancies and where approved by the Authority Having Jurisdiction, gas piping embedded in concrete floor slabs constructed with portland cement shall be surrounded with not less than 1½ inches (38 mm) of concrete and shall not be in physical contact with other metallic structures such as reinforcing rods or electrically neutral conductors. Piping, fittings, and risers shall be protected against corrosion in accordance with Section 1208.5.6. Piping shall not be embedded in concrete slabs containing quick-set additives or cinder aggregate.~~ [NFPA 54:7.3.5.2]

1210.4.3 Ventilation. A chase shall be ventilated to the outdoors and only at the top. The openings shall have a minimum free area [in square inches (m²)] equal to the product of one-half of the maximum pressure in the piping [in psi (kPa)] times the largest nominal diameter of that piping [in inches (mm)], or the cross-sectional area of the chase, whichever is smaller. Where more than one fuel gas piping system is present, the free area for each system shall be calculated and the largest area used. [NFPA 54:7.4.3]

1211.2 Bonding of CSST Gas Piping. CSST gas piping systems shall be bonded to the electrical service grounding electrode system. The bonding jumper shall connect to a metallic pipe or fitting

between the point of delivery and the first downstream CSST fitting. The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent. Gas piping systems that contain one or more segments of CSST shall be bonded in accordance with this section. [NFPA 54:7.13.2]

1211.2.1 Bonding Jumper Length. The length of the jumper between the connection to the gas piping system and the grounding electrode system shall not exceed 75 feet (22,860 mm). Any additional electrodes shall be bonded to the electrical service grounding electrode system or, where provided, lightning protection grounding electrode system. [NFPA 54:7.13.2.3]

1211.2.2 Bonding Connections. Bonding connections shall be in accordance with NFPA 70. [NFPA 54:7.13.2.4]

1211.2.3 Devices Used for Bonding. Devices used for the bonding connection shall be listed for the application in accordance with UL 467. [NFPA 54:7.13.2.5]

1211.6 Electrical Connections. ~~Electrical~~ All electrical connections between wiring and electrically operated control devices in a piping system shall comply with the requirements of NFPA 70. [NFPA 54:7.15.1]

1213.1.4 Piping System. A piping system shall be tested as a complete unit or in sections. Under no circumstances shall a valve in a line be used as a bulkhead between gas in one section of the piping system and test medium in an adjacent section, unless ~~two valves are installed in series with a valved "telltale" located between these valves~~ a double block and bleed valve system is installed. A valve shall not be subjected to the test pressure unless it is determined that the valve, including the valve-closing mechanism, is designed to safely withstand the pressure. [NFPA 54:8.1.1.5]

1213.3 Test Pressure. This inspection shall include an air, CO₂, or nitrogen pressure test, at a pressure of at least 6 inches (152 mm) of mercury, measured with a manometer or slope gauge which time the gas piping shall stand a pressure of not less than 10 psi (69 kPa) gauge pressure. Test pressures shall be held for a length of time satisfactory to the Authority Having Jurisdiction, but in no case less than 15 minutes with no perceptible drop in pressure. ~~For welded piping, and for piping carrying gas at pressures in excess of 14 inches water column pressure (3.5 kPa), the test pressure shall be not less than 60 psi (414 kPa) and shall be continued for a length of time satisfactory to the Authority Having Jurisdiction, but in no case for less than 30 minutes. For CSST carrying gas at pressures in excess of 14 inches water column (3.5 kPa) pressure, the test pressure shall be 30 psi (207 kPa) for 30 minutes. These tests shall be made using air, CO₂, or nitrogen pressure and shall be made in the presence of the Authority Having Jurisdiction. Necessary apparatus for conducting tests shall be furnished by the permit holder. Test gauges used in conducting tests shall be in accordance with Section 318.0. The test pressure shall not be less than twice the pressure that the system will be subjected to when in service. These tests shall be made in the presence of an inspector. All necessary apparatus for conducting tests shall be furnished by the permit holder. A final inspection shall be required for all gas systems that require a permit as specified in Section 1202.5. For annual gas tests and GTO's, the tests shall be done at the pressure required for the final gas inspection.~~

Exception: In lieu of the mercury gauge one of the following may be used:

- (1) Low Pressure Systems – A low pressure diaphragm gauge with a minimum dial size of 3½ inches with a set hand and a pressure range not to exceed 6 psi with 1/10-pound

incrementation. The minimum test pressure shall not be less than 3 psi, and the maximum test pressure to be applied shall not exceed 4 psi.

- (2) Medium Pressure Systems – A diaphragm type pressure gauge with a minimum dial size of 3½ inches with a set hand and a pressure range not to exceed 20 psi with 2/10-pound incrementation. The minimum test pressure shall not be less than 10 psi, and the maximum test pressure shall not exceed 12 psi.
- (3) High Pressure Systems – Gauges for high pressure tests shall be as follows:
- (a) Required pressure tests exceeding 10 pounds (69 kPa) but less than 100 pounds (689 kPa) shall be performed with gauges that have 1-pound (6.9 kPa) incrementation or less.
 - (b) Required pressure tests exceeding 100 pounds (689 kPa) shall be performed with gauges incremented for 2 percent or less of the required test pressure.
 - (c) Test gauges shall have a pressure range not greater than twice the test pressure applied.

1216.6 Variable Gas Pressure. Where the supply gas pressure exceeds 14 inches (3.5 kPa) or less than 6 inches (1.5 kPa) of water column, or where diversity demand factors are used, the design, pipe, sizing, materials, location, and use of such systems first shall be approved by the Authority Having Jurisdiction. Piping systems designed for pressures exceeding the serving gas supplier's standard delivery pressure shall have prior verification from the gas supplier of the availability of the design pressure.

{EDITORIAL NOTE: DELETE TABLES 1216.2(2) AND 1216.2(3) AND REPLACE WITH THE FOLLOWING:}

TABLE 1216.2(2)
SCHEDULE 40 METALLIC PIPE [NFPA 54: TABLE 6.2(c)]*

					<u>GAS:</u>		<u>NATURAL</u>		
					<u>INLET PRESSURE:</u>		<u>LESS THAN 2 psi</u>		
					<u>PRESSURE DROP:</u>		<u>3.0 in. w.c.</u>		
					<u>SPECIFIC GRAVITY:</u>		<u>.060</u>		
<u>INTENDED USE: INITIAL SUPPLY PRESSURE OF 8.0 IN. W.C. OR GREATER</u>									
	<u>PIPE SIZE (inch)</u>								
<u>NOMINAL:</u>	<u>½</u>	<u>¾</u>	<u>1</u>	<u>1¼</u>	<u>1½</u>	<u>2</u>	<u>2½</u>	<u>3</u>	<u>4</u>
<u>ACTUAL ID:</u>	<u>0.622</u>	<u>0.824</u>	<u>1.049</u>	<u>1.380</u>	<u>1.610</u>	<u>2.067</u>	<u>2.469</u>	<u>3.068</u>	<u>4.026</u>
<u>LENGTH (feet)</u>	<u>CAPACITY IN CUBIC FEET OF GAS PER HOUR</u>								
<u>10</u>	<u>454</u>	<u>949</u>	<u>1790</u>	<u>3670</u>	<u>5500</u>	<u>10 600</u>	<u>16 900</u>	<u>29 800</u>	<u>60 800</u>
<u>20</u>	<u>312</u>	<u>652</u>	<u>1230</u>	<u>2520</u>	<u>3780</u>	<u>7280</u>	<u>11 600</u>	<u>20 500</u>	<u>41 800</u>
<u>30</u>	<u>250</u>	<u>524</u>	<u>986</u>	<u>2030</u>	<u>3030</u>	<u>5840</u>	<u>9310</u>	<u>16 500</u>	<u>33 600</u>
<u>40</u>	<u>214</u>	<u>448</u>	<u>844</u>	<u>1730</u>	<u>2600</u>	<u>5000</u>	<u>7970</u>	<u>14 100</u>	<u>28 700</u>
<u>50</u>	<u>190</u>	<u>397</u>	<u>748</u>	<u>1540</u>	<u>2300</u>	<u>4430</u>	<u>7060</u>	<u>12 500</u>	<u>25 500</u>
<u>60</u>	<u>172</u>	<u>360</u>	<u>678</u>	<u>1390</u>	<u>2090</u>	<u>4020</u>	<u>6400</u>	<u>11 300</u>	<u>23 100</u>
<u>70</u>	<u>158</u>	<u>331</u>	<u>624</u>	<u>1280</u>	<u>1920</u>	<u>3690</u>	<u>5890</u>	<u>10 400</u>	<u>21 200</u>
<u>80</u>	<u>147</u>	<u>308</u>	<u>580</u>	<u>1190</u>	<u>1790</u>	<u>3440</u>	<u>5480</u>	<u>9690</u>	<u>19 800</u>
<u>90</u>	<u>138</u>	<u>289</u>	<u>544</u>	<u>1120</u>	<u>1670</u>	<u>3230</u>	<u>5140</u>	<u>9090</u>	<u>18 500</u>
<u>100</u>	<u>131</u>	<u>273</u>	<u>514</u>	<u>1060</u>	<u>1580</u>	<u>3050</u>	<u>4860</u>	<u>8580</u>	<u>17 500</u>
<u>125</u>	<u>116</u>	<u>242</u>	<u>456</u>	<u>936</u>	<u>1400</u>	<u>2700</u>	<u>4300</u>	<u>7610</u>	<u>15 500</u>
<u>150</u>	<u>105</u>	<u>219</u>	<u>413</u>	<u>848</u>	<u>1270</u>	<u>2450</u>	<u>3900</u>	<u>6890</u>	<u>14 100</u>

<u>175</u>	<u>96</u>	<u>202</u>	<u>380</u>	<u>780</u>	<u>1170</u>	<u>2250</u>	<u>3590</u>	<u>6340</u>	<u>12 900</u>
<u>200</u>	<u>90</u>	<u>188</u>	<u>353</u>	<u>726</u>	<u>1090</u>	<u>2090</u>	<u>3340</u>	<u>5900</u>	<u>12 000</u>
<u>250</u>	<u>80</u>	<u>166</u>	<u>313</u>	<u>643</u>	<u>964</u>	<u>1860</u>	<u>2960</u>	<u>5230</u>	<u>10 700</u>
<u>300</u>	<u>72</u>	<u>151</u>	<u>284</u>	<u>583</u>	<u>873</u>	<u>1680</u>	<u>2480</u>	<u>4740</u>	<u>9660</u>
<u>350</u>	<u>66</u>	<u>139</u>	<u>261</u>	<u>536</u>	<u>803</u>	<u>1550</u>	<u>2470</u>	<u>4630</u>	<u>8890</u>
<u>400</u>	<u>62</u>	<u>129</u>	<u>243</u>	<u>499</u>	<u>747</u>	<u>1440</u>	<u>2290</u>	<u>4050</u>	<u>8270</u>
<u>450</u>	<u>58</u>	<u>121</u>	<u>228</u>	<u>468</u>	<u>701</u>	<u>1350</u>	<u>2150</u>	<u>3800</u>	<u>7760</u>
<u>500</u>	<u>55</u>	<u>114</u>	<u>215</u>	<u>442</u>	<u>662</u>	<u>1280</u>	<u>2030</u>	<u>3590</u>	<u>7330</u>
<u>550</u>	<u>52</u>	<u>109</u>	<u>204</u>	<u>420</u>	<u>629</u>	<u>1210</u>	<u>1930</u>	<u>3410</u>	<u>6960</u>
<u>600</u>	<u>50</u>	<u>104</u>	<u>195</u>	<u>400</u>	<u>600</u>	<u>1160</u>	<u>1840</u>	<u>3260</u>	<u>6640</u>
<u>650</u>	<u>47</u>	<u>99</u>	<u>187</u>	<u>384</u>	<u>575</u>	<u>1110</u>	<u>1760</u>	<u>3120</u>	<u>6360</u>
<u>700</u>	<u>46</u>	<u>95</u>	<u>179</u>	<u>368</u>	<u>552</u>	<u>1060</u>	<u>1690</u>	<u>3000</u>	<u>6110</u>
<u>750</u>	<u>44</u>	<u>92</u>	<u>173</u>	<u>355</u>	<u>532</u>	<u>1020</u>	<u>1630</u>	<u>2890</u>	<u>5890</u>
<u>800</u>	<u>42</u>	<u>89</u>	<u>167</u>	<u>343</u>	<u>514</u>	<u>989</u>	<u>1580</u>	<u>2790</u>	<u>5680</u>
<u>850</u>	<u>41</u>	<u>86</u>	<u>162</u>	<u>332</u>	<u>497</u>	<u>957</u>	<u>1530</u>	<u>2700</u>	<u>5500</u>
<u>900</u>	<u>40</u>	<u>83</u>	<u>157</u>	<u>322</u>	<u>482</u>	<u>928</u>	<u>1480</u>	<u>2610</u>	<u>5330</u>
<u>950</u>	<u>39</u>	<u>81</u>	<u>152</u>	<u>312</u>	<u>468</u>	<u>901</u>	<u>1440</u>	<u>2540</u>	<u>5180</u>
<u>1000</u>	<u>38</u>	<u>79</u>	<u>148</u>	<u>304</u>	<u>455</u>	<u>877</u>	<u>1400</u>	<u>2470</u>	<u>5040</u>
<u>1100</u>	<u>36</u>	<u>75</u>	<u>141</u>	<u>289</u>	<u>432</u>	<u>833</u>	<u>1330</u>	<u>2350</u>	<u>4780</u>
<u>1200</u>	<u>34</u>	<u>71</u>	<u>134</u>	<u>275</u>	<u>412</u>	<u>794</u>	<u>1270</u>	<u>2240</u>	<u>4560</u>
<u>1300</u>	<u>33</u>	<u>68</u>	<u>128</u>	<u>264</u>	<u>395</u>	<u>761</u>	<u>1210</u>	<u>2140</u>	<u>4370</u>
<u>1400</u>	<u>31</u>	<u>65</u>	<u>123</u>	<u>253</u>	<u>379</u>	<u>731</u>	<u>1160</u>	<u>2060</u>	<u>4200</u>
<u>1500</u>	<u>30</u>	<u>63</u>	<u>119</u>	<u>244</u>	<u>366</u>	<u>704</u>	<u>1120</u>	<u>1980</u>	<u>4050</u>
<u>1600</u>	<u>29</u>	<u>61</u>	<u>115</u>	<u>236</u>	<u>353</u>	<u>680</u>	<u>1080</u>	<u>1920</u>	<u>3910</u>
<u>1700</u>	<u>28</u>	<u>59</u>	<u>111</u>	<u>228</u>	<u>342</u>	<u>658</u>	<u>1050</u>	<u>1850</u>	<u>3780</u>
<u>1800</u>	<u>27</u>	<u>57</u>	<u>108</u>	<u>221</u>	<u>331</u>	<u>638</u>	<u>1020</u>	<u>1800</u>	<u>3670</u>
<u>1900</u>	<u>27</u>	<u>56</u>	<u>105</u>	<u>215</u>	<u>322</u>	<u>619</u>	<u>987</u>	<u>1750</u>	<u>3560</u>
<u>2000</u>	<u>26</u>	<u>54</u>	<u>102</u>	<u>209</u>	<u>313</u>	<u>602</u>	<u>960</u>	<u>1700</u>	<u>3460</u>

For SI units: 1-inch = 25 mm, 1-foot = 304.8 mm, 1 cubic foot per hour = 0.0283 m³/h, 1 pound-force per square inch = 6.8947 kPa, 1-inch water column = 0.249 kPa

* Table entries are rounded to 3 significant digits.

TABLE 1216.2(3)
SCHEDULE 40 METALLIC PIPE [NFPA 54: TABLE 6.2(d)]*

					<u>GAS:</u>		<u>NATURAL</u>		
					<u>INLET PRESSURE:</u>		<u>LESS THAN 2 psi</u>		
					<u>PRESSURE DROP:</u>		<u>6.0 in. w.c.</u>		
					<u>SPECIFIC GRAVITY:</u>		<u>.060</u>		
<u>INTENDED USE: INITIAL SUPPLY PRESSURE OF 11.0 IN. W.C. OR GREATER</u>									
	<u>PIPE SIZE (inch)</u>								
<u>NOMINAL:</u>	<u>½</u>	<u>¾</u>	<u>1</u>	<u>1¼</u>	<u>1½</u>	<u>2</u>	<u>2½</u>	<u>3</u>	<u>4</u>
<u>ACTUAL ID:</u>	<u>0.622</u>	<u>0.824</u>	<u>1.049</u>	<u>1.380</u>	<u>1.610</u>	<u>2.067</u>	<u>2.469</u>	<u>3.068</u>	<u>4.026</u>
<u>LENGTH (feet)</u>	<u>CAPACITY IN CUBIC FEET OF GAS PER HOUR</u>								
<u>10</u>	<u>660</u>	<u>1380</u>	<u>2600</u>	<u>5340</u>	<u>8000</u>	<u>15400</u>	<u>24600</u>	<u>43400</u>	<u>88500</u>
<u>20</u>	<u>454</u>	<u>949</u>	<u>1790</u>	<u>3670</u>	<u>5500</u>	<u>10600</u>	<u>16900</u>	<u>29800</u>	<u>60800</u>
<u>30</u>	<u>364</u>	<u>762</u>	<u>1440</u>	<u>2950</u>	<u>4410</u>	<u>8500</u>	<u>13600</u>	<u>24000</u>	<u>48900</u>
<u>40</u>	<u>312</u>	<u>652</u>	<u>1230</u>	<u>2520</u>	<u>3780</u>	<u>7280</u>	<u>11600</u>	<u>20500</u>	<u>41800</u>
<u>50</u>	<u>276</u>	<u>578</u>	<u>1090</u>	<u>2240</u>	<u>3350</u>	<u>6450</u>	<u>10300</u>	<u>18200</u>	<u>37100</u>
<u>60</u>	<u>250</u>	<u>524</u>	<u>986</u>	<u>2030</u>	<u>3030</u>	<u>5840</u>	<u>9310</u>	<u>16500</u>	<u>33600</u>
<u>70</u>	<u>230</u>	<u>482</u>	<u>907</u>	<u>1860</u>	<u>2790</u>	<u>5380</u>	<u>8570</u>	<u>15100</u>	<u>30900</u>
<u>80</u>	<u>214</u>	<u>448</u>	<u>844</u>	<u>1730</u>	<u>2600</u>	<u>5000</u>	<u>7970</u>	<u>14100</u>	<u>28700</u>
<u>90</u>	<u>201</u>	<u>420</u>	<u>792</u>	<u>1630</u>	<u>2440</u>	<u>4690</u>	<u>7480</u>	<u>13200</u>	<u>27000</u>
<u>100</u>	<u>190</u>	<u>397</u>	<u>748</u>	<u>1540</u>	<u>2300</u>	<u>4430</u>	<u>7060</u>	<u>12500</u>	<u>25500</u>
<u>125</u>	<u>168</u>	<u>352</u>	<u>663</u>	<u>1630</u>	<u>2040</u>	<u>3930</u>	<u>6260</u>	<u>11100</u>	<u>22600</u>
<u>150</u>	<u>153</u>	<u>319</u>	<u>601</u>	<u>1230</u>	<u>1850</u>	<u>3560</u>	<u>5670</u>	<u>10000</u>	<u>20500</u>

<u>175</u>	<u>140</u>	<u>293</u>	<u>553</u>	<u>1140</u>	<u>1700</u>	<u>3270</u>	<u>5220</u>	<u>9230</u>	<u>18800</u>
<u>200</u>	<u>131</u>	<u>273</u>	<u>514</u>	<u>1056</u>	<u>1580</u>	<u>3050</u>	<u>4860</u>	<u>8580</u>	<u>17500</u>
<u>250</u>	<u>116</u>	<u>242</u>	<u>456</u>	<u>936</u>	<u>1400</u>	<u>2700</u>	<u>4300</u>	<u>7610</u>	<u>15500</u>
<u>300</u>	<u>105</u>	<u>219</u>	<u>413</u>	<u>848</u>	<u>1270</u>	<u>2450</u>	<u>3900</u>	<u>6890</u>	<u>14100</u>
<u>350</u>	<u>96</u>	<u>202</u>	<u>380</u>	<u>780</u>	<u>1170</u>	<u>2250</u>	<u>3590</u>	<u>6340</u>	<u>12900</u>
<u>400</u>	<u>90</u>	<u>188</u>	<u>353</u>	<u>726</u>	<u>1090</u>	<u>2090</u>	<u>3340</u>	<u>5900</u>	<u>12000</u>
<u>450</u>	<u>84</u>	<u>176</u>	<u>332</u>	<u>681</u>	<u>1020</u>	<u>1960</u>	<u>3130</u>	<u>5540</u>	<u>11300</u>
<u>500</u>	<u>80</u>	<u>166</u>	<u>313</u>	<u>643</u>	<u>964</u>	<u>1860</u>	<u>2960</u>	<u>5230</u>	<u>10700</u>
<u>550</u>	<u>76</u>	<u>158</u>	<u>297</u>	<u>611</u>	<u>915</u>	<u>1760</u>	<u>2810</u>	<u>4970</u>	<u>10100</u>
<u>600</u>	<u>72</u>	<u>151</u>	<u>284</u>	<u>583</u>	<u>873</u>	<u>1680</u>	<u>2680</u>	<u>4740</u>	<u>9660</u>
<u>650</u>	<u>69</u>	<u>144</u>	<u>272</u>	<u>558</u>	<u>836</u>	<u>1610</u>	<u>2570</u>	<u>4540</u>	<u>9250</u>
<u>700</u>	<u>66</u>	<u>139</u>	<u>261</u>	<u>536</u>	<u>803</u>	<u>1550</u>	<u>2470</u>	<u>4360</u>	<u>8890</u>
<u>750</u>	<u>64</u>	<u>134</u>	<u>252</u>	<u>516</u>	<u>774</u>	<u>1490</u>	<u>2380</u>	<u>4200</u>	<u>8560</u>
<u>800</u>	<u>62</u>	<u>129</u>	<u>243</u>	<u>499</u>	<u>747</u>	<u>1440</u>	<u>2290</u>	<u>4050</u>	<u>8270</u>
<u>850</u>	<u>60</u>	<u>125</u>	<u>235</u>	<u>483</u>	<u>723</u>	<u>1390</u>	<u>2220</u>	<u>3920</u>	<u>8000</u>
<u>900</u>	<u>58</u>	<u>121</u>	<u>228</u>	<u>468</u>	<u>701</u>	<u>1350</u>	<u>2150</u>	<u>3800</u>	<u>7760</u>
<u>950</u>	<u>56</u>	<u>118</u>	<u>221</u>	<u>454</u>	<u>681</u>	<u>1310</u>	<u>2090</u>	<u>3690</u>	<u>7540</u>
<u>1000</u>	<u>55</u>	<u>114</u>	<u>215</u>	<u>442</u>	<u>662</u>	<u>1280</u>	<u>2030</u>	<u>3590</u>	<u>7330</u>
<u>1100</u>	<u>52</u>	<u>109</u>	<u>204</u>	<u>420</u>	<u>629</u>	<u>1210</u>	<u>1930</u>	<u>3410</u>	<u>6960</u>
<u>1200</u>	<u>50</u>	<u>104</u>	<u>195</u>	<u>400</u>	<u>600</u>	<u>1160</u>	<u>1840</u>	<u>3260</u>	<u>6640</u>
<u>1300</u>	<u>47</u>	<u>99</u>	<u>187</u>	<u>384</u>	<u>575</u>	<u>1110</u>	<u>1760</u>	<u>3120</u>	<u>6360</u>
<u>1400</u>	<u>46</u>	<u>95</u>	<u>179</u>	<u>368</u>	<u>552</u>	<u>1060</u>	<u>1690</u>	<u>3000</u>	<u>6110</u>
<u>1500</u>	<u>44</u>	<u>92</u>	<u>173</u>	<u>355</u>	<u>532</u>	<u>1020</u>	<u>1630</u>	<u>2890</u>	<u>5890</u>
<u>1600</u>	<u>42</u>	<u>89</u>	<u>167</u>	<u>343</u>	<u>514</u>	<u>989</u>	<u>1580</u>	<u>2790</u>	<u>5680</u>
<u>1700</u>	<u>41</u>	<u>86</u>	<u>162</u>	<u>332</u>	<u>497</u>	<u>957</u>	<u>1530</u>	<u>2700</u>	<u>5500</u>
<u>1800</u>	<u>40</u>	<u>83</u>	<u>157</u>	<u>322</u>	<u>482</u>	<u>928</u>	<u>1480</u>	<u>2610</u>	<u>5330</u>
<u>1900</u>	<u>39</u>	<u>81</u>	<u>152</u>	<u>312</u>	<u>468</u>	<u>901</u>	<u>1440</u>	<u>2540</u>	<u>5180</u>
<u>2000</u>	<u>38</u>	<u>79</u>	<u>148</u>	<u>304</u>	<u>455</u>	<u>877</u>	<u>1400</u>	<u>2470</u>	<u>5040</u>

For SI units: 1-inch = 25 mm, 1-foot = 304.8 mm, 1 cubic foot per hour = 0.0283 m³/h, 1 pound-force per square inch = 6.8947 kPa, 1-inch water column = 0.249 kPa

* Table entries are rounded to 3 significant digits.

CHAPTER 13

HEALTH CARE FACILITIES AND MEDICAL GAS AND MEDICAL VACUUM SYSTEMS

1301.4 Terms. Where the terms “medical gas” or “medical support gas” occurs, the provisions shall apply to piped systems for oxygen, nitrous oxide, medical air, carbon dioxide, helium, nitrogen, instrument air, and mixtures thereof. Where the name of a specific gas service occurs, the provision shall apply to that gas. [NFPA 99:5.1.1.2]

Where the term “medical vacuum” occurs, the provisions shall apply to systems for piped medical-surgical vacuum. Where the name of a specific vacuum service occurs, the provision shall apply to that vacuum service. [NFPA 99:5.1.1.3]

1301.5 Where Required. Construction and equipment requirements shall be applied to new construction and new equipment, except as ~~otherwise addressed in this chapter~~ modified in individual chapters. [NFPA 99:1.3.2]

1301.6 Existing Systems. ~~The Only~~ the altered, renovated, or modernized portion of an existing system or individual component shall be required to meet the installation and equipment requirements stated in this chapter. Where the alteration, renovation, or modernization adversely impacts existing performance requirements of a system or component, additional upgrading shall be required. An existing system that does not strictly comply with the provisions of this chapter shall be permitted to be continued in use where the Authority Having Jurisdiction has determined that such use does not constitute a distinct hazard to life. [NFPA 99:1.3.2.1 – 1.3.2.3]

1302.1 Building System Risk Categories. ~~Activities, systems, or equipment shall be designed to meet Category 1 through Category 4 requirements as detailed in this code. Building systems in health care facilities shall be designed in accordance with Category 1 through Category 3 requirements as detailed in this chapter.~~ [NFPA 99:4.1]

1302.1.1 Risk Assessment. Categories shall be determined by following and documenting a defined risk assessment procedure. [NFPA 99:4.2.1]

1302.2 Patient Care Rooms. The governing body of the facility or its designee shall establish the following areas in accordance with the type of patient care anticipated:

- (1) Category 1 spaces.
- (2) Category 2 spaces.
- (3) Category 3 spaces.
- (4) Category 4 spaces. [NFPA 99:1.3.4.1]
- (1) ~~Critical care rooms~~
- (2) ~~General care rooms~~
- (3) ~~Basic care rooms~~ [NFPA 99:1.3.4.1]

1302.3 Anesthetizing Locations. It shall be the responsibility of the governing body of the health care organization to designate anesthetizing locations. [NFPA 99:1.3.4.2]

Exception: ~~Deep sedation and general anesthesia shall not be administered where using a Category 3 medical gas system. [NFPA 99:5.3.1.5]~~

{EDITORIAL NOTE: DELETE SECTION 1304.3 AND REPLACE WITH THE FOLLOWING:}

1304.3 Category 2 Piped Medical Gas and Medical Vacuum. Category 2 piped gas or piped vacuum system requirements shall be permitted when all of the following criteria are met:

- (1) Only moderate sedation, minimal sedation as defined in Chapter 2 or no sedation is performed. Deep sedation and general anesthesia shall not be permitted.
- (2) The loss of the piped gas or piped vacuum systems is likely to cause minor injury to patients, staff, or visitors.
- (3) The facility piped gas or piped vacuum systems are intended for Category 2 patient care rooms. [NFPA 99:5.2.1.2]

1304.3.1 Category 3 Piped Medical Gas and Medical Vacuum. Category 3 piped gas and vacuum systems shall be permitted when all of the following criteria are met:

- (1) Only moderate sedation, minimal sedation as defined in Chapter 2 or no sedation is performed. Deep sedation and general anesthesia shall not be permitted.
- (2) The loss of the piped gas or piped vacuum systems is not likely to cause injury to patients, staff, or visitors, but cause discomfort.
- (3) The facility piped gas and vacuum systems are intended for Category 3 or Category 4 patient care rooms. [NFPA 99:5.3.1.2]

1306.1 General. The installation of medical gas and medical vacuum systems shall be made by qualified, competent technicians who are experienced in performing such installations. Installers of medical gas and medical vacuum piped distribution systems, appurtenant piping supporting pump and compressor source systems, and appurtenant piping supporting source gas manifold systems not including permanently installed bulk source systems, shall be certified in accordance with ASSE 6010. [NFPA 99:5.1.10.11.10.1, 5.1.10.11.10.2]

~~1306.3 Health Care Organization Personnel.~~ ~~Health care organization personnel shall be permitted to install piping systems where the requirements of Section 1306.1 through Section 1306.2.1 are met during the installation. [NFPA 99:5.1.10.11.10.6]~~ **Piping and Installation.** Piping and installation procedures shall comply with NFPA 99.

1307.1 General. Brazing procedures and brazer performance for the installation of medical gas and medical vacuum piping shall be qualified in accordance with either Section IX, “Welding and Brazing Qualifications.” of the ASME Boiler and Pressure Vessel Code or AWS B2.2, both as modified in Section 1307.2 through Section 1307.7. [NFPA 99:5.1.10.11.11.1, 5.3.6.3.1]

1308.5 Tubes for Medical Vacuum Systems. Piping for medical vacuum systems shall be constructed of one of the following:

- (1) Hard-drawn seamless copper tube manufactured in accordance with one of the following:

- (a) ASTM B88 copper tube (Type K, L, or M).
- (b) ASTM B280 copper ACR tube.
- (c) ASTM B819 copper medical gas tubing (Type K or L).
- (2) Stainless steel tube [NFPA 99:5.1.10.2.1] manufactured in accordance with one of the following:
 - (a) ASTM A269 TP304L or 316L.
 - (b) ASTM A312 TP304L or 316L.
 - (c) ASTM A312 TP304L/316L, Sch 5S pipe, and ASTM A403 WP304L/316L, Sch 5S fittings. [NFPA 99:5.1.10.2.1]

Exceptions: ~~Piping for Category 3 medical vacuum systems shall be permitted to be as follows:~~

- ~~(1) Schedule 40 or Schedule 80 PVC plastic piping manufactured in accordance with ASTM D1785. [NFPA 99:5.3.8.2.3(1)]~~
- ~~(2) Schedule 40 or Schedule 80 CPVC IPS (iron pipe size) plastic piping manufactured in accordance with ASTM F441. [NFPA 99:5.3.8.2.4(1)]~~
- ~~(3) CPVC CTS (copper tube size) plastic pipe manufactured in accordance with ASTM D2846, ½ of an inch (15 mm) through 2 inches (50 mm) in diameter. [NFPA 99:5.3.8.2.4(3)]~~

1308.6 Category 3 Systems. Category 3 systems shall comply with Section 1308.0 through 1309.0, except as follows:

- (1) Dental air and dental vacuum shall comply with Section 1308.5, except the tubing shall be permitted to be annealed (soft temper).
- (2) Dental vacuum tubing shall be made of materials and composed of elements that satisfy all of the following conditions:
 - (a) PVC plastic pipe shall be Schedule 40 or schedule 80, complying with ASTM D1785.
 - (b) PVC plastic fittings shall be Schedule 40 or Schedule 80 to match the pipe, complying with ASTM D2466 or ASTM D2467.
 - (c) Joints in PVC plastic piping shall be solvent-cemented in accordance with ASTM D2672.
 - (d) CPVC IPS plastic pipe shall be Schedule 40 or Schedule 80, complying with ASTM F441.
 - (e) CPVC IPS plastic fittings shall be Schedule 40 or Schedule 80 to match the pipe, complying with ASTM F438 or ASTM F439.
 - (f) CPVC CTS plastic pipe and fittings ½ of an inch (15 mm) through 2 inches (50 mm) in size shall be SDR 11, complying with ASTM D2846.
 - (g) Solvent cement for joints in CPVC plastic piping shall comply with ASTM F493.
- (3) Dental air and dental vacuum fittings shall be:
 - (a) Soldered complying with ASME B16.22.
 - (b) Flared fittings complying with ASME B16.26.

- (c) Compression fittings ($\frac{3}{4}$ of an inch (20 mm) maximum size).
- (4) Soldered joints in Category 3 dental air supply piping shall be made in accordance with ASTM B828, using a "lead-free" solder filler metal containing not more than 0.2 percent lead by volume that complies with ASTM B32.
- (5) Where required, gas and vacuum equipment and piping shall be seismically restrained against earthquakes in accordance with the applicable building code.
- (6) Gas and vacuum piping systems shall be designed and sized to deliver the required flow rates at the utilized pressures. (NFPA 99:5.3.10]

{EDITORIAL NOTE: DELETE SECTION 1309.2 AND REPLACE WITH THE FOLLOWING:}

1309.2 Changes in Direction. Positive pressure patient gas systems, medical support gas systems, and vacuum systems shall have all turns, offsets, and other changes in direction made using fittings or techniques appropriate to any of the following acceptable joining methods:

- (1) Brazed as described in Section 1309.3.
- (2) Welding as described in Section 1309.5.
- (3) Memory metal fittings as described in Section 1309.4.1.
- (4) Axially swaged, elastic preload fittings as described in Section 1309.4.2.
- (5) Threaded as described under Section 1309.4.3. [NFPA 99:5.1.10.3.1]

1309.3.6.3 Abrasive Pads. Clean, nonshedding, abrasive pads shall be used to clean the exterior surfaces of the tube ends. [NFPA 99:5.1.10.4.3.5]

Exception: ~~For Category 3 systems, nonabrasive pads shall be used to clean the exterior surfaces of tube ends. [NFPA 99:5.3.6.6.3]~~

1309.3.6.4 Prohibited. The use of steel wool or sand cloth shall be prohibited. [NFPA 99:5.1.10.4.3.6]

~~For Category 3 systems, the use of wire brushes shall also be prohibited.~~

The cleaning process shall not result in grooving of the surfaces to be joined. [NFPA 99:5.1.10.4.3.7, 5.3.6.6.6]

1309.3.6.7 On-Site Recleaning. The interior surfaces of tube ends, fittings, and other components that were cleaned for oxygen service by the manufacturer, but become contaminated prior to being installed, shall be permitted to be recleaned ~~in accordance with Section 1311.0~~ onsite by the installer by thoroughly scrubbing the interior surfaces with a clean, hot water-alkaline solution such as sodium carbonate or trisodium phosphate using a solution of 1 pound (0.5 kg) of sodium carbonate or trisodium phosphate to 3 gallons (11 L) of potable water and by thoroughly rinsing them with clean, hot, potable water.

Other aqueous cleaning solutions shall be permitted to be used for onsite recleaning provided that they are as recommended in the mandatory requirements of CGA G-4.1. [NFPA 99:5.1.10.4.3.10, 5.1.10.4.3.11]

1309.3.6.8 Contamination Contaminated Materials. Material that has become internally contaminated ~~shall be cleaned in accordance with Section 1311.0~~ shall be cleaned as required by Section 1309.3.6.7 for oxygen service, or shall not be installed. [NFPA 99:5.1.10.4.3.12]

1309.3.8.2 Flow Rate Control. The purge gas flow rate shall be controlled by the use of a pressure regulator and a flowmeter, or a combination thereof. [NFPA 99:5.1.10.4.5.3, 5.3.6.8.4]

Pressure regulators alone shall not be used to control purge gas flow rates. [NFPA 99:5.1.10.4.5.4, 5.3.6.8.3]

~~For Category 3 systems, the nitrogen purge gas flow rate shall not be high enough to produce a positive pressure in the piping system. [NFPA 99:5.3.6.8.3]~~

1309.4.5 Other Types of Fittings. Approved or listed metallic gas tube fittings that provide a permanent joint having the mechanical, thermal, and sealing integrity of a brazed joint shall be permitted to be used. [NFPA 99:5.1.10.9.1]

1310.8 Prohibited System Interconnections. Two or more medical gas or medical vacuum piping systems shall not be interconnected for installation, testing, or any other reason except as permitted by Section 1310.8.2. [NFPA 99:5.1.10.11.7.1]

1310.8.2 Medical Gas and Medical Vacuum. Medical gas and medical vacuum systems with the same contents shall be permitted to be interconnected with an inline valve installed between the systems. [NFPA 99:5.1.10.11.7.2]

1310.9 Changes in System Use. If a positive pressure medical gas piping distribution system that was originally used or constructed for the use at one pressure and for one gas is converted for operation at another pressure and/or for another gas, ~~the~~ then all provisions of Section 1308.0 shall apply as if the system were new. [NFPA 99:5.1.10.11.9.1]

1310.10 Breaching or Penetrating Medical Gas Piping. Positive pressure patient medical gas piping and medical support gas piping shall not be breached or penetrated by any means or process that will result in residual copper particles or other debris remaining in the piping or affect the oxygen-clean interior of the piping. The breaching or penetrating process shall ensure that debris created by the process remains contained within the work area. [NFPA 99:5.1.10.11.12]

{EDITORIAL NOTE: DELETE SECTION 1312.1 AND ITS SUBSECTIONS AND REPLACE WITH THE FOLLOWING:}

1312.1 General. New or replacement valves shall be permitted to be of any type as long as they meet the following conditions:

- (1) They have a maximum pressure drop at intended maximum flow of 0.2 psig (1.4 kPa) in pressure service and 0.15 inch (3.8 mm) of Hg in vacuum service.

- (2) They use a quarter turn to off.
- (3) They are constructed of materials suitable for the service.
- (4) They are provided with copper tube extensions by the manufacturer for brazing.
- (5) They indicate to the operator if the valve is open or closed.
- (6) They permit in-line serviceability.
- (7) They are cleaned for oxygen service by the manufacturer if used for any positive pressure service. [NFPA 99:5.1.4.1.6]

1312.1.1 Security. All valves, except valves in zone valve box assemblies, shall be secured by any of the following means:

- (1) Located in secured areas.
- (2) Locked or latched in their operating position.
- (3) Located above ceilings but remaining accessible and not obstructed. [NFPA 99:5.1.4.1.2]

1312.1.2 Accessibility. Zone valves shall be installed in valve boxes with removable covers large enough to allow manual operation of valves.

Zone valves for use in certain areas, such as psychiatric or pediatric areas, shall be permitted to be secured from unauthorized access with the approval of the Authority Having Jurisdiction. [NFPA 99:5.1.4.1.4]

1312.1.3 Labeled. All valves shall be labeled with the name of the gas supplied and the area(s) controlled in accordance with Section 1312.9. [NFPA 99:5.1.4.1.3]

1312.2 Source Valves. A shutoff valve shall be placed at the immediate connection of each source system to the piped distribution system to permit allow the entire source, including all accessory devices (e.g., air dryers and final line regulators), to be isolated from the facility. [NFPA 99:5.1.4.2.1]

1312.9.2 Labeling. Shutoff valves shall be labeled in substance as follows:

Source valve(s) shall be labeled in substance as follows:

SOURCE VALVE FOR THE (SOURCE NAME)

[NFPA 99:5.1.11.2.3]

Zone valve box assemblies shall be labeled outside of the valve box as to the areas that they control as follows:

ZONE VALVES FOR THE (GAS/VACUUM NAME)

SERVING (NAME OF AREA SERVED BY THE PARTICULAR VALVE)

[NFPA 99:5.1.11.2.7]

{EDITORIAL NOTE: REMAINDER OF SECTION 1312.9 REMAINS AS SET FORTH IN THE 2015 UPC.}

1312.10 Emergency Shutoff Valves. Category 3 systems shall comply with Section 1312.0, except as follows:

- (1) Where a central Category 3 medical gas supply is remote from a single treatment facility, the main supply line shall be provided with an emergency shutoff valve located in the single treatment facility and accessible from all use-point locations in an emergency.
- (2) Where a central Category 3 medical gas supply system supplies two treatment facilities, each facility shall be provided with an emergency shutoff valve that is accessible from all use-point locations in an emergency.
- (3) Emergency shutoff valves shall be labeled to indicate the gas they control and shall shut off only the gas to the treatment facility that they serve.
- (4) A remotely activated shutoff valve at a supply manifold shall not be used for emergency shutoff. For clinical purposes, such a remote valve actuator shall not fail-closed in the event of a loss of electric power. Where remote actuators are the type that fail-open, the cylinder shutoff valves must be closed whenever the system is not in use. [NFPA 99:5.3.4.1]

1313.1 General. Central supply systems and medical gas outlets for oxygen, medical air, nitrous oxide, carbon dioxide, and all other patient medical gases shall be piped only to medical gas outlets complying with section 1315.0 into areas where the gases will be used under the direction of licensed medical professionals for purposes congruent with the following:

- (1) Direct respiration by patients.
- (2) Clinical application of the gas to a patient, such as the use of an insufflator to inject carbon dioxide into patient body cavities during laparoscopic surgery and carbon dioxide used to purge heart-lung machine blood flow ways.
- (3) Medical device applications directly related to respiration.
- (4) Power for medical devices used directly on patients.
- (5) Calibration of medical devices intended for use in accordance with Section 1313.1(1) through Section 1313.1(4). [NFPA 99:5.1.3.5.2]
- (6) Simulation centers for the education, training, and assessment of health care professionals. [NFPA 99:5.1.3.5.2]

1313.1.1 Materials. Materials used in central supply systems shall comply with the following requirements:

- (1) In those portions of systems intended to handle oxygen at gauge pressures that exceed 350 pounds-force per square inch (psi) (2413 kPa), the interconnecting hose shall contain no polymeric materials.
- (2) In those portions of systems intended to handle oxygen or nitrous oxide material, construction shall be compatible with oxygen under the temperatures and pressures to which the components are capable of being exposed in the containment and use of oxygen, nitrous oxide, mixtures of these gases, or mixtures containing more than 23.5 percent oxygen. [NFPA 99:5.1.3.5.4 – 5.1.3.5.4(2), 5.3.6.21.8 – 5.3.6.21.8(2)]
- (3) If potentially exposed to cryogenic temperatures, materials shall be designed for low temperature service.
- (4) All materials shall be installed per the manufacturer's requirements. [NFPA 99:5.1.3.5.4]

1313.1.2 Pressure-Relief Valve Requirements. ~~Pressure-relief valves shall be installed in accordance with Section 1316.2. Each central supply system shall have a pressure-relief valve set at 50 percent above normal line pressure, installed downstream of the pressure regulator and upstream of the shutoff valve. This pressure-relief valve shall be permitted to be set at a higher pressure, provided another pressure-relief valve set at 50 percent above normal line pressure is installed in the main supply line. Central supply systems for positive pressure gases shall include one or more relief valves. All such valves shall:~~

- ~~(1) Be located between each final line regulator and the source valve.~~
- ~~(2) Have a relief setting that is 50 percent above the normal system operating pressure, as indicated in Table 1305.1. [NFPA 99:5.1.3.5.6.3]~~

{EDITORIAL NOTE: DELETE SECTION 1314 IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING FROM THE 2018 UPC:}

1314.0 Medical Air Supply Systems.

1314.1 Quality of Medical Air. Medical air shall:

- (1) Be supplied from cylinders, bulk containers, or medical air compressor sources, or be reconstituted from oxygen USP and oil-free, dry nitrogen NF.
- (2) Meet the requirements of medical air USP.
- (3) Have no detectable liquid hydrocarbons.
- (4) Have less than 25 gpm gaseous hydrocarbons.
- (5) Have not more than 1mg/m³ (6.85 x 10⁻⁰⁷ lb/yd³) of permanent particulates sized 1 micron or larger in the air at normal atmospheric pressure. [NFPA 99:5.1.3.6.1]

1314.2 Medical Air Compressors. Medical air compressors shall be installed in a well-lit, ventilated, and clean location and shall be readily accessible for maintenance. The location shall be provided with drainage facilities in accordance with this code. The medical air compressor area shall be established in a location separate from medical gas cylinder system sources and shall be readily accessible for maintenance.

1314.2.1 Required Components. Medical air compressor systems shall consist of the following:

- (1) Components arranged to allow service and a continuous supply of medical air in the event of a single fault failure. Component arrangement shall be permitted to vary as required by the technology employed, provided that an equal level of operating redundancy and medical air quality is maintained. [NFPA 99:5.1.3.6.3.9(A)]
- (2) Automatic means to prevent backflow from all on-cycle compressors through all off-cycle compressors.
- (3) Manual shutoff valve to isolate each compressor from the centrally piped system and from other compressors for maintenance or repair without loss of pressure in the system.
- (4) Intake filter-muffler(s) of the dry type.
- (5) Pressure relief valve(s) set at 50 percent above line pressure.

- (6) Piping and components between the compressor and the source shutoff valve that do not contribute to contaminant levels.
- (7) Except as described in Section 1314.2.1(1) through 1314.2.1(6), materials and devices used between the medical air intake and the medical air source valve that are of any design or construction appropriate for the service as determined by the manufacturer. [NFPA 99:5.1.3.6.3.2(2-7)]

1314.2.2 Category 1 Medical Air Compressors. Medical air compressors shall be sufficient to serve the peak calculated demand with the largest single compressor out of service. In no case shall there be fewer than two compressors. [NFPA 99:5.1.3.6.3.9(B)]

1314.2.3 Category 2 Medical Air Supply Systems. Category 2 medical air supply systems shall comply with Section 1314.2.1, except as follows:

- (1) Medical air compressors, dryers, aftercoolers, filters, and regulators shall be permitted to be simplex.
- (2) The facility staff shall develop an emergency plan to deal with the loss of medical air. [NFPA 99:5.2.3.5]

1314.2.4 Category 3 Dental Air Compressor Systems. Category 3 dental air compressor supply systems shall comply with Section 1314.2.1 and shall include the following:

- (1) Disconnect switch(es).
- (2) Motor starting device(s).
- (3) Motor overload protection device(s).
- (4) One or more compressors.
- (5) For single, duplex, or multiple compressor systems, means for activation/deactivation of each individual compressor.
- (6) When multiple compressors are used, manual or automatic means to alternate individual compressors.
- (7) When multiple compressors are used, manual or automatic means to activate the additional unit(s) should the in-service unit(s) be incapable of maintaining adequate pressure.
- (8) Intake filter-muffler(s) of the dry type.
- (9) Receiver(s) with a manual or automatic drain.
- (10) Shutoff valves.
- (11) Compressor discharge check valve(s) (for multiple compressors).
- (12) Air dryers that maintain a minimum of 40 percent relative humidity at operating pressure and temperature.
- (13) In-line final particulate/coalescing filters rated at 0.01 micron (0.01 μ m), with filter status indicator to ensure the delivery of dental air with a maximum allowable 0.05 ppm liquid oil.
- (14) Pressure regulator(s).
- (15) Pressure relief valve.

(16) Pressure indicator.

(17) Moisture indicator. [NFPA 99:5.3.3.6.1.1]

1314.3 Air Sources. Air sources for medical air compressors shall comply with Section 1314.3.1 or Section 1314.3.2.

1314.3.1 Medical Air Compressor Source. The medical air compressors shall draw their air from a source of clean air. [NFPA 99:5.1.3.6.3.11(A)]

If an air source equal to or better than outside air (e.g., air already filtered for use in operating room ventilating systems) is available, it shall be permitted to be used for the medical air compressors with the following provisions:

- (1) This alternate source of supply air shall be continuously available 24 hours per day, 7 days per week.
- (2) Ventilating systems having fans with motors or drive belts located in the airstream shall not be used as a source of medical air intake. [NFPA 99:5.1.3.6.3.11(E)]

1314.3.2 Source of Dental Air Compressor Intake. Dental air sources for a compressor shall meet the following requirements:

- (1) If the intake is located inside the building:
 - (a) It shall be located within a space where no chemical-based materials are stored or used.
 - (b) It shall be located in a space that is not used for patient medical treatment.
 - (c) It shall not draw air from a room or space in which there is an open or semi-open discharge from a Category 3 vacuum system.
- (2) If the intake is located outside the building, it shall draw air from locations where no contamination from vacuum exhaust discharges or particulate matter is anticipated. [NFPA 99:5.3.3.6.1.5]

1314.4 Air Intakes. Compressor intake piping shall be permitted to be made of materials and use a joining technique as permitted under Section 1308.5 and Section 1309.2. [NFPA 99:5.1.3.6.3.11(F)]

1314.4.1 Location. Medical air intakes shall be located as follows:

- (1) A minimum of 25 feet (7620 mm) from ventilating system exhausts, fuel storage vents, combustion vents, plumbing vents, vacuum discharges, and areas that can collect vehicular exhausts or other noxious fumes.
- (2) A minimum of 20 feet (6096 mm) above ground level.
- (3) A minimum of 10 feet (3048 mm) from any door, window, or other opening in the building. [NFPA 99:5.1.3.6.3.11(B-D)]

1314.4.2 Separate Compressors. Air intakes for separate compressors shall be permitted to be joined to one common intake where the following conditions are met:

- (1) The common intake is sized to minimize backpressure in accordance with the manufacturer's recommendations.
- (2) Each compressor can be isolated by manual or check valve, blind flange, or tube cap to prevent open inlet piping when the compressor is removed for service from

the consequent backflow of room air into the other compressor(s). [NFPA 99:5.1.3.6.3.11(G)]

1314.4.3 Screening. The end of the intake shall be turned down and screened or otherwise be protected against the entry of vermin, debris, or precipitation by a screen fabricated or composed of a noncorroding material. [NFPA 99:5.1.3.6.3.11(H)]

1314.5 Medical Air Receivers. Receivers for medical air shall:

- (1) Be made of corrosion-resistant materials or otherwise be made corrosion resistant.
- (2) Comply with Section VIII, "Unfired Pressure Vessels," of the ASME Boiler and Pressure Vessel Code.
- (3) Be equipped with a pressure relief valve, automatic drain, manual drain, sight glass, and pressure indicator.
- (4) Be of sufficient capacity to prevent the compressor from short-cycling. [NFPA 99:5.1.3.6.3.6]

1314.5.1 Category 3 Dental Air. Receivers shall:

- (1) Have the capacity to prevent short-cycling of the compressor(s).
- (2) Comply with Section VIII "Unfired Pressure Vessels" of the ASME Boiler and Pressure Vessel Code. [NFPA 99:5.3.3.6.1.2]

1314.5.2 Valves. A medical air receiver shall be provided with proper valves to allow the flow of compressed air to enter and exit out of separate receiver ports during normal operation and allow the receiver to be bypassed during service without shutting down the supply of medical air. [NFPA 99:5.1.3.6.3.9(D)]

1315.2 Medical-Surgical Vacuum Sources. Medical-surgical vacuum sources shall consist of the following:

- (1) Two or more vacuum pumps sufficient to serve the peak calculated demand with the largest single vacuum pump out of service.
- (2) An automatic means to prevent backflow from on-cycle vacuum pumps through off-cycle vacuum pumps.
- (3) A shutoff valve or other isolation means to isolate each vacuum pump from the centrally piped system and other vacuum pumps for maintenance or repair without loss of vacuum in the system.
- (4) A vacuum receiver.
- (5) Piping between the vacuum pump(s), discharge(s), receiver(s), and the vacuum source shutoff valve shall be in accordance with Section 1308.5, except that brass, galvanized, or black steel pipe shall be permitted to be used in accordance with the manufacturer's instructions.
- (6) ~~Materials~~ Except as defined in Section 1315.2(1) through Section 1315.2(5), materials and devices used between the medical vacuum exhaust and the medical vacuum source shall be permitted to be of a design or construction appropriate for the service, as determined by the manufacturer's instructions and specifications. [NFPA 99:5.1.3.7.1.2]

1315.2.1 Category 2 Medical-Surgical Vacuum. Category 2 systems shall comply with Section 1315.2, except as follows:

- (1) Medical-surgical vacuum systems shall be permitted to be simplex.
- (2) The facility shall develop an emergency plan to deal with the loss of medical-surgical vacuum. [NFPA 99:5.2.3.6]

1315.2.2 Category 3 Medical-Surgical Vacuum. Category 3 medical-surgical vacuum systems shall comply with Section 1315.2. [NFPA 99:5.3.3.9]

1315.5.1 Location. The exhaust shall be located as follows:

- (1) Outdoors.
- (2) ~~Not less than 10 feet (3048 mm)~~ At least 25 feet (7620 mm) from any door, window, air intake, or other openings in a buildings or places of public assembly.
- (3) At a level different from air intakes.
- (4) Where prevailing winds, adjacent buildings, topography, or other influences ~~that~~ will not divert the exhaust into occupied areas or prevent dispersion of the exhaust. [NFPA 99:5.1.3.7.7.2]

{EDITORIAL NOTE: DELETE SECTION 1316.2 IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:}

1316.2 Pressure-Relief Valves. All pressure relief valves shall:

- (1) Be of brass, bronze, or stainless steel construction.
- (2) Be designed for the specific gas service.
- (3) Have a relief pressure setting not higher than the maximum allowable working pressure (MAWP) of the component with the lowest working pressure rating in the portion of the system being protected.
- (4) Be vented to the outside of the building, except that relief valves for compressed air systems having less than 3000 cubic feet (84 950 L) at STP shall be permitted to be diffused locally by means that will not restrict the flow.
- (5) Have a vent discharge line that is not smaller than the size of the relief valve outlet.
- (6) Where two or more relief valves discharge into a common vent line, have an internal cross-sectional area that is not less than the aggregate cross-sectional area of all relief valve vent discharge lines served.
- (7) Not discharge into locations creating potential hazards.
- (8) Have the discharge terminal turned down and screened to prevent the entry of rain, snow, or vermin.
- (9) Be designed in accordance with ASME B31.3. [NFPA 99:5.1.3.5.6.1]

1316.2.1 Category 3 Dental Air Pressure Relief Valve Discharge. Pressure relief valves for dental air systems having less than 3000 cubic feet (84 950 L) at STP shall be permitted to discharge locally indoors in a safe manner that will not restrict the flow. [NFPA 99:5.3.3.6.1.4]

1316.2.2 Isolation. A pressure-relief valve shall not be isolated from its intended use by a valve.

1318.1 Category 1 and 2 Systems. Master, area, and local alarm systems used for medical gas and medical vacuum systems shall include the following:

{EDITORIAL NOTE: THE REMAINDER OF THIS SECTION REMAINS AS SET FORTH IN THE 2015 UPC.}

1318.1.1 Master Alarm. The master alarm shall include at least one signal from the source equipment to indicate a problem with the source equipment. This master alarm signal shall activate when any of the required local alarm signals for this source equipment activates. [NFPA 99:5.1.9.5.2]

{EDITORIAL NOTE: DELETE SECTIONS 1318.2 AND 1318.3 AND REPLACE WITH THE FOLLOWING:}

1318.2 Category 2 Systems. Warning systems associated with Category 2 systems shall provide the master, area, and local alarm functions of a Category 1 system as required in Section 1318.1, except as follows:

- (1) Warning systems shall be permitted to be a single alarm panel.
- (2) The alarm panel shall be located in an area of continuous surveillance while the facility is in operation.
- (3) Pressure and vacuum switches/sensors shall be mounted at the source equipment with a pressure indicator at the master alarm panel. [NFPA 99:5.2.9]

1318.3 Category 3 Systems. Category 3 warning systems shall comply with Section 1318.2, except as follows:

- (1) Warning systems shall be permitted to be a single alarm panel.
- (2) The alarm panel shall be located in an area of continuous surveillance while the facility is in operation.
- (3) Pressure and vacuum switches/sensors shall be mounted at the source equipment with a pressure indicator at the master alarm panel.
- (4) Warning systems for medical gas systems shall provide the following alarms:
 - (a) Oxygen main line pressure low.
 - (b) Oxygen main line pressure high.
 - (c) Oxygen changeover to secondary bank or impending changeover (if automatic).
 - (d) Nitrous oxide main line pressure low.
 - (e) Nitrous oxide main line pressure high.
 - (f) Nitrous oxide changeover to secondary bank or impending changeover (if automatic).
- (5) Cancelable audible and noncancelable visual alarm signals shall indicate if the pressure in the main line increases or decreases 20 percent from the normal operating pressure.
- (6) Noncancelable visual alarm signals shall continue until the situation that caused the alarm is resolved.
- (7) Pressure switches/sensors shall be installed downstream of any shutoff valves in the system and shall cause an alarm for the medical gas if the pressure decreases or increases 20 percent from the normal operating pressure.

- (8) A cancelable audible indication of each alarm condition that produces a sound at the alarm panel shall reinitiate the audible signal if another alarm condition occurs while the audible signal is silenced. [NFPA 99:5.3.9]

1318.4 Components. Alarm component function shall be verified in accordance with the testing and monitoring requirements of the manufacturer and the Authority Having Jurisdiction.

1319.2 Breached Systems. Systems that are breached and components that are subject to additions, renovations, or replacement shall be inspected and tested. Systems shall be deemed breached at the point of pipeline intrusion by physical separation or by system component removal, replacement, or addition. Breached portions of the systems subject to inspection and testing shall be confined to the specific altered zone and components in the immediate zone or area that is located upstream for medical vacuum systems and downstream for pressure gases at the point or area of intrusion. [NFPA 99:5.1.12.1.3 – 5.1.12.1.5]

1319.4 Initial Piping Blow Down. Piping in medical gas and medical vacuum distribution systems shall be blown clear by means of oil-free, dry nitrogen NF after installation of the distribution piping, and before installation of station outlet and inlet rough-in assemblies and other system components. [NFPA 99:5.1.12.2.2, 5.3.6.23.2.2]

1319.4.1 Test Gas. The test gas shall be oil-free, dry nitrogen NF. [NFPA 99:5.1.12.2.1.2]

1319.5 Initial Pressure Tests – Medical Gas and Medical Vacuum Systems. Each section of piping in medical gas and medical vacuum systems shall be pressure tested ~~by a party qualified in accordance with Section 1306.1, and using oil-free, dry nitrogen NF.~~ [NFPA 99:5.1.12.2.3.1, 5.3.6.23.2.3(A)]

Initial pressure tests shall be conducted:

- (1) After blow down of the distribution piping.
- ~~(2) After installation of station outlet and inlet rough-in assemblies. Test caps shall be permitted to be used.~~
- (3) Prior to the installation of components of the distribution piping system that would be damaged by the test pressure. [NPFA 99:5.1.12.2.3.2, 5.3.6.23.2.3(B)]

1319.5.1 Shutoff Valve. ~~The source shutoff valve for the piping system shall remain closed during the tests specified in Section 1319.5.~~ [NFPA 99:5.1.12.2.3.3, 5.3.6.23.2.3(C)]

1319.5.4 Initial Pressure Test – Category 3 Copper Piping Systems. Initial pressure tests shall be conducted as follows:

- (1) After blowdown of the distribution piping.
- (2) Station outlets and inlets shall be tested after installation of outlet and inlet shutoff valves.
- (3) Prior to the installation of components of the distribution piping system that would be damaged by the test pressure.
- (4) With source shutoff valves for the piping systems closed during the tests, unless being used for the pressure test gas.

- (5) With test pressure 1.5 times the system operating pressure but not less than a gauge pressure of 150 psi (1034 kPa).
- (6) With test pressure maintained until each joint is examined for leakage by means of a detectant that is safe for use with oxygen and that does not contain ammonia.
- (7) If a leak is located in any component, the component shall be repaired or replaced by the installer and retested. [NFPA 99:5.3.12.2.4]

1319.5.5 Initial Leak Test – Category 3 Plastic Vacuum Piping Systems. Initial leak tests shall be conducted as follows:

- (1) Each section of the piping in Category 3 vacuum systems with plastic piping shall be leak tested using a test vacuum or the vacuum source equipment.
- (2) If installed, the vacuum source shutoff valves for the piping systems shall remain closed during the tests, unless being used for the leak test vacuum source.
- (3) The leak test vacuum shall be a minimum of 12 inches (305 mm) HgV.
- (4) The test vacuum shall be maintained until each joint has been examined for leakage. An ultrasonic leak detector shall be permitted to be used.
- (5) If a leak is located in any component, the component shall be repaired or replaced by the installer and retested. [NFPA 99:5.3.12.2.5]

1319.6 Cross-Connection Tests – Medical Gas and Medical Vacuum Systems. A party qualified in accordance with Section 1306.1 shall determine that no cross-connections exist between medical gas and medical vacuum piping systems. [NFPA 99:5.1.12.2.4, 5.3.6.23.2.4]

1319.6.7 Initial Cross-Connection Test – Category 3 Copper Piping Systems. Initial cross-connection tests for copper piping systems shall be conducted as follows:

- (1) Tests shall be conducted to determine that no cross-connections exist between the Category 3 copper piping systems and Category 3 copper vacuum piping systems.
- (2) The piping systems shall be at atmospheric pressure.
- (3) The test gas shall be oil-free, dry nitrogen NF or dental air.
- (4) The source of test gas shall be connected only to the piping system being tested.
- (5) The piping system being tested shall be pressurized to a gauge pressure of 50 psi (345 kPa).
- (6) The individual system gas outlet and vacuum inlet in each installed gas-powered device and copper vacuum or copper piping system shall be checked to determine that the test gas pressure is present only at the piping system being tested.
- (7) The cross-connection test shall be repeated for each installed Category 3 piping system for gas-powered devices and for each vacuum with copper piping.
- (8) Proper labeling and identification of system outlets/inlets shall be confirmed during the tests. [NFPA 99:5.3.12.2.6]

1319.6.8 Cross-Connection Test – Category 3 Plastic Vacuum Piping Systems. Initial cross-connection tests for plastic vacuum piping systems shall be conducted as follows:

- (1) Tests shall be conducted to determine that no cross connections exist between any Category 3 plastic vacuum piping systems and Category 3 copper piping systems.
- (2) The vacuum source shutoff valves for the vacuum piping systems shall remain closed during the tests unless they are being used for the cross-connection test vacuum source.
- (3) The cross-connection test vacuum shall be a minimum of 12 inches (305 mm) HgV.
- (4) The source of test vacuum shall be connected only to the vacuum piping system being tested.
- (5) The individual gas-powered device system gas outlets and vacuum system inlets shall be checked to determine that the test vacuum is only present at the vacuum piping system being tested.
- (6) The cross-connection tests shall be repeated for each installed vacuum system with plastic piping.
- (7) Proper labeling and identification of system outlets/inlets shall be confirmed during the tests. [NFPA 99:5.3.12.2.7]

1319.7.1 Time Frame for Testing. Tests shall be conducted after the final installation of station outlet valve bodies, face plates, and other distribution system components. [NFPA 99:5.1.12.2.6.1, 5.3.6.23.2.6(A)]

1319.9.2 Location. Purging shall start at the closest outlet or inlet to the zone valve and continue to the furthest outlet or inlet within the zone. [NFPA 99:5.1.12.2.5.2]

Exception: For Category 3 medical gas piping systems, purging shall start at the furthest outlet in the system and proceed toward the source equipment. [NFPA 99:5.3.6.23.2.5(C)]

1319.13 Standing Pressure Tests – Category 3 Gas Powered Device Distribution Piping. After successful completion of the initial pressure tests under Section 1319.6.7, Category 3 gas-powered device distribution piping shall be subjected to a standing pressure test, which includes the following:

- (1) Tests shall be conducted after the installation of outlet valves and other distribution system components.
- (2) The source valve shall be closed unless the source gas is being used for the test.
- (3) The piping systems shall be subjected to a 24 hour standing pressure testing using oil-free, dry nitrogen NF or the system gas.
- (4) Test pressures shall be 20 percent above the normal system operating line pressure.
- (5) At the conclusion of the tests, there shall be no change in the test pressure greater than a gauge pressure of 5 psi (34 kPa).
- (6) If a leak is located in any component, the component shall be repaired or replaced by the installer and retested. [NFPA 99:5.3.12.2.9]

1319.14 Category 3 Dental Air and Nitrogen Supply Systems Purge Tests. The purge tests for dental air and nitrogen supply systems shall be conducted as follows:

- (1) The outlets in each Category 3 dental air and nitrogen supply piping system shall be purged to remove any particulate matter from the distribution piping.
- (2) The test gas shall be oil-free, dry nitrogen NF or the system gas.
- (3) Each outlet shall be purged with an intermittent high-volume flow of test gas until the purge produces no discoloration in a clean white cloth.
- (4) The purging shall be started at the furthest outlet in the system and proceed toward the source equipment. [NFPA 99:5.3.12.2.8]

CHAPTER 15

ALTERNATE WATER SOURCES FOR NONPOTABLE APPLICATIONS

1501.2 System Design. Alternate water source systems shall be designed in accordance with this chapter by a registered design professional or a person who demonstrates competency to design the alternate water source system as required by the Authority Having Jurisdiction. Components, piping, and fittings used in an alternate water source system shall be listed.

Exceptions:

- (1) A registered design professional is not required to design gray water systems having a maximum discharge capacity of 250 gallons per day (gal/d) (0.011 L/s) for single-family and multi-family dwellings.
- (2) A registered design professional is not required to design an on-site treated nonpotable water system for single family dwellings having a maximum discharge capacity of 250 gal/d (0.011 L/s).

Systems subject to Title 30 of the Texas Administrative Code shall be designed and installed as required by the Texas Commission on Environmental Quality and the Texas State Board of Plumbing Examiners.

CHAPTER 16

NONPOTABLE RAINWATER CATCHMENT SYSTEMS

1602.9.3.2 Prohibited Discharges. Overflows and bleed-off pipes from roof-mounted equipment and appliances shall not discharge any material other than air conditioning condensate onto roof surfaces that are intended to collect rainwater.

CHAPTER 17

REFERENCED STANDARDS

1701.1 Standards. The standards listed in Table 1701.1 are intended for use in the design, testing, and installation of materials, devices, appliances, and equipment regulated by this code. These standards are mandatory where required by sections in this code. The application of the referenced standard(s) shall be as specified in Section 301.2.2.

Organization abbreviations referred to in Table 1701.1 are defined in a list found at the end of the table.

**TABLE 1701.1
REFERENCED STANDARDS**

Standard Number	Standard Title	Application	Referenced Sections
ASME A112.4.2-201509/CSA B45.16-2015*	Water Closet Personal Hygiene Devices	Fixtures	301.2.2, 301.3, <u>411.4</u>
ASME A112.6.7-2010 (R2015)*	Sanitary Floor Sinks	Fixtures	421.1
ASME A112.6.9-2005 (R201540)*	Siphonic Roof Drains	DWV Components	301.2.2, 301.3, <u>1107.3</u>
ASME A112.14.3-2000 (R201494)*	Grease Interceptors	Fixtures	1014.1
ASME A112.14.6-2010 (R2015)*	FOG (Fats, Oils, and Greases) Disposal Systems	Fixtures	1015.2, 1015.4
ASME A112.18.2-2011544/CSA B125.2-2011544*	Plumbing Waste Fittings	Fittings	301.2.2, 301.3
ASME A112.18.6-2009/CSA B125.6-2009 (R2014)*	Flexible Water Connectors	Piping	604.5, 604.12
ASME A112.19.3-2008/CSA B45.4-2008 (R2013)*	Stainless Steel Plumbing Fixtures	Fixture	407.1, 408.1, 409.1, 410.1, 411.1, 411.2, 411.2.2, 412.1, 415.1, 420.1, L 402.2.1, L 402.2.2, L 402.3
ASME A112.19.5-2011/CSA B45.15-2011 (R2016)*	Flush Valves and Spuds for Water Closets, Urinals, and Tanks	Fixtures	413.3
ASME A112.19.12-201406 (R2011)*	Wall Mounted, Pedestal Mounted, Adjustable, Elevating, Tilting, and Pivoting Lavatory, Sink, and Shampoo Bowl Carrier Systems and Drain Waste Systems	Fixtures	407.1, 420.1
ASME A112.19.19-20162006 (R2011)*	Vitreous China Nonwater Urinals	Fixtures	412.1, L 402.3.1
ASME B16.1-20152040*	Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250	Fittings	1208.5.10
ASME B16.12-2009 (R2014)*	Cast Iron Threaded Drainage Fittings (Note 1)	Fittings	Table 701.2
<u>ASME B16.22</u>	<u>Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings</u>	<u>Fittings</u>	<u>Table 604.1, 1308.6(3)(a)</u>

<u>ASME B16.26</u>	<u>Cast Copper Alloy Fittings for Flared Copper Tubes</u>	<u>Fittings</u>	<u>Table 604.1, 1308.6(3)(b)</u>
<u>ASME B16.42-2011</u>	<u>Ductile Iron Pipe and Flanged Fittings</u>	<u>Fuel Gas Piping</u>	<u>1208.6.13.4</u>
<u>ASME B16.50²</u>	<u>Wrought Copper and Copper Alloy Braze-Joint Pressure Fittings</u>	<u>Fittings</u>	<u>Table 604.1</u>
<u>ASME B31.1-2014</u> 2012 *	Process Piping	Piping	F 1201.1
<u>ASME B31.3-2014</u>	<u>Process Piping</u>	<u>Piping</u>	<u>1316.2(9)</u>
<u>ASME B36.10M-2015</u> 2004 (R2010) *	Welded and Seamless Wrought Steel Pipe	Piping, Ferrous	1208.5.2.1(1)
<u>ASME BPVC Section VIII-2015</u> 2013 *	Rules for Construction of Pressure Vessels Division 1	Miscellaneous	1314.2(2), 1315.4(2), E 413.6.2
<u>ASME BPVC Section IX-2015</u> 2013 *	Welding, Brazing, and Fusing Qualifications	Certification	225.0, 1307.1, 1309.5.1, 1309.5.2
<u>ASPE 45-2013</u>	<u>Siphonic Roof Drainage</u>	<u>Storm Drainage</u>	<u>1107.2</u>
<u>ASSE 1002/ASME A112.1002/CSA B125.12-2015-2008</u> *	Anti-Siphon Fill Valves for Water Closet Tanks	Backflow Protection	413.3, Table 603.2
<u>ASSE 1016-2017</u> 2014 / <u>ASME A112.1016-2017</u> 2014 / <u>CSA B125.16-2017</u> 2014 *	Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations	Valves	408.3, L 402.6.3
<u>ASSE 1019-2011 R(2016)</u> *	Wall Hydrant with Backflow Protection and Freeze Resistance	Backflow Protection	Table 603.2
<u>ASSE 1037-2015/ASME A112.1037-2015/CSA B125.37-2015</u> 1999	Pressurized Flushing Devices (Flushometers) for Plumbing Fixtures	Backflow Protection	413.2
<u>ASSE 1044-2015</u> 2004 *	Trap Seal Primer Devices – Drainage Types and Electronic Design Types	DWV Components	301.2.2, 301.3, <u>1007.2</u>
<u>ASSE 1052-2016</u> 2004 *	Hose Connection Backflow Preventers	Backflow Protection	Table 603.2
<u>ASSE 1055-2016</u> 2009 *	Chemical Dispensing Systems	Backflow Protection	301.2.2, 301.3, <u>603.5.21</u>
<u>ASSE 1060-2017</u> 2006 *	Outdoor Enclosures for Fluid Conveying Components	Miscellaneous	603.4.7
<u>ASSE 1061-2015</u> 2014 *	Push-Fit Fittings	Fittings	605.1.3.3, 605.2.1, Table 604.1
<u>ASSE 1070-2015/ASME A112.1070-2015/CSA B125.70-2015</u> 2004 *	Water Temperature Limiting Devices	Valves	407.3, 409.4, 410.3
<u>ASSE Series 5000-2015</u> 2009 *	Cross-Connection Control Professional Qualifications	Certification	603.2
<u>ASSE Series 6000-2015</u> 2012 *	Professional Qualifications Standard for Medical Gas Systems Personnel	Certification	1306.1, 1319.12.2
<u>ASTM A74-2016</u> 2013a	Cast Iron Soil Pipe and Fittings (Notes 1 and 7)	Piping, Ferrous	Table 701.2

ASTM A106/A106M- 2015 2013	Seamless Carbon Steel Pipe for High-Temperature Service	Piping, Ferrous	1208.5.2.1(3)
ASTM A269/A269M- 2015a - 2013	Seamless and Welded Austenitic Stainless Steel Tubing for General Service	Piping, Ferrous	F 801.2, Table 604.1, <u>1308.5(2)(a)</u>
ASTM A312/A312M- 2016a 2013b	Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	Piping, Ferrous	Table 604.1, <u>1308.5(2)(b)</u>
ASTM A403/A403M-2011	<u>Wrought Austenitic Stainless Steel Pipe Fittings</u>	<u>Fittings</u>	<u>1308.5(2)(c)</u>
ASTM A888- 2015 2013a	Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications (Note 7)	Piping, Ferrous	Table 701.2
<u>ASME B16.22-2013</u>	<u>Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings</u>	<u>Fittings</u>	<u>1308.6(3)(a)</u> , Table 604.1
ASTM B32-2008 (R2014)	Solder Metal (Note 2)	Joints	605.1.4, 705.3.3, <u>1308.6(4)</u> , 1309.2
ASTM B42- 2015a 2010	Seamless Copper Pipe, Standard Sizes	Piping, Copper Alloy	Table 604.1
ASTM B43- 2015 2009	Seamless Red Brass Pipe, Standard Sizes	Piping, Copper Alloy	Table 604.1, Table 701.2
ASTM B88- 2016 2009	Seamless Copper Water Tube	Piping, Copper Alloy	604.4, 903.2.3, 1208.5.3.2, 1308.5(1)(a), E 409.1, Table 604.1
ASTM B241/B241M- 2016 2012 ^{el}	Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube	Piping, Ferrous	1208.5.2.3, 1208.5.3.3
ASTM B280- 2016 2013	Seamless Copper Tube for Air Conditioning and Refrigeration Field Service	Piping, Copper Alloy	1208.5.3.2, 1308.5(1)(b), E 409.1
ASTM B813- 2016 2010	Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube	Joints	605.1.4, 705.3.3
ASTM B828- 2016 2002 (R2010)	Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings	Joints	605.1.4, 705.3.3, <u>1308.6(4)</u> , 1309.2
ASTM C4-2004 (R2014) 09	Clay Drain Tile and Perforated Clay Drain Tile	Piping, Non-Metallic	Table 1101.4.6
ASTM C564- 2014 2012	Rubber Gaskets for Cast Iron Soil Pipe and Fittings	Joints	705.2.2
ASTM C1053-2000 (R2015) 14	Borosilicate Glass Pipe and Fittings for Drain, Waste, and Vent (DWV) Applications (Note 1)	Piping, Non-Metallic	811.2
ASTM C1173- 2010 ^{el} (R2014)	Flexible Transition Couplings for Underground Piping Systems	Joints	705.9
ASTM C1277- 2015 2012	Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings	DWV Components	301.2.4, 705.2.2
ASTM C1540- 2015 2014	Heavy Duty Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings	Joints	705.2.2
ASTM C1563- 2004 2008 (R2013)	Gaskets for Use in Connection with Hub & Spigot Cast Iron Soil Pipe and Fittings for Sanitary Drain, Waste, Vent, and Storm Piping Applications	Joints	705.2.2
ASTM C1822-2015	<u>Insulating Covers on Accessible Lavatory Piping</u>	<u>Miscellaneous</u>	

ASTM D1785- 2015 2012*	Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120 (Note 7)	Piping, Plastic	1308.5, Table 604.1, <u>1308.6(2)(a)</u> , Table 701.2
ASTM D2235-2004 (R20164)*	Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings	Joints	705.1.2
ASTM D2241- 2015 2009*	Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)	Piping, Plastic	Table 604.1
ASTM D2464- 2015 2013*	Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80 (Note 1)	Fittings	Table 604.1
ASTM D2466- 2015 2013*	Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40 (Note 1)	Fittings	<u>1308.6(2)(b)</u> , 1309.2, Table 604.1
ASTM D2467- 2015 2013a*	Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80 (Note 1)	Fittings	<u>1308.6(2)(b)</u> , 1309.2, Table 604.1
ASTM D2513- 2014 ^{el} 2013*	Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings (Note 1)	Piping, Plastic	1208.5.4, 1208.5.4.2.2, 1208.5.9.2, 1210.1.7.1(1), E 409.3
ASTM D2609- 2015 2002 (R2008)*	Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe (Note 1)	Fittings	Table 604.1
ASTM D2661- 2014 2011*	Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings (Notes 1 and 7)	Piping, Plastic	Table 701.2
ASTM D2665- 2014 2012*	Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings (Note 7)	Piping, Plastic	Table 701.2
ASTM D2672- 2014 1996a (R2009)*	Joints for IPS PVC Pipe Using Solvent Cement	Joints	<u>1308.6(2)(c)</u> , 1309.2
ASTM D2680-2001 (R201409)*	Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping (Note 7)	Piping, Plastic	Table 701.2
ASTM D2683- 2014 2010 ^{el} *	Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing	Fittings	Table 604.1
ASTM D2846/D2846M- 2014 2009b ^{el} *	Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution System	Piping, Plastic	605.2.2, 605.3.1, 1308.5, <u>1308.6(2)(f)</u> , 1309.2, Table 604.1
ASTM D3034- 2014a 2008*	Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings (Note 7)	Piping, Plastic	301.2.2, 301.3
ASTM D3035- 2015 2012 ^{e2} *	Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter	Piping, Plastic	Table 604.1
ASTM D3138-2004- (R20164)*	Solvent Cements for Transition Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Non-Pressure Piping Components	Joints	705.8.4
ASTM D3261- 2016 2012 ^{el} *	Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing	Fittings	Table 604.1
ASTM D4068- 2015 2009*	Chlorinated Polyethylene (CPE) Sheeting for Concealed Water-Containment Membrane	Miscellaneous	408.7.2
ASTM E84- 2016 2013a*	Surface Burning Characteristics of Building Materials	Miscellaneous	701.2(2), 903.1(2), 1101.4

ASTM E119- 2016a 2012a*	Fire Tests of Building Construction and Materials	Miscellaneous	1404.3, 1405.3
ASTM F437- 2015 2009*	Threaded Chlorinated Poly (Vinyl Chlorinated) (CPVC) Plastic Pipe Fittings, Schedule 80	Fittings	Table 604.1
ASTM F438- 2015 2009*	Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40	Fittings	<u>1308.6(2)(e)</u> , 1309.2(5), Table 604.1
<u>ASTM F439-2013*</u>	<u>Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80</u>	<u>Fittings</u>	<u>1308.6(2)(e)</u> , 1309.2(5), Table 604.1
ASTM F441/F441M- 2015 2013 ^{el} *	Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80	Piping, Plastic	1308.5, <u>1308.6(2)(d)</u> , Table 604.1
ASTM F493- 2014 2010*	Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings	Joints	605.2.2, 605.3.1, <u>1308.6(2)(g)</u> , 1309.2
ASTM F656- 2015 2010*	Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings	Joints	605.2.2, 605.3.1, 605.12.2, 705.5.2
ASTM F667/F667M- 2016 2012*	3 through 24 in. Corrugated Polyethylene Pipe and Fittings	Piping, Plastic	301.2.2, 301.3
ASTM F794-2003 (R201409)*	Poly (Vinyl Chlorinated) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter (Note 7)	Piping, Plastic	Table 701.2
ASTM F876- 2015a 2013a*	Crosslinked Polyethylene (PEX) Tubing	Piping, Plastic	605.9.1, Table 604.1
ASTM F1055- 2016a 2013*	Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene and Crosslinked Polyethylene (PEX) Pipe and Tubing	Fittings	Table 604.1
ASTM F1216- 2016 2009*	Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube	Piping, Plastic	715.3
ASTM F1336- 2015 2007*	Poly (Vinyl Chloride) (PVC) Gasketed Sewer Fittings	Fittings	301.2.2, 301.3
ASTM F1412- 2016 2009*	Polyolefin Pipe and Fittings for Corrosive Waste Drainage Systems	Piping, Plastic	811.2
ASTM F1488- 2014 2009 ^{el} *	Coextruded Composite Pipe (Note 7)	Piping, Plastic	Table 701.2
ASTM F1673-2010 (R2016)*	Polyvinylidene Fluoride (PVDF) Corrosive Waste Drainage Systems	Piping, Plastic	811.2
<u>ASTM F1760-2001 (R2011)</u>	<u>Coextruded Poly (Vinyl Chloride) (PVC) Non-Pressure Plastic Pipe Having Reprocessed Recycled Content</u>	<u>Piping</u>	
ASTM F1807- 2015 2013a*	Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	Fittings	Table 604.1
ASTM F1866- 2013 2007*	Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings	Fittings	Table 701.2
ASTM F1960- 2015 2012*	Cold Expansion Fittings with PEX Reinforcing Rings for Use with	Fittings	Table 604.1

	Cross-linked Polyethylene (PEX) Tubing		
ASTM F1974-2009 (R2015)*	Metal Insert Fittings for Polyethylene/Aluminum/Polyethylene and Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene Composite Pressure Pipe	Fittings	605.7.1, 605.10.1, Table 604.1
ASTM F2080- 20162012*	Cold-Expansion Fittings with Metal Compression-Sleeves for Cross-linked Polyethylene (PEX) Pipe	Fittings	Table 604.1
ASTM F2098- 20152008*	Stainless Steel Clamps for Securing SDR9 Cross-linked Polyethylene (PEX) Tubing to Metal Insert and Plastic Insert Fittings	Joints	Table 604.1
ASTM F2159- 20142011*	Plastic Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	Joints	Table 604.1
ASTM F2389- 20152010*	Pressure-Rated Polypropylene (PP) Piping Systems	Piping, Plastic	605.11.1, 606.1, Table 604.1
ASTM F2434- 20142009*	Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Cross-linked Polyethylene /Aluminum/Cross-linked Polyethylene (PEX-AL-PEX) Tubing	Fittings	605.10.1, Table 604.1
ASTM F2509- 20152012*	Field-Assembled Anodeless Riser Kits for Use on Outside Diameter Controlled Polyethylene Gas Distribution Pipe and Tubing	Fuel Gas	1210.1.7.1(3)
ASTM F2618-2015	Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems	Piping	
ASTM F2620- 20132012*	Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings	Joints	605.6.1.1, 605.6.1.3
ASTM F2735-2009 (R2016)	Plastic Insert Fittings for SDR9 Cross-linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing	Fittings	Table 604.1
ASTM F2769- 20162010	Polyethylene of Raised Temperature (PE-RT) Plastic Hot and Cold-Water Tubing and Distribution Systems	Piping and Fittings, Plastic	Table 604.1
AWWA C210- 20152007*	Liquid-Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines	Miscellaneous	604.9
AWWA C504- 20152010*	Rubber Seated Butterfly Valves, 3 in. (75 mm) through 72 in. (1800 mm)	Valves	606.1
AWWA C507- 20152011*	Ball Valves, 6 in. through 60 in. (150 mm through 1500 mm)	Valves	606.1
AWWA C900- 20162007*	Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100 mm through 300 mm), for Water Transmission and Distribution	Piping, Plastic	Table 604.1
AWWA C904- 20162006*	Cross-linked Polyethylene (PEX) Pressure Pipe, 1/2 in. (12 mm) through 3 in. (76 mm), for Water Service	Piping, Plastic	Table 604.1

CSA B45.5-2011/IAPMO Z124-2011 (R2016)	Plastic Plumbing Fixtures	Fixtures	407.1, 408.1, 409.1, 411.1, 412.1, 420.1, L 402.3, L 402.3.1
CSA B64.1.1-2011 (R2016)	Atmospheric Vacuum Breakers (AVB)	Backflow Protection	Table 603.2
CSA B64.1.2-2011 (R2016)	Pressure Vacuum Breakers (PVB)	Backflow Protection	Table 603.2
CSA B64.2.1.1-2011 (R2016)	Hose Connection Dual Check Vacuum Breakers (HCVB)	Backflow Protection	Table 603.2
CSA B64.4-2011 (R2016)	Reduced Pressure Principle (RP) Backflow Preventers	Backflow Protection	Table 603.2
CSA B64.4.1-2011 (R2016)	Reduced Pressure Principle Backflow Preventers for Fire Protection Systems (RPF)	Backflow Protection	Table 603.2
CSA B64.5-2011 (R2016)	Double Check Valve (DCVA) Backflow Preventers	Backflow Protection	Table 603.2
CSA B64.5.1-2011 (R2016)	Double Check Valve Backflow Preventers for Fire Protection Systems (DVCAF)	Backflow Protection	Table 603.2
CSA B125.5/IAPMO Z2600-2011	Flexible Water Connectors with Excess Flow Shutoff Device	Miscellaneous	
CSA B137.18-2013	Polyethylene of Raised Temperature (PE-RT) Tubing Systems for Pressure Applications	Piping, Fittings	Table 604.1
CSA B181.3-2015 2014	Polyolefin and Polyvinylidene Fluoride (PVDF) Laboratory Drainage Systems	Piping, Plastic	811.2
CSA LC 1- 2016b-2011 *	Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing (CSST) (same as CSA 6.26 b)	Fuel Gas	1208.5.3.4
CSA Z21.10.1- 2014 2013*	Gas Water Heaters – Volume I, Storage Water Heaters with Input Ratings of 75 000 Btu Per Hour or Less (same as CSA 4.1)	Fuel Gas, Appliances	Table 501.1(2)
CSA Z21.10.3- 2015 2013*	Gas-Fired Water Heaters – Volume III, Storage Water Heaters with Input Ratings Above 75 000 Btu Per Hour, Circulating and Instantaneous (same as CSA 4.3)	Fuel Gas, Appliances	Table 501.1(2), Table L 603.3.2
CSA Z21.22 b-2015 2001 (R2008)*	Relief Valves for Hot Water Supply Systems (same as CSA 4.4 b)	Valves	607.5, 608.7
CSA Z21.24 a-2015 2009 (R2011)*	Connectors for Gas Appliances (same as CSA 6.10a)	Fuel Gas	1212.1(3), 1212.2
CSA Z21.41- 2014 2011*	Quick-Connect Devices for Use with Gas Fuel Appliances (same as CSA 6.9)	Fuel Gas	1212.6
CSA Z21.54 b-2014 2009*	Gas Hose Connectors for Portable Outdoor Gas-Fired Appliances (same as CSA 8.4b)	Fuel Gas	1212.3.2
CSA Z21.69 a-2015 2012*	Connectors for Movable Gas Appliances (same as CSA 6.16a)	Fuel Gas	1212.1.1
CSA Z21.75 a-2016 2009*	Connectors for Outdoor Gas Appliances and Manufactured Homes (same as CSA 6.27a)	Appliances	1212.1(4)
CSA Z21.90 b-2015 2006 (R2011)*	Gas Convenience Outlets and Optional Enclosures (same as CSA 6.24b)	Fuel Gas	1212.7
IAPMO Z1001- 2016 2013*	Prefabricated Gravity Grease Interceptors	DWV Components	1014.3.4

IAPMO Z1033- <u>2015</u> 2013 ^{sl} *	Flexible PVC Hoses and Tubing for Pools, Hot Tubs, Spas, and Jetted Bathtubs	Fixtures, Swimming Pools, Spas, and Hot Tubs	409.6.1
ISEA Z358.1- <u>2014</u> 2009 *	Emergency Eyewash and Shower Equipment	Miscellaneous	416.1, 416.2
MSS SP-67- <u>2016</u> 2014	Butterfly Valves	Valves	606.1
NFPA 13D- <u>2016</u> 2013	Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes	Miscellaneous	612.1, 612.5.3.1
NFPA 30A- <u>2015</u> 2012 *	Motor Fuel Dispensing Facilities and Repair Garages	Miscellaneous	507.14.2
NFPA 31- <u>2016</u> 2014 *	Installation of Oil-Burning Equipment	Fuel Gas, Appliances	505.3, 1201.1, E 401.1, E 412.1, E 413.6, E 413.6.1, E 414.1, E 415.2, E 415.3
NFPA 51- <u>2018</u> 2013 *	Design and Installation of Oxygen-Fueled Gas Systems for Welding, Cutting, and Allied Processes	Fuel Gas	507.9
NFPA 54/Z223.1- <u>2015</u> 2012 *	National Fuel Gas Code	Fuel Gas	<u>507.13, 508.3.2, 1201.1, 1202.3, 1210.1.6, 1210.1.7.2, 1210.2.4.3, 1210.3.4, 1210.4.3, 1210.14, 1211.2, 1211.2.1, 1211.2.2, 1211.2.3, 1211.6, 1213.1.4, Table 1216.2(2), Table 1216.2(3), E 401.1, E 408.1, E 414.1, E 415.1</u>
NFPA 58- <u>2017</u> 2014 *	Liquefied Petroleum Gas Code	Fuel Gas	1208.5.4.2.3, 1208.5.9.4, 1210.5(6), 1212.10, E 401.1, E 401.2, E 406.1, E 411.1, E 414.1, E 415.1
NFPA 70- <u>2017</u> 2014 *	National Electrical Code	Miscellaneous	<u>1211.2.2, 1211.6, 1310.4.1, 1318.1(11), F 701.1</u>
NFPA 88A- <u>2015</u> 2014 *	Parking Structures	Miscellaneous	507.14.1
NFPA 99- <u>2015</u> 2012 *	Health Care Facilities Code	Piping	<u>1301.3, 1301.4, 1301.5, 1301.6, 1302.1, 1302.1.1, 1302.1.2, 1302.2, 1302.3, 1304.3, 1304.3.1, 1306.1, 1306.3, 1307.1, 1308.5, 1308.6, 1309.2, 1309.3.6.3, 1309.3.6.4, 1309.3.6.7, 1309.3.6.8, 1309.3.8.2, 1309.4.5, 1310.8, 1310.8.2, 1310.9, 1310.10, 1312.1, 1312.1.1, 1312.1.2, 1312.1.3, 1312.2, 1312.9.2, 1312.10, 1313.1, 1313.1.1, 1313.1.2, 1314.1, 1314.2.1, 1314.2.2, 1314.3, 1314.4, 1314.5.1, 1314.5.2, 1314.6, 1314.6.1, 1314.6.2, 1314.6.3, 1314.7, 1314.7.1, 1314.7.2, 1315.2, 1315.2.1, 1315.2.2, 1315.5.1, 1316.2, 1316.2.1, 1318.1(9), 1318.1.1, 1318.2, 1318.3, 1319.2, 1319.4, 1319.4.1, 1319.5, 1319.5.1, 1319.5.4, 1319.5.5, 1319.6, 1319.6.7, 1319.6.8, 1319.7.1, 1319.9.2, 1319.13, 1319.14</u>
NFPA 211- <u>2016</u> 14 3*	Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances	Fuel Gas, Appliances	509.5.2, 509.5.3, 509.5.6.1, 509.5.6.3

NFPA 409-201 <u>644</u> *	Aircraft Hangars	Miscellaneous	507.15
NFPA 780-201 <u>744</u> *	Installation of Lightning Protection Systems	Fuel Gas	1211.4
NFPA 1192-2015	<u>Recreational Vehicles</u>	<u>Fuel Gas</u>	
NSF 3-201 <u>240</u> *	Commercial Warewashing Equipment	Appliances	414.1
NSF 14-201 <u>642</u> *	Plastics Piping System Components and Related Materials	Piping, Plastic	301.2.3, 604.1, 611.3
NSF 42-201 <u>543</u> *	Drinking Water Treatment Units – Aesthetic Effects	Appliances	611.1, 611.3
NSF 44-201 <u>543</u> *	Residential Cation Exchange Water Softeners	Appliances	611.1, 611.3, L 410.1
NSF 53-201 <u>543</u> *	Drinking Water Treatment Units – Health Effects	Appliances	611.1, 611.3, K 104.2.1, L 504.2.1
NSF 55-201 <u>643</u> *	Ultraviolet Microbiological Water Treatment Systems	Appliances	611..1, 611.3
NSF 58-201 <u>543</u> *	Reverse Osmosis Drinking Water Treatment Systems	Appliances	611.1, 611.2, 611.3, L 410.3
NSF 61-201 <u>642</u> *	Drinking Water System Components – Health Effects	Water Supply Components	415.1, 417.1, 604.1, 604.9, 606.1, 607.2, <u>607.10</u> , 608.2
NSF 62-201 <u>543</u> *	Drinking Water Distillation Systems	Appliances	611.1, 611.3
NSF 350-201 <u>442</u> *	Onsite Residential and Commercial Water Reuse Treatment Systems	Miscellaneous	1504.7
NSF 359-201 <u>644</u> *	Valves for Crosslinked Polyethylene (PEX) Water Distribution Tubing Systems	Valves	606.1
PDI G-101-201 <u>542</u>	Testing and Rating Procedure for Hydro Mechanical Grease Interceptors with Appendix of Installation and Maintenance	DWV Components	1014.1
UL 430-201 <u>509</u> *	Waste Disposers (with revisions through October 3, 2013)	Appliances	419.1
UL 441-201 <u>640</u> *	Gas Vents (with revisions through May 18, 2010)	Fuel Gas	509.1
<u>UL 467-2013</u>	<u>Grounding and Bonding Equipment</u>	<u>Miscellaneous</u>	<u>1211.2.3</u>
UL 778-201 <u>640</u> *	Motor-Operated Water Pumps (with revisions through May 25, 2012)	Appliances	1101.14
UL 921-201 <u>696</u> *	Commercial Dishwashers (with revisions through July 6, 2012)	Appliances	414.1
UL 1453-201 <u>694</u> *	Electric Booster and Commercial Storage Tank Water Heaters (with revisions through July 15, 2011)	Appliances	Table 501.1(2)
UL 1479-201 <u>503</u> *	Fire Tests of Through-Penetration Firestops (with revisions through October 19, 2012)	Miscellaneous	208.0, 222.0, 1404.3, 1405.3

APPENDIX K

POTABLE RAINWATER CATCHMENT SYSTEMS

K 101.2 System Design. Potable rainwater catchment systems in accordance with this appendix shall be designed by a registered design professional or person deemed competent by the Authority Having Jurisdiction to perform potable rainwater catchment system design work. Systems subject to Title 30 of the Texas Administrative Code shall be designed and installed as required by the Texas Commission on Environmental Quality and the Texas State Board of Plumbing Examiners.

K 104.4.4.3 Exposure to Sunlight. Rainwater tank openings that are subject to degradation when exposed to sunlight shall not be exposed to direct sunlight.

Houston Amendments to the *2015 International Residential Code for One- and Two-Family Dwellings*



Adopted by Ord. No. 2021-1037¹

Passed December 1, 2021²

Effective April 1, 2022³

1. The City Secretary shall insert the number of the adopting ordinance.

2. The City Secretary shall insert the date passage and approval of the adopting ordinance.

3. The City Secretary shall insert the effective date of the adopting ordinance.

CHAPTER 1

SCOPE AND ADMINISTRATION

R101.1 Title. These provisions shall be known as the City of Houston Residential Code, for One- and Two-family Dwellings of [NAME OF JURISDICTION] and shall be cited as such and will be referred to herein after referred to as “this code,” and also known as the Residential Code.

The City of Houston Construction Code collectively includes this volume and certain other codes, pamphlets, specifications and documents that are adopted in or by reference through the adopting ordinance, City of Houston Ordinance No. 2021-1037.⁴

R101.2 Scope. The provisions of the ~~International Residential Code for One- and Two-Family Dwellings~~ this code shall set forth ~~apply the~~ minimum requirements and standards applicable to the construction, ~~alteration~~, movement, enlargement, replacement, repair, ~~equipment~~, use and occupancy, location, removal and demolition, ~~disassembly and reuse of materials associated with~~ of detached one- and two-family dwellings and ~~townhouses~~ not more than three stories above ~~grade plane~~ in height with a separate means of egress system and their ~~accessory structures~~ not more than three stories above ~~grade plane~~ in height. Buildings, systems and other construction not specifically defined or addressed in this code shall comply with all applicable provisions of the Construction Code. One- and two-family dwellings and townhouses shall be classified as Group R-3 occupancies, and accessory structures shall be classified as Group U occupancies.

Exceptions:

1. Live/work units located in ~~townhouses~~ and complying with the requirements of Section 419 of the ~~International Building Code~~ shall be permitted to be constructed in accordance with ~~the International Residential Code for One- and Two-Family Dwellings~~ this code. Fire suppression required by Section 419.5 of the ~~International Building Code~~ where constructed under this code ~~the International Residential Code for One- and Two-family Dwellings~~ shall conform to Section P2904.
2. Owner-occupied lodging houses with five or fewer guestrooms shall be permitted to be constructed in accordance with this code ~~the International Residential Code for One- and Two-family Dwellings~~ where equipped with a fire sprinkler system in accordance with Section P2904.

R102.1 General. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall prevail. Where, in any specific ~~instance case, different sections of provisions of~~ this code, including adopted appendices, specify different materials, ~~different methods of construction or other requirements that differ from those provided in the City Code or other volumes of the Construction Code, including adopted appendices, other than the Fire Code and its adopted appendices and standards~~, the most restrictive shall prevail. Where, in any specific instance, provisions of this code, including adopted appendices, specify different materials, different methods of construction, or other requirements that differ from those provided in the Fire Code, including its adopted appendices and standards, and the building official and the fire marshal are unable to mutually reconcile the requirements by issuing a written interpretation, then either of them may refer the matter to the General Appeals Board created

4. City Secretary shall insert number of adopting ordinance.

under the *Building Code*, which shall conduct a review of the matter and issue a written code interpretation based upon the apparent intent of the codes involved. Notwithstanding any other provision, interpretations that are issued by the General Appeals Board shall not be subject to further appeal.

R102.5 Appendices. Provisions in the appendices shall not apply unless specifically referenced in the adopting ordinance this section. Appendices A, B, C, H, K, L, M, Q, T, U, and V are hereby adopted and made part of this code.

R102.7 Existing structures. The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as is ~~specifically covered in this code, the *International Property Maintenance Code* or the *International Fire Code*,~~ or as is deemed necessary by the *building official* for the general safety and welfare of the occupants and the public.

R102.8 Special piping and storage systems. See Chapter 57 of the *Fire Code* regarding flammable and combustible liquids.

R102.9 Electrical Code. Part VIII-Electrical (Chapters 34-43) of the 2015 *International Residential Code* is not adopted. All electrical work and licensing shall comply with the *Electrical Code*.

R102.10 Mechanical Code. The licensing of air-conditioning contractors shall be as required by the *Mechanical Code* and applicable State laws. This code includes numerous references to the *International Mechanical Code*. For the sake of convenience and cost savings to the public in the preparation of Houston Supplement pages to this code, those references have not been revised unless the text of the provision in which they appear has otherwise been revised by this *jurisdiction*. Any such references shall be regarded as references to the corresponding code as adopted by this *jurisdiction* from time to time. The *jurisdiction* reserves the right to adopt codes based upon promulgations of organizations other than the International Code Council, including, but not limited to, the Uniform Series Codes, to the extent permitted by State law. Any reference to a specific chapter, section, or provision of a code that has not been adopted by this *jurisdiction* shall be construed to mean the corresponding provision of the corresponding code as adopted by this *jurisdiction*.

R102.11 Plumbing Code. The licensing of plumbers and plumbing contractors shall be as required in the *Plumbing Code* and applicable State laws. This code includes numerous references to the *International Plumbing Code*. For the sake of convenience and cost savings to the public in the preparation of Houston Supplement pages to this code, those references have not been revised unless the text of the provision in which they appear has otherwise been revised by this *jurisdiction*. Any such references shall be regarded as references to the corresponding code as adopted by this *jurisdiction* from time to time. This *jurisdiction* reserves the right to adopt codes based upon promulgations of organizations other than the International Code Council, including but not limited to the Uniform Series Codes, to the extent permitted by State law. Any reference to a specific chapter, section, or provision of a code that has not been adopted by this *jurisdiction* shall be construed to mean the corresponding provision of the corresponding code as adopted by this *jurisdiction*.

SECTION R103
DEPARTMENT OF BUILDING SAFETY
BUILDING CODE ENFORCEMENT

R103.1 Creation of enforcement agency. The Building Code Enforcement Division department of building safety is hereby created within the jurisdiction's department known as Houston Public Works, and the official in charge thereof shall be known as the building official.

R104.2 Applications and permits. The building official shall receive applications, review construction documents and issue permits for the erection and alteration of buildings and structures, inspect the premises for which such permits have been issued and enforce compliance with the provisions of this code as identified in the *Building Code*.

R104.8 Liability. ~~The building official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties. Except as otherwise provided by law, the building official shall not personally be liable in damages for any act or omission arising out of any official action taken to implement and enforce the provisions of this code. Additionally, except as otherwise provided by law, the building official shall not personally be liable in damages for any act or omission taken in the course and scope of employment. Where and to the extent consistent with the provisions of Chapter 2, Article X, of the City Code, this jurisdiction shall provide legal representation and indemnification for any suit or claim brought against the building official or any deputies because of acts or omissions performed in the implementation or enforcement of this code.~~

This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating, or controlling any building, structure or system or other construction for any damages to persons or property caused by defects, nor shall the code enforcement agency or the jurisdiction be held as assuming any such liability by reason of the inspections authorized by this code or any permits or certificates issued under this code.

~~R104.8.1 Legal defense.~~ ~~Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representatives of the jurisdiction until the final termination of the proceedings. The building official or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.~~

R104.10 Modifications. Where there are practical difficulties involved in carrying out the provisions of this code, the *building official* shall have the authority to grant modifications for individual cases, provided the *building official* shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, life and fire safety or structural requirements. The details of action granting modifications shall be recorded and entered in the files of Building Code Enforcement ~~the department of building safety~~.

(EDITORIAL NOTE: DELETE SECTION R104.10.1 IN ITS ENTIRETY.)

R104.12 Stop orders. The *building official* may order work stopped hereunder in the same manner provided in Section 115 of the *Building Code*.

R105.2 Work exempt from permit. Exemption from *permit* requirements of this code shall not be deemed to grant exemption from permits required by other codes or ordinances and shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other codes, laws or ordinances of this jurisdiction. *Permits* shall not be required for the following:

Building:

1. One-story detached *accessory structures*, provided that the floor area does not exceed ~~200-120~~ square feet (~~18.58-11.15~~ m²).
2. Fences not over ~~7-8~~ feet (~~2134-2,438~~ mm) high that are not constructed of masonry or concrete, and that are not electrically energized.
3. Retaining walls that are not over 4 feet (1,219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge.
4. Water tanks supported directly upon *grade* if the capacity does not exceed 5,000 gallons (18 927 L) and the ratio of height to diameter or width does not exceed 2 to 1.
5. ~~Sidewalks and driveways.~~ Uncovered wood decks accessory to a one- and two-family dwelling that are not more than 30 inches above *grade*.
6. Minor repair and maintenance of existing structures that include:
 - 6.1. Painting, tarping, wallpapering, tiling, carpeting, cabinets, and counter-tops repair and replacement and similar finish work;
 - 6.2. Repair to gypsum board (sheetrock or drywall) on existing walls that is not part of a fire-rated assembly and that does not exceed an aggregate of 100 square feet (9.29 m²);
 - 6.3. Repair, using the same material, of exterior wood fascia, trim and soffits that do not exceed an aggregate of 128 square feet (11.89 m²); or
 - 6.4. Roof covering that does not exceed an aggregate of 100 square feet (9.29 m²).
7. ~~Prefabricated swimming pools that are less than 24 inches (610 mm) deep.~~
78. Minor single-family residential accessory Sswings and other residential playground equipment less than 12-feet in height.
89. Window awnings supported by an exterior wall ~~which that~~ do not project more than 54 inches (1,372 mm) from the exterior wall and do not require additional support.
940. Decks not exceeding 200 square feet (18.58 m²) in area, that are not more than 30 inches (762 mm) above *grade* at any point, are not attached to a dwelling and do not serve the exit door required by Section R311.4.

Electrical:

1. *Listed* cord-and-plug connected temporary decorative lighting.
2. Reinstallation of attachment plug receptacles but not the outlets therefor.
3. Replacement of branch circuit overcurrent devices of the required capacity in the same location.
4. Electrical wiring, devices, *appliances*, apparatus or *equipment* operating at less than 25 volts and not capable of supplying more than 50 watts of energy.
5. ~~Minor repair work, including the~~ The replacement of lamps or the connection of *approved* portable electrical *equipment* to *approved* permanently installed receptacles.

Gas:

1. Portable heating, cooking or clothes drying *appliances*.
2. Replacement of any minor part that does not alter approval of *equipment* or make such *equipment* unsafe.
3. Portable-fuel-cell *appliances* that are not connected to a fixed piping system and are not interconnected to a power grid.

Mechanical:

1. Portable heating *appliances*.
2. Portable ventilation *appliances*.
3. Portable cooling units.
4. Steam, hot- or chilled-water piping within any heating or cooling *equipment* regulated by this code.
5. Replacement of any minor part that does not alter approval of *equipment* or make such *equipment* unsafe.
6. Portable evaporative coolers.
7. Self-contained refrigeration systems containing 10 pounds (4.54 kg) or less of refrigerant or that are actuated by motors of 1 horsepower (746 W) or less.
8. Portable-fuel-cell *appliances* that are not connected to a fixed piping system and are not interconnected to a power grid.

Plumbing:

1. The stopping of leaks in drains, water, soil, waste or vent pipe; provided, however, that if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a *permit* shall be obtained and inspection made as provided in this code.
2. The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures, and the removal and reinstallation of water closets, provided such

repairs do not involve or require the replacement or rearrangement of valves, pipes, or fixtures.

R105.2.1 Emergency replacements or repairs. Where emergency equipment replacements and or emergency repairs for which a permit is required must be performed, the *permit* application shall be submitted to the building official within not later than the next working business day after initiation of the replacement or repair.

R105.2.2 Repairs. Application or notice to the *building official* is not required for ordinary repairs to structures or any item listed in Section 105.2. Such repairs shall not include the cutting away of any wall, partition or portion thereof, the removal or cutting of any structural beam or load-bearing support, or the removal or change of any required means of egress system, or rearrangement of parts of a structure affecting the egress requirements; nor shall ordinary repairs include *addition* to, *alteration* of, replacement or relocation of any water supply, sewer, drainage, drain leader, gas, soil, waste, vent or similar piping, electric wiring or mechanical or other work affecting public health or general safety.

R105.3 Application for permit. To obtain a *permit*, the applicant shall first file an application therefor in writing on a form furnished by Building Code Enforcement ~~the department of building safety~~ for that purpose. Such application shall:

1. Identify and describe the work to be covered by the *permit* for which application is made.
2. Describe the land on which the proposed work is to be done by legal description, street address or similar description that will readily identify and definitely locate the proposed building or work.
3. Indicate the use and occupancy for which the proposed work is intended.
4. Be accompanied by *construction documents* and other information as required in Section R106.1.
5. State the valuation of total aggregate square footage of any new structure, addition(s), alteration, and the square footage of new paving, and linear feet of new sidewalks and curbs located within the right-of-way associated with the proposed work.
6. Be signed by the applicant or the applicant's authorized agent.
7. Give such other data and information as required by the *building official*.

{EDITORIAL NOTE: DELETE SECTION R105.3.1.1 IN ITS ENTIRETY AND RESERVE.}

R105.3.2 Time limitation of application. An application for which no permit is issued within 180 days following the date of application shall become inactive, and plans and other data submitted for review thereafter shall be returned to the applicant or destroyed by the building official. The building official is authorized to grant one or more extensions of time for additional periods not to exceed 180 days each, for a maximum of two years from the date of the original application, upon written request and justifiable cause demonstrated by the applicant. If an application for permit does not result in a permit within two years after the date of original application, the permit application shall expire. In order to renew action on an application after expiration, the applicant shall submit a new permit application and plans and shall pay a new plan review fee. ~~An application for a permit for~~

~~any proposed work shall be deemed to have been abandoned 180 days after the date of filing unless such application has been pursued in good faith or a *permit* has been issued; except that the *building official* is authorized to grant one or more extensions of time for additional periods not exceeding 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.~~

R105.4 Validity of permit. ~~Permit validity shall be governed by Section 105.4 of the *Building Code*. The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the *jurisdiction*. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the *jurisdiction* shall not be valid. The issuance of a permit based on construction documents and other data shall not prevent the building official from requiring the correction of errors in the construction documents and other data. The building official is authorized to prevent occupancy or use of a structure where in violation of this code or of any other ordinances of this *jurisdiction*.~~

R105.5 Expiration. Every *permit* issued shall become ~~invalid~~ inactive unless the work authorized by such *permit* ~~is has~~ commenced and been inspected by a city inspector within 180 days after its issuance, or if the work authorized by such *permit* is suspended or abandoned for a period of 180 days after the time the work is commenced.

If work has not commenced under a *permit* within two years after the date of issuance or is suspended or abandoned at any time for a period of two years, the *permit* shall expire. In order to recommence work under an expired *permit*, the *permit* holder shall pay the full applicable *permit* fee and submit plans that comply with this code for all uninspected work.

Exception: For the purpose of issuing a certificate of compliance, the *building official* may, upon request, reactivate a *permit* and perform a final inspection of work.

R105.5.1 Extensions. The *building official* is authorized to grant, in writing, one or more extensions of time for issued permits, for periods not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.

R105.6 Suspension or revocation. The *building official* is authorized to suspend or revoke a *permit* issued under the provisions of this code wherever the *permit* is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance, ~~or~~ regulation, ~~or any of the provisions of this code.~~ Prior to taking such action, the *building official* shall provide notice of a right to a hearing on the matter pursuant to Section 117 of the *Building Code*.

(EDITORIAL NOTE: DELETE SECTION R106.1.4 IN ITS ENTIRETY.)

R108.2 Schedule of permit fees. On buildings, structures, electrical, gas, mechanical and plumbing systems or *alterations* requiring a *permit*, a fee for each *permit* shall be paid as required, in accordance with Section 118 of the *Building Code* and the schedule as established by the applicable governing authority *city fee schedule*.

R108.3 Building permit fee calculation valuations. Building *permit* valuation shall include total value of the work for which a *permit* is being issued, such as electrical, gas, mechanical, plumbing *equipment* and other permanent systems, including materials and labor. The structural building permit fee for new one- and two-family residential *dwellings* and townhouses and their detached

accessory structures shall be calculated as specified in Section 118.2.1 and Tables 118(1) and 118(2) of the *Building Code* and the city fee schedule based on the total square footage of the building area as defined by the *Building Code*.

The permit fee for new *additions* to one- and two-family residential *dwellings* and townhouses shall be calculated as required for new residential *buildings*.

The permit fee for *repair, alterations, or remodeling* of residential one and two-family *dwellings* and townhouses shall be 20% of the calculated fee for new construction as specified in Section 118.2.1 and Tables 118(1) and 118(2) of the *Building Code* and the city fee schedule based on the total aggregate square footage of the *building area* being repaired or altered or the total aggregate square footage of the walls and ceilings being repaired or altered.

R108.5 Refunds. The *building official* ~~is authorized to establish a refund policy~~ may authorize a refund of any fee paid hereunder that was erroneously paid or collected due to an error by a city employee. This provision shall not be applicable if the error occurred because of incorrect information provided by the applicant.

The *building official* may authorize a refund of not more than 90 percent of the amount in excess of the minimum *permit* fee paid when no work has been done under a *permit* issued in accordance with this code. If work has been done under the *permit*, no refund shall be authorized. The originally paid administrative fee and the plan review portion of the *permit* fee shall be nonrefundable.

The *building official* shall not authorize a refund of any fee paid except on written application filed by the original permit holder not later than 180 calendar days after the date of fee payment.

R108.6 Work commencing before *permit* issuance. Any person who commences work requiring a *permit* on a building, structure, electrical, gas, mechanical, or plumbing system before obtaining the necessary permits shall be subject to a fee established by the applicable governing authority equal to the amount of the *permit* fee and applicable minimum investigation fees required by the *Building Code* that shall be in addition to the required *permit* fees.

108.7 Plan review fees. Where plans or other data is required to be submitted in accordance with the *Construction Code*, a plan review fee shall be paid at the time of submitting construction documents for review. The plan review fees for any proposed work shall be charged as described in Section 118.1.11 of the *Building Code* and the city fee schedule.

When approved plans are lost or changed so as to require an additional plan review or when a plan review is required and there is no building permit required, a plan review fee shall be charged as described in Section 118.2.8 of the *Building Code* and the city fee schedule.

108.7.1 Deferred submittal plan review fees. A plan review fee shall be paid at the time of submitting construction documents for review of deferred submittal plans. The fee for any deferred submittal review shall be charged at the rate shown in the city fee schedule for a minimum permit fee plus applicable administrative fee. The plan review fees specified in this subsection are separate fees from the permit fees.

SECTION R110

CERTIFICATE OF OCCUPANCY COMPLIANCE

R110.1 Use and occupancy. A-Group R3 *One- and Two-family Dwellings* and *Townhouses* and associated residential accessory buildings or structures shall not be used or occupied, and a

change in the existing use or occupancy classification of a building or structure or portion thereof to a building or structure regulated by this code shall not be made, until the *building official* has issued a certificate of ~~occupancy~~ compliance therefor as provided herein. Issuance of a certificate of ~~occupancy~~ compliance shall not be construed as an approval of a violation of the provisions of this code or of any other ordinances of the *jurisdiction*. Certificates presuming to give authority to violate or cancel the provisions of this code or other ordinances of the *jurisdiction* shall not be valid.

Exceptions:

1. ~~A~~ Certificates of compliance ~~occupancy~~ is not required for work exempt from permits under Section R105.2.
2. ~~Accessory buildings or structures.~~ A certificate of occupancy is not required for a Group U occupancy accessory to a single-family dwelling or townhouse not containing hazardous materials exceeding the maximum allowable quantities identified in Section 307 of the *Building Code*.

R110.2 Change in use. Changes in the character or use of an existing structure shall not be made except as specified in Sections ~~3408 and 3409~~ 407, 506, and 1205, and Chapter 10 of the *International Existing Building Code*.

R110.3 Certificate issued. After the building official inspects the building or structure and does not find violations of the provisions of this code or other laws that are enforced by ~~the department of building safety~~ Building Code Enforcement, the *building official* shall issue a certificate of ~~compliance-occupancy~~ compliance containing the following:

1. The building permit number or project number.
2. The address of the structure.
3. The name and address of the owner and when applicable ~~or~~ the owner's authorized agent.
4. Where applicable a ~~A~~ description of that portion of the structure for which the certificate is issued.
5. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code.
6. The name of the *building official*.
7. The edition of the code under which the permit was issued.
8. If an automatic sprinkler system is provided, and whether the sprinkler system is required.
9. Any special stipulations and conditions of the building permit.
10. The use and occupancy of the building.
11. The type of construction as defined by Chapter 6 of the *Building Code*.

R110.4 Temporary occupancy. The building official is authorized to issue a temporary certificate of ~~compliance-occupancy~~ before the completion of the entire work covered by the permit, provided that such portion or portions shall be occupied safely. The building official shall set a time period during which the temporary certificate of compliance ~~occupancy~~ is valid.

R110.5 Revocation. The *building official* is authorized to ~~shall, in writing~~, suspend or revoke a certificate of compliance ~~occupancy~~ issued under the provisions of this code in writing, wherever

the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code. Prior to taking such action, the *building official* shall provide notice of a right to a hearing on the matter pursuant to Section 117 of the *Building Code*.

R110.6 Certificate of compliance availability. The *certificate of compliance* shall be available on the premises and shall not be removed except by the *building official*. The owner shall maintain the correct information on the *certificate of compliance*. The *code official* and *fire code official* shall require correction of any errors on a *certificate of occupancy* or *certificate of compliance*.

R112.1 General. ~~In order to~~ Except as provided below for mechanical and plumbing issues, the General Appeals Board, in accordance with the provisions of the *Building Code*, shall hear and decide appeals of orders, decisions or determinations made by the *building official* relative to the application and interpretation of this code, ~~there shall be and is hereby created a board of appeals. The *building official* shall be an ex-officio member of said board but shall not have a vote on any matter before the board. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business, and shall render decisions and findings in writing to the appellant with a duplicate copy to the *building official*.~~

R112.2 Mechanical. The Mechanical Code Review Board, in accordance with the provisions of the *Mechanical Code*, shall hear and decide appeals of orders, decisions or determinations made by the *building official* relative to the application and interpretation of Part V-Mechanical **Limitations on authority.** An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equally good or better form of construction is proposed. The board shall not have authority to waive requirements of this code.

R112.3 Plumbing. The Plumbing Code Review Board, in accordance with the provisions of the *Plumbing Code*, shall hear and decide appeals of orders, decisions or determinations made by the *building official* relative to the application and interpretation of Part VI- Fuel Gas and Part VII- Plumbing of this code **Qualifications.** The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the *jurisdiction*.

R113.4.1 Penalty. Where no specific penalty is otherwise provided in this code, the violation of any provision of this code shall constitute a misdemeanor punishable upon conviction by a fine of not less than \$500.00 nor more than \$2,000.00. Each day that any violation continues shall constitute and be punishable as a separate offense. Where any such conduct constitutes a violation of state penal law, then the offense shall be punishable as provided in the applicable state law. In prosecutions under this code, the various provisions hereof that are designated as an "exception" or "exceptions" shall not be treated as exceptions within the meaning of Section 2.02 of the *Texas Penal Code*, and, instead, they shall constitute defenses to prosecution within the meaning of Section 2.03 of the *Texas Penal Code*.

SECTION 115
PRIVATE PLAN REVIEW AND INSPECTION SERVICES

R115.1 Applicability. This section applies to any required *permit* for the construction, repair, or renovation of any one- or two-family residence or townhouse and associated accessory structures.

R115.2 Program established. The *building official* may establish a private plan review and inspection program under which qualified persons who are not city employees may review plans, conduct certain building inspections, and provide related services for structures to which this section applies to assure compliance with all applicable construction codes. The program shall be conducted in accordance with the regulations and forms promulgated by the *building official*, which shall, without limitation, address the following:

1. Qualifications of the firms and individuals authorized to perform plan reviews, conduct inspections, and provide other related *permit* services. The qualifications shall include licensing in accordance with any applicable laws and regulations and certification in accordance with state or federally recognized standards.
2. Requirement of appropriate liability coverages in an amount of not less than \$1,000,000 per occurrence, with indemnity agreements and coverage of the *jurisdiction*, as an additional insured, for the protection of the *jurisdiction* and other persons who may be affected by the performance of any services under the program.
3. Provisions to ensure that the firms and individuals participating in the program will act independently of building owners, contractors, and others so as to avoid conflicts of interest.
4. Provisions for any non-building-code-related review of plans and issuance of *permits* to applicants who utilize plan review, inspection, and other related services under the program.
5. Provisions regarding the keeping of records and filing of reports with the *building official*.
6. Administrative provisions for the acceptance, suspension, and revocation of the right of a firm or individual to participate in the program, which shall include elements of due process, including a right of appeal to a hearing officer designated by the director of Houston Public Works, whose decision, notwithstanding any other provision of this code, shall be final and not appealable to the General Appeals Board or city council.
7. Provisions to ensure that no firm or individual may be certified to participate in the program unless qualified to conduct plan reviews and inspections under the codes currently enforced by the *jurisdiction* and/or a nationally recognized uniform or international code.
8. Provisions relating to fees charged by any firm or individual for services rendered under the program, including any fees required by law to be paid directly to the *jurisdiction* and remitted by the *building official* to a firm or individual.
9. Provisions prohibiting any private developer, builder or contractor from employing any firm or individual, including subcontractors, to perform more than 25% of that developer's, builder's or contractor's services under the program in any one calendar year unless a greater amount is approved by the *building official*.

10. Provisions requiring any private developer, builder or contractor utilizing any services under the program and the *building official* to file reports as set forth below:
- 10.1. Each private developer, builder or contractor utilizing any services under the program shall file a report with the *building official*, supported by affidavit, containing the following information:
- 10.1.1. The total number of *permits* received during the preceding calendar year for the construction of any residential *structure* in connection with which services under the program were rendered;
- 10.1.2. The name of each firm or individual utilized under the program on each residential structure during the reporting period; and
- 10.1.3. A statement certifying that the developer, builder or contractor has fully complied with all rules and regulations under the program during the reporting period, including but not limited to, all rules governing the maximum number of plan reviews and inspections permitted to be performed by any firm or individual, including subcontractors, rendering any services under the program.
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- The report shall be filed with the *building official* not later than the last day of January and July in each calendar year and shall cover the preceding six month period ending on the last day of December and June, respectively, in each year.
- 10.2. The *building official* shall file a report with the mayor and city council containing the following information:
- 10.2.1. A listing of the names of all companies or contractors that utilized individuals or firms for services under the program and the name of each firm or individual so utilized;
- 10.2.2. Names of all firms and individuals approved to perform services under the program;
- 10.2.3. Total number of plan reviews and inspections performed by firms and individuals for each private developer, builder or contractor operating under the program;
- 10.2.4. Number of plan rechecks and oversight inspections conducted by the *jurisdiction* for each firm or individual utilized under the program and the percentage of that firm or individual's work, including that performed by subcontractors, so inspected;
- 10.2.5. The number of code violations found through plan rechecks and oversight inspections, including the name of the firm or individual, including subcontractors, who performed such services;
- 10.2.6. A list of any firms or individuals removed from the program by the *building official*; and
- 10.2.7. An assessment of program effectiveness as demonstrated by available data, including comments and complaints received by the *jurisdiction* regarding the program pertaining to work performed by a participating developer, builder or contractor, or any firm or

individual, including subcontractors, providing private plan review or inspection services under the program.

The *building official's* report shall be filed with the mayor and city council not later than the last day of August and February in each calendar year and shall cover the preceding 6 month period ending on the last day of July and January, respectively, in each year and may include such additional information relating to the program as he may deem appropriate.

11. Provisions prohibiting any private plan reviewer or inspector from being related to *building owners*, contractors, and other similarly situated individuals or entities within the third degree of consanguinity or within the second degree of affinity.

R115.3 Oversight inspections. The provisions of this section do not affect the *jurisdiction* of the *building official* over any work or preclude oversight inspections by the *building official* of structures that are subject to the provision of services under the program. For purposes of quality assurance, the *building official* may recheck plans, perform inspections or reinspections, issue stop work orders, and take any and all actions that are authorized to be taken under this code, the *Electrical Code*, the *Plumbing Code*, or the *Mechanical Code*, without providing prior notice to any program firm or individual, contractor, or owner, unless otherwise required by law.

R115.4 Fees. To cover administrative costs of the program established under Section R115, including registration of firms and individuals, management of the program, and oversight inspections, the *building official* shall assess fees equal to 25 percent of the amount otherwise payable under this code for any *permit*, but not less than the minimum fee stated in the city fee schedule. In addition to the reduced *permit* fees charged in connection with the program, an additional fee for each payment voucher issued, as stated for this provision in the city fee schedule, shall be assessed to cover the *jurisdiction's* costs in connection with any fee required to be paid to and remitted by the *jurisdiction*. If any contractor or owner requests an inspection by the *building official* of any structure that is subject to private inspection under this section, then the *building official* may perform the inspection for the fee stated for this provision in the city fee schedule. The administrative fee that is payable under Section 118.1 of the *Building Code* shall be collected in addition to the fees otherwise provided under this section.

Notwithstanding any maximum fee established pursuant to the *Construction Code*, the fees in this section or in any volume of the *Construction Code*, as adjusted according to this provision, shall be automatically increased on the first day of each subsequent calendar year as provided in Section 1-13 of the *City Code*.

CHAPTER 2

DEFINITIONS

R201.3 Specific construction and Terms defined in other codes. Where specific rules of construction or terms are not addressed or defined in this code and are addressed or defined in the *City Code* or another volume of the *Construction Code*, such terms or specific constructions herein shall have the meanings ascribed to them in those other volumes, as applicable to the construction and proposed scope of work hereunder ~~in other code publications of the International Code Council.~~

SECTION 202

DEFINITIONS

ALLEY. A public or private right-of-way that is not used primarily for through traffic and that provides vehicular access to rear entrances to buildings or properties that front on an adjacent street.

[RB] ALTERATION. Any construction, retrofit or renovation to an existing structure other than repair or addition that requires a permit. Also, a change to an existing in a building, or changes to existing electrical, gas, mechanical or plumbing system that involves an extension, addition or change to the arrangement, type or purpose of the original installation that requires a permit.

ATTIC, HABITABLE. A finished ~~or unfinished~~ area, not considered a *story*, complying with all of the following requirements:

1. The occupiable floor area is not less than 70 square feet (17m²), in accordance with Section R304.
2. The occupiable floor area has a ceiling height in accordance with Section R305.
3. The occupiable space is enclosed by the roof assembly above, knee walls ~~(if applicable)~~ on the sides and the floor-ceiling assembly below.
4. The occupiable space is within a one- or two- family dwelling containing not more than two stories above grade plane in height.

AUTHORITY HAVING JURISDICTION. The director of Houston Public Works or the director's duly authorized representative.

BUILDING CODE. The *City of Houston Building Code*, as adopted and amended by this jurisdiction.

BUILDING OFFICIAL ~~The officer or other designated authority charged with the administration and enforcement of this code~~ director of Houston Public Works or the duly authorized representative designated by the director to act as the chief construction code enforcement official of the jurisdiction; also known as *chief building official*. The term also includes the Houston Airport Systems building official who may be designated by the building official to perform *Construction Code* permitting and enforcement activities on Houston Airport Systems premises.

BUILDING THERMAL ENVELOPE. The boundary formed by basement walls, exterior walls, floor, roof and any other building element that encloses conditioned space. This boundary also includes the boundary between conditioned space and any exempt or unconditioned space.

CERTIFICATE OF COMPLIANCE. A certificate stating that materials and products meet specified standards or that the scope of work under a specific permit was done in compliance with approved construction documents. Any reference in the Construction Code to a “CC”, certificate of completion, or a certificate of inspection issued by this jurisdiction, is a reference to a certificate of compliance as defined herein.

CITY CODE. The Code of Ordinances, City of Houston, Texas.

CITY FEE SCHEDULE. The schedule of fees charged by the city for various permits, licenses, authorizations and services, which is maintained on the city's website.

CODE OFFICIAL. The Building Code Enforcement employees, including but not limited to, the building official, plan analysts, field inspectors, and other technical staff charged with the administration and enforcement of this code as specifically delegated by the authority having jurisdiction. The code official is authorized to approve designs, construction, equipment, materials, installations, processes, procedures, practices, and other duties necessary to administer, verify and document compliance with the Construction Code, the Fire Code, ordinances, and other laws and policies as specifically delegated by the chief building official, fire chief, and the authority having jurisdiction.

CONSTRUCTION CODE. Has the meaning ascribed in Section 1-2 of the City Code.

CONTROL JOINT. A one-piece joint made of metal, zinc, or plastic installed in the surface membrane only of plaster or stucco finish in order to allow for stress relief and to reduce minor cracking of the surface. A control joint may not serve as an expansion joint.

DANGEROUS. Any building meeting the definition of a dangerous building as defined in Chapter 10, Article IX, of the City Code or any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The building or structure has collapsed, has partially collapsed, has moved off its foundation, or lacks the necessary support of the ground.
2. There exists a significant risk of collapse, detachment or dislodgement of any portion, member, appurtenance or ornamentation of the building or structure under service loads.

DUPLEX. An individual free-standing structure containing not more than two dwelling units, single-family dwellings, or households, each containing a separate means of egress.

ELECTRICAL CODE. The City of Houston Electrical Code, as adopted and amended by this jurisdiction.

ENERGY CONSERVATION CODE. The City of Houston Residential Energy Conservation Code, as adopted and amended by this jurisdiction.

EXISTING BUILDING CODE. The City of Houston Existing Building Code as adopted and amended by this jurisdiction.

EXPANSION JOINT. A two-piece slip joint made of metal, zinc, or plastic installed in a stucco or plaster finish system in which the framing, sheathing, and lath are cut to create a true plane to accommodate expansion and contraction of the system as well as to allow for building movement. An expansion joint may also serve as a *control joint*.

FIRE CODE. The *City of Houston Fire Code*, as adopted and amended by this *jurisdiction*.

FIRE CODE OFFICIAL. The fire marshal or a duly authorized representative charged with the administration and enforcement of the *Fire Code*.

GRAY WATER. Untreated waste water that has not come into contact with toilet waste. *Gray water* includes ~~Waste~~ waste water discharged from lavatories, bathtubs, showers, clothes washers and laundry trays.

INTERNATIONAL BUILDING CODE. Any reference herein to the *International Building Code* shall be construed as referring to the *City of Houston Building Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL ENERGY CONSERVATION CODE. Any reference herein to the *International Energy Conservation Code* shall be construed as referring to the *City of Houston Residential Energy Conservation Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL EXISTING BUILDING CODE. Any reference herein to the *International Existing Building Code* shall be construed as referring to the *City of Houston Existing Building Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL FIRE CODE. Any reference herein to the *International Fire Code* shall be construed as referring to the *City of Houston Fire Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL FUEL GAS CODE. Any reference herein to the *International Fuel Gas Code* shall be construed as referring to the *City of Houston Plumbing Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL MECHANICAL CODE. Any reference herein to the *International Mechanical Code* shall be construed as referring to the *City of Houston Mechanical Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL PLUMBING CODE. Any reference herein to the *International Plumbing Code* shall be construed as referring to the *City of Houston Plumbing Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL PROPERTY MAINTENANCE CODE. Any reference herein to the *International Property Maintenance Code* shall be construed as referring to Chapter 10, Article IX, of the *City Code*, which is also known as the *Houston Building Standards Code*.

INTERNATIONAL RESIDENTIAL CODE. Any reference herein to the *International Residential Code* shall be construed as referring to the *City of Houston Residential Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL SWIMMING POOL AND SPA CODE. Any reference herein to the *International Swimming Pool and Spa Code* shall be construed as referring to the *City of Houston Swimming Pool and Spa Code*, as adopted and amended by this *jurisdiction*.

MEANS OF EGRESS SYSTEM. A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a *public way*. A means of egress system consists of three separate and distinct parts: the *exit access*, the *exit* and the *exit discharge*.

MECHANICAL CODE. The *City of Houston Mechanical Code*, as adopted and amended by this *jurisdiction*.

MULTI-FAMILY RESIDENTIAL STRUCTURE. A structure, including a townhouse structure, that is constructed with three or more attached single-family residences, dwelling units, apartments or condominiums.

ONE- AND TWO-FAMILY DWELLING. An individual free-standing structure containing not more than two *dwelling units*, also referred to as a *dwelling*, *duplex* or *single-family dwelling* depending on the number of *dwelling units* within.

PATIO COVER. A structure with open or glazed walls that is used for recreational, outdoor living purposes associated with a dwelling unit.

PLUMBING CODE. The *City of Houston Plumbing Code*, as adopted and amended by this *jurisdiction*.

PUBLIC WAY. Any street, alley or other parcel of land open to the outside air leading to a public street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and ~~that~~ which has a clear width and height of not less than ~~10-20~~ 30-48 feet (~~3048-6,096~~ mm).

[RB] REPAIR. The reconstruction or renewal of any part of an existing building for the purpose of its maintenance or to correct damage using like for like materials.

RESIDENTIAL CODE. The *City of Houston Residential Code*, as adopted and amended by this *jurisdiction*.

RIGHT-OF-WAY. The entire area between the property boundary lines of every way (including but not limited to roads, streets, alleys, highways, boulevards, bridges, tunnels, or similar thoroughfares), whether acquired by purchase, grant, or dedication by the state or federal government, or acceptance by the *authority having jurisdiction* for public use.

SIGN CODE. The *Houston Sign Code*, which is Chapter 46 of the *Building Code* but is published as a separate document.

SINGLE-FAMILY DWELLING. An individual freestanding residential structure intended to serve a single family or household as a *dwelling* and/or other uses authorized by the *Building Code* and *Residential Code*.

SUBSTANTIAL DAMAGE. A condition where one or both of the following apply:

1. In any story, the vertical elements of the lateral force-resisting system have suffered damage such that the lateral load-carrying capacity of the structure in any

horizontal direction has been reduced by more than 33 percent from its pre-damage condition.

2. The capacity of any vertical gravity load-carrying component, or any group of such components, that supports more than 30 percent of the total area of the structure's floor(s) and roof(s) has been reduced more than 20 percent from its pre-damage condition and the remaining capacity of such affected elements, with respect to all dead and live loads, is less than 75 percent of that required by this code for new buildings of similar structure, purpose and location.

SWIMMING POOL AND SPA CODE. The *City of Houston Swimming Pool and Spa Code*, as adopted and amended by this *jurisdiction*.

TOWNHOUSE. A multi-family residential structure constructed in a group of three or more attached single-family *dwelling units* constructed in a group of three or more attached units in which each unit extends from foundation to roof and with a *yard* or public way on not less than two sides, which may or may not include lot lines or property lines separating each *dwelling unit*.

UNSAFE. Buildings, structures or equipment that are unsanitary, or that are deficient due to inadequate means of egress facilities, inadequate light and ventilation, or that constitute a fire hazard, or in which the structure or individual structural members meet the definition of *dangerous*, or that are otherwise hazardous to human life or the public welfare, or that involve illegal or improper occupancy or inadequate maintenance shall be deemed unsafe. A vacant structure that is not secured against entry shall be deemed unsafe.

CHAPTER 3

BUILDING PLANNING

R301.2.1.1 Wind limitations and wind design required. The wind provisions of this code shall not apply to the design of buildings where ~~wind design is required in accordance with Figure R301.2(4)B~~, the Ultimate Design Windspeed, as calculated in accordance with Table R301.2(1), meets or exceeds 140 mph (62.59 m/s)

Exceptions:

1. For concrete construction, the wind provisions of this code shall apply in accordance with the limitations of Sections R404 and R608.
2. For structural insulated panels, the wind provisions of this code shall apply in accordance with the limitations of Section R610.
3. For cold-formed steel light-frame construction, the wind provisions of this code shall apply in accordance with the limitations of Sections R505, R603, and R804.

In regions where ~~wind design is required in accordance with Figure R301.2(4)B~~, the Ultimate Design Windspeed as determined by Table R301.2(1) meets or exceeds 140 mph (62.59 m/s), the design of buildings for wind loads shall be in accordance with one or more of the following methods:

1. *AF&PA Wood Frame Construction Manual (WFCM).*
2. *ICC Standard for Residential Construction in High-Wind Regions (ICC 600).*
3. *ASCE Minimum Design Loads for Buildings and Other Structures (ASCE 7).*
4. *AISI Standard for Cold-Formed Steel Framing—Prescriptive Method for One- and Two-Family Dwellings (AISI S230).*
5. ~~*International Building Code.*~~
6. *Appendix L—Conventional Light-Frame Wood Construction for High-wind Areas.*

The elements of design not addressed by the methods in Items 1 through ~~5-6~~ shall be in accordance with the provisions of this code.

Where ASCE 7 or the ~~International Building Code~~ is used for the design of the building, the wind speed map and exposure category requirements as specified in ASCE 7 and the ~~International Building Code~~ shall be used.

**TABLE R301.2(1)
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA**

GROUND SNOW LOAD	WIND DESIGN				SEISMIC DESIGN CATEGORY ^f	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP ^g	ICE BARRIER UNDERLAYMENT REQUIRED ^h	FLOOD HAZARDS ^g	AIR FREEZING INDEX ⁱ	MEAN ANNUAL TEMP ^j
	Speed ^d (mph)	Topographic effects ^k	Special wind region ^l	Wind-borne debris zone ^m		Weathering ^a	Frost line depth ^b	Termite ^c					
0	See Footnote n	NO	NO	Zone 1 or 2 ⁿ	A	Negligible	6 inches	Very heavy	28	NO	Reference Ch. 19 of City Code	<1500	68.2

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

{EDITORIAL NOTE: FOOTNOTES NOT SHOWN REMAIN AS SET FORTH IN 2015 IRC.}

n. Ultimate Design Windspeed shall be determined by entering the physical address of the property where the building will be constructed into the ASCE 7 Windspeed Website: <http://windspeed.atcouncil.org/>. Buildings shall be considered Risk Category II. A copy of the windspeed printout from the website shall be attached to the plans for verification.

R302.1 Exterior walls. Construction, projections, openings and penetrations of *exterior walls of dwellings* and accessory buildings shall comply with Table R302.1(1); or *dwellings* equipped throughout with an *automatic sprinkler system* installed in accordance with Section P2904 shall comply with Table R302.1(2). Projections shall not extend within 2 feet of a lot line or to an imaginary line between two buildings on the same lot in accordance with the definition of *Fire Separation Distance* in this code.

Exceptions:

1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the *fire separation distance*.
2. Walls of *dwellings* and *accessory structures* located on the same *lot*.
3. Detached tool sheds and storage sheds, playhouses and similar *structures* exempted from permits are not required to provide wall protection based on location on the *lot*. Projections beyond the *exterior wall* shall not extend over the *lot line*.
4. Detached garages accessory to a *dwelling* located within 2 feet (610 mm) of a *lot line* are permitted to have roof eave projections not exceeding 4 inches (102 mm).
5. Foundation vents installed in compliance with this code are permitted.

**TABLE R302.1(1)
EXTERIOR WALLS**

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANT RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	< 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Projections	Not Allowed	N/A	< 2 feet
	Fire-resistance rated	1 hour on the face and underside ^{a, b}	≥ 2 feet to < 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet

Openings	Not Allowed	N/A	< 3 feet
	25% maximum of wall area ^g	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable

- Roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave if fire blocking is provided from the wall top plate to the underside of the roof sheathing.
- Roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided that gable vent openings are not installed.
- Opening requirements do not apply to noncombustible carports open on two sides.

TABLE R302.1(2)
EXTERIOR WALLS—DWELLINGS WITH FIRE SPRINKLERS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	0 feet
	Not fire-resistance rated	0 hours	3 feet ^a
Projections	Not allowed	N/A	< 2 feet
	Fire-resistance rated	1 hour on the <u>face and underside</u> ^{b, c}	2 feet ^a
	Not fire-resistance rated	0 hours	3 feet
Openings in walls	Not Allowed ^d	N/A	< 3 feet
	Unlimited	0 hours	3 feet ^a
Penetrations	All	Comply with Section R302.4	< 3 feet
		None Required	3 feet ^a

For SI: 1 Foot = 304.8 mm.

N/A = Not Applicable

- For residential subdivisions where all *dwelling*s are equipped throughout with an automatic sprinkler system installed in accordance with Section P2904, the *fire separation distance* for nonrated exterior walls and rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining *lot* provides an open setback *yard* that is 6 feet or more in width on the opposite side of the property line.
- The roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave if fire blocking is provided from the wall top plate to the underside of the roof sheathing.
- The roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided that gable vent openings are not installed.
- Opening requirements do not apply to noncombustible carports that are open on two sides.

**TABLE R302.6
DWELLING GARAGE SEPARATION^a**

SEPARATION	MATERIAL
From the residence and attics	Not less than 1/2-inch gypsum board or equivalent applied to the garage side
From habitable rooms above the garage	Not less than 5/8-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- a. Disappearing or pull-down attic stairs may be installed in the garage ceiling provided the garage-side exposed panel is not less than 3/8-inch thick fire retardant-treated plywood, untreated plywood protected with 1/2-inch thick gypsum board, or untreated plywood coated with 60-minute rated intumescent paint. In all cases, the opening protection material must be applied to the garage side of the plywood.

R303.4 Mechanical ventilation. Where the air infiltration rate of a *dwelling unit* is 5-3 air changes per hour or less when tested with a blower door at a pressure of 0.2 inch w.c. (50 Pa) in accordance with the *Energy Conservation Code* Section N1102.4.1.2, the *dwelling unit* shall be provided with whole-house mechanical ventilation in accordance with Section M1507.3 or ASHRAE 62.2.

R311.1.1 Yards and courts. Yards and courts shall not be less than 3 feet (914 mm) in width, and shall be open to a continuous and unobstructed path of egress travel to a public way.

Exception: Projections shall not reduce the clear width to less than 32 inches (813 mm) up to 80 inches (2,032 mm) above the floor or ground.

~~R313.2 One- and two-family dwellings automatic fire systems.~~ ~~An automatic residential fire sprinkler system shall be installed in one- and two-family dwellings.~~

~~Exception:~~ ~~An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential sprinkler system.~~

~~R313.2.1 Design and installation.~~ ~~Automatic residential fire sprinkler systems shall be designed and installed in accordance with Section P2904 or NFPA 13D.~~

R319.1 Address identification. A numerical address identification posted with respect to any building constructed pursuant to this code shall be provided in accordance with Chapter 10, Article V, of the *City Code*. Where a conflict exists between the *City Code* and this section, the provisions of the *City Code* shall prevail. Buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall be comprised of Arabic numbers or alphabetical letters and contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character number or letter shall be not less than 4 inches (102 mm) in height with a stroke width of not less than 0.5 inch (12.7 mm). Where required by the fire code official, address identification shall be provided

in additional *approved* locations to facilitate emergency response. Where access is by means of a private road and the *building* address cannot be viewed from the *public right-of-way*, a monument, pole or other signs or means *shall* be used to identify the *structure*. Address identification *shall* be maintained in good and readable condition from the public right-of-way.

R321.3 Accessibility. ~~Elevators or platform lifts that are part of an accessible route required by Chapter 11 of the *International Building Code*, shall comply with ICC A117.1.~~

R322.1 General. Buildings and structures constructed in whole or in part in flood hazard areas, including A or V Zones and Coastal A Zones, as established in Table R301.2(1), and substantial improvement and restoration of substantial damage of buildings and structures in flood hazard areas, shall be designed and constructed in accordance with the provisions contained in ~~this section~~ Chapter 19 of the *City Code*.

Where a conflict exists between the *City Code* and this section, the provisions of the *City Code* shall prevail, and where a variance has been issued by the Floodplain Management Office, the provisions of the variance shall prevail over both the applicable terms of the *City Code* and this section. Buildings and structures that are located in more than one flood hazard area shall comply with the provisions associated with the most restrictive flood hazard area. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.

R326.1 General. The design and construction of pools and spas shall comply with the ~~*International Swimming Pool and Spa Code*, Chapter 43 of the *City Code*, and Chapter 757 of the *Texas Health & Safety Code*.~~

CHAPTER 4

FOUNDATIONS

R401.5 Foundation elevation. All new buildings constructed within this *jurisdiction* shall have the top of the finished floor of the first story of the building or structure elevated not less than 12 inches above the nearest sanitary sewer manhole rim of the sewer connected to and serving the building, or, where no sewer is available, the top of the finished floor of the first story of the building or structure shall be elevated not less than 4 inches above the crown of the street.

Exception: Buildings located in annexed subdivisions where the following conditions exist:

1. The subdivision was platted and recorded prior to annexation;
2. The sanitary sewer system for the subdivision was installed prior to annexation; and
3. The drainage piping from a building meets the requirements of Section 710 of the *Plumbing Code*.

NOTE: When a greater elevation is required by Chapter 19 of the *City Code* than under this section, then Chapter 19 of the *City Code* shall govern.

R401.5.1 Plans and applications. All construction plans and applications submitted for construction, sewer connections or septic systems shall reflect the elevations of the finished floor of the building and the elevation of the nearest manhole rim of a sanitary sewer connected to the building or crown of the street, whichever is applicable.

R401.5.2 Damage risk. All *permits* for connection shall be issued on the condition that the owner take all the risk of damage that may result from water backing up into the premises from the sewer.

R401.5.3 Existing structures. When an existing structure is required to connect with a public or private sewer, the finished floor shall be a minimum of 12 inches above the nearest sanitary sewer manhole rim of a sewer connected to the building.

Exception: Where the public or private sewer is not of sufficient depth, or where structures required to be connected to the sewer cannot meet the minimum requirements of this section and other ordinances, the *building official* may authorize the issuance of a *permit* for an alternate method of construction or installation when this will not be detrimental to the health, welfare, and safety of the public.

R404.1.3 Concrete foundation walls. Concrete foundation walls that support light-frame walls shall be designed and constructed in accordance with the provisions of this section, ACI 318, ACI 332 or PCA 100. Concrete foundation walls that support above-grade concrete walls that are within the applicability limits of Section R608.2 shall be designed and constructed in accordance with the provisions of this section, ACI 318, ACI 332 or PCA 100. Concrete foundation walls that support above-grade concrete walls that are not within the applicability limits of Section R608.2 shall be designed and constructed in accordance with the provisions of ACI 318, ACI 332 or PCA 100. ~~When ACI 318, ACI 332, PCA 100 or the provisions of this section are used to design concrete foundation walls,~~

~~project drawings, typical details and specifications are not required to bear the seal of the architect or engineer responsible for design, unless otherwise required by the state law of the jurisdiction having authority.~~

CHAPTER 6

WALL CONSTRUCTION

R608.1 General. Exterior concrete walls shall be designed and constructed in accordance with the provisions of this section or in accordance with the provisions of PCA 100 or ACI 318. ~~Where PCA 100, ACI 318 or the provisions of this section are used to design concrete walls, project drawings, typical details and specifications are not required to bear the seal of the architect or engineer responsible for design, unless otherwise required by the state law of the jurisdiction having authority.~~

R610.1 General. Structural insulated panel (SIP) walls shall be designed in accordance with the provisions of this section. ~~Where the provisions of this section are used to design structural insulated panel walls, project drawings, typical details and specifications are not required to bear the seal of the architect or engineer responsible for design, unless otherwise required by the state law of the jurisdiction having authority.~~

CHAPTER 7

WALL COVERING

R703.7 Exterior plaster. Installation of these materials shall be in compliance with ASTM C 926, ASTM C 1063 and the provisions of this code.

Exception: Lath may be continuous behind *control joints*.

CHAPTER 9

ROOF ASSEMBLIES

R905.7 Wood shingles and wooden shakes. ~~The installation of wood shingles shall comply with the provisions of this section.~~ Wood shingles and wooden shakes shall not be used in new construction. Wood shingles or wooden shakes in existing construction shall not be replaced with other wood shingles or wooden shakes unless the replacement wood shingles or wooden shakes are fire-retardant-treated in accordance with Section R902.2 and installed in accordance with this section.

CHAPTER 11 [RE]

ENERGY EFFICIENCY

N1101.1 Scope. ~~This chapter~~ The *Energy Conservation Code* regulates the energy efficiency for the design and construction of buildings regulated by this code.

{EDITORIAL NOTE: DELETE THE REMAINDER OF THIS CHAPTER IN ITS ENTIRETY.}

CHAPTER 12

MECHANICAL ADMINISTRATION

M1201.2 Application. In addition to the general administration requirements of Chapter 1, the administrative provisions of ~~this chapter~~ the Mechanical Code shall also apply to the mechanical requirements of Chapters ~~13 through 24~~ 12 through 23, as well as to the mechanical provisions of Chapter 24.

CHAPTER 13

GENERAL MECHANICAL SYSTEM REQUIREMENTS

M1305.1.3 Appliances in attics. Attics containing *appliances*, shall be provided with pull down stairs large enough to allow removal of the largest appliance and not less than 22 inches in width at its narrowest point with a load capacity of not less than 350 pounds an opening and a clear and unobstructed passageway large enough to allow removal of the largest *appliance*, but not less than 30 inches (762 mm) high and ~~22~~ 30 inches (559-762 mm) wide and not more than 20 feet (6,096 mm) long measured along the centerline of the passageway from the opening to the *appliance*. The passageway shall have continuous solid flooring in accordance with Chapter 5 not less than 24 inches (610 mm) wide. A level service space not less than 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be present along all sides of the *appliance* where access is required. The clear access opening dimensions shall be not less than 20 inches by 30 inches (508 mm by 762 mm), and large enough to allow removal of the largest *appliance*.

Exceptions:

1. The passageway and level service space are not required where the *appliance* can be serviced and removed through the required opening.
2. Where the passageway is unobstructed and not less than 6 feet (1,829 mm) high and 22 inches (559 mm) wide for its entire length, the passageway shall be not more than 50 feet (15,250 mm) long.
3. The opening is through a vertical door on the same level as the equipment with a minimum clear access opening of 30 inches (762 mm) high and 22 inches (559 mm) wide and large enough to allow removal of the largest appliance.

M1305.1.4.3 Electrical requirements. A luminaire controlled by a switch located at the required passageway opening and a receptacle outlet shall be installed at or near the *appliance* location in accordance with the *Electrical Code* Chapter 39. Exposed lamps shall be protected from damage by location or lamp guards.

M1307.4.2 Mechanical ventilation. Indoor locations intended for hydrogen-generating or refueling operations shall be ventilated in accordance with ~~Section 502.16 of the *International Mechanical Code*~~ 406.9 of the *Building Code*. In these locations, *equipment* and *appliances* having an *ignition source* shall be located so that the source of ignition is below the mechanical *ventilation* outlet(s).

M1308.2 Protection against physical damage. Where piping will be concealed within light-frame construction assemblies, the piping shall be protected against penetration by fasteners in accordance with Sections M1308.2.1 through M1308.2.3.

Exception: Cast iron piping, black steel pipe, and galvanized steel piping shall not be required to be protected.

CHAPTER 14

HEATING AND COOLING EQUIPMENT AND APPLIANCES

M1401.2 Access. Heating and cooling *equipment* and appliances shall be located with respect to building construction and other *equipment* and appliances to permit maintenance, servicing and replacement. Clearances shall be maintained to permit cleaning of heating and cooling surfaces; replacement of filters, blowers, motors, controls, and vent connections; lubrication of moving parts; and adjustments. A level service space at least 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be present along all sides of the *appliance* where access is required.

Exception: Access shall not be required for ducts, piping, or other components approved for concealment.

M1411.3 Condensate disposal. Condensate from all cooling coils ~~or and~~ evaporators shall be conveyed from the drain pan outlet to an approved *plumbing fixture* or ~~place of disposal area~~. Such piping shall maintain a minimum horizontal slope in direction of discharge of not less than 1/8 unit vertical in 12 units horizontal (1-percent slope). Condensate shall not discharge into a street, alley or other areas where it would cause a nuisance. Drain pans and coils shall be arranged to allow thorough drainage and access for cleaning. Primary drain piping inside buildings shall be insulated for the first 15 feet horizontally from the drain pan.

CHAPTER 15

EXHAUST SYSTEMS

M1502.6 Make up air. When a closet is designed for the installation of a clothes dryer, a minimum opening of 100 square inches (1.0645 m²) for makeup air shall be provided in the door or by other approved means.

M1503.2 Duct material. Ducts serving range hoods shall be constructed of galvanized steel, stainless steel or copper.

Exception: Ducts for domestic kitchen cooking *appliances* equipped with down-draft exhaust systems shall be permitted to be constructed of schedule 40 PVC pipe and fittings provided that the installation complies with all of the following:

1. The duct is installed under a concrete slab poured on grade.
2. The underfloor trench in which the duct is installed is completely backfilled with sand or gravel.
3. The PVC duct extends not more than 6 inches (152.4 mm) ~~1 inch (25 mm)~~ above the indoor concrete floor surface.
4. The PVC duct extends not more than 12 inches (304.8 mm) ~~1 inch (25 mm)~~ above grade *outside of the building*.
5. The PVC ducts are solvent cemented.

CHAPTER 16

DUCT SYSTEMS

M1601.4.10 Flood hazard areas. In flood hazard areas as established by Table R301.2(1), *duct systems* shall be located or installed in accordance with Chapter 19 of the City Code ~~Section R322.1.6.~~

M1602.2 Return air openings. Return air openings for heating, ventilation and air conditioning systems shall comply with all of the following:

1. Openings shall not be located less than 10 feet (3,048 mm) measured in any direction from an open combustion chamber or draft hood of another appliance located in the same room or space.
2. The amount of return air taken from any room with a door installed that confines the room or space shall be not greater than the flow rate of supply air delivered to such room or space.
3. Return and transfer openings shall be sized in accordance with the appliance or equipment manufacturers' installation instructions, Manual D or the design of the registered design professional.
4. Return air shall not be taken from a closet, bathroom, toilet room, kitchen, garage, mechanical room, boiler room, furnace room or unconditioned attic.

Exceptions:

1. Taking return air from a kitchen is not prohibited where such return air openings serve the kitchen only, and are located not less than 10 feet (3,048 mm) from the cooking appliances.
2. Dedicated forced-air systems serving only the garage shall not be prohibited from obtaining return air from the garage.
3. Taking return air from an unconditioned crawl space shall not be accomplished through a direct connection to the return side of a forced-air furnace. Transfer openings in the crawl space enclosure shall not be prohibited.
4. Return air from one dwelling unit shall not be discharged into another dwelling unit.

SECTION M1603

CENTRAL VACUUM SYSTEMS

M1603.1 Central vacuum systems. Ducts used in central vacuum-cleaning systems within a dwelling unit shall be permitted to be of PVC pipe. Penetrations of fire walls, as well as rated floor-ceiling and rated roof-ceiling assemblies shall comply with this code. Copper or ferrous pipes or conduits shall be used to extend through the wall assembly separation between a garage and a dwelling unit for a central vacuum unit.

CHAPTER 22

SPECIAL PIPING AND STORAGE SYSTEMS

M2201.1 Materials. Supply tanks shall be *listed* and *labeled* and shall conform to UL 58 for underground tanks and UL 80 for indoor tanks.

NOTE: All special pipe and storage systems shall conform to Chapter 57 of the *Fire Code*.

CHAPTER 24

FUEL GAS

The text of this chapter is extracted from the 2015 edition of the *International Fuel Gas Code* and has been modified where necessary to conform to the scope of application of the *International Residential Code for One- and Two-Family Dwellings*. The section numbers appearing in parentheses after each section number are the section numbers of the corresponding text in the *International Fuel Gas Code*.

G2401.1 (101.2) Application. This chapter covers those fuel gas *pipng systems*, fuel gas *appliances* and related accessories, *venting systems* and *combustion air* configurations most commonly encountered in the construction of one- and two-family *dwellings* and *structures* regulated by this *code*.

Covering of *pipng systems* shall extend from the *point of delivery* to the outlet of the *appliance* shutoff valves. *Pipng systems* requirements shall include design, materials, components, fabrication, assembly, installation, testing, inspection, operation and maintenance. Requirements for gas *appliances* and related accessories shall include installation, combustion and ventilation air and venting and connections to *pipng systems*.

The omission from this chapter of any material or method of installation provided for in the ~~*International Fuel Gas Plumbing Code*~~ shall not be construed as prohibiting the use of such material or method of installation. Fuel gas *pipng systems*, fuel gas *appliances* and related accessories, *venting systems* and *combustion air* configurations not specifically covered in these chapters shall comply with the applicable provisions of the ~~*International Fuel Gas Plumbing Code*~~.

Gaseous hydrogen systems shall be regulated by ~~Chapter 7~~ of the ~~*International Fuel Gas Fire Code*~~.

This chapter shall not apply to the following:

1. Liquefied natural gas (LNG) installations.
2. Temporary *LP-gas pipng* for buildings under construction or renovation that is not to become part of the permanent *pipng system*.
3. Except as provided in Section G2412.1.1, gas *pipng*, *meters*, gas *pressure regulators*, and other appurtenances used by the serving gas supplier in the distribution of gas, other than undiluted LP-gas.
4. Portable LP-gas *appliances* and *equipment* of all types that is not connected to a fixed fuel *pipng system*.
5. Portable fuel cell *appliances* that are neither connected to a fixed *pipng system* nor interconnected to a power grid.
6. Installation of hydrogen gas, LP-gas and compressed natural gas (CNG) systems on vehicles.
7. Liquid petroleum gas facilities regulated by the Railroad Commission of Texas pursuant to Chapter 113 of the *Texas Natural Resources Code*.

NOTE: All fuel oil facilities and piping shall conform to Chapter 61 of the *Fire Code*.

G2404.7 (301.11) Flood hazard. For structures located in flood hazard areas, the appliance, equipment and system installations regulated by this code shall be located at or above the elevation required by Chapter 19 of the City Code ~~Section R322 for utilities and attendant equipment.~~

Exception: ~~The appliance, equipment and system installations regulated by this code are permitted to be located below the elevation required by Section R322 for utilities and attendant equipment provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to such elevation.~~

G2406.2 (303.3) Prohibited locations. *Appliances* shall not be located in sleeping rooms, bathrooms, toilet rooms, storage closets or surgical rooms, or in a space that opens only into such rooms or spaces, except where the installation complies with one of the following:

1. The *appliance* is a direct-vent *appliance* installed in accordance with the conditions of the listing and the manufacturer's instructions.
2. *Vented room heaters, wall furnaces, vented decorative appliances, vented gas fireplaces, vented gas fireplace heaters and decorative appliances* for installation in vented solid fuel-burning *fireplaces* are installed in rooms that meet the required volume criteria of Section G2407.5.
3. ~~A single wall mounted unvented room heater is installed in a bathroom and such unvented room heater is equipped as specified in Section G2445.6 and has an input rating not greater than 6,000 Btu/h (1.76 kW). The bathroom shall meet the required volume criteria of Section G2407.5.~~
4. ~~A single wall mounted unvented room heater is installed in a bedroom and such unvented room heater is equipped as specified in Section G2445.6 and has an input rating not greater than 10,000 Btu/h (2.93 kW). The bedroom shall meet the required volume criteria of Section G2407.5.~~
5. ~~The appliance is installed in a room or space that opens only into a bedroom or bathroom, and such room or space is used for no other purpose and is provided with a solid weather-stripped door equipped with an approved self-closing device. All combustion air shall be taken directly from the outdoors in accordance with Section G2407.6.~~

G2412.2 (401.2) Liquefied petroleum gas storage. The storage system for *liquefied petroleum gas* shall be designed and installed in accordance with the ~~International Fire Code, and NFPA 58,~~ and applicable State laws that are administered by the Texas Railroad Commission.

G2413.3 (402.3) Sizing. *Gas piping* shall be sized in accordance with ~~one of the following: Tables G2413.4(1) through G2413.4(21). CSST piping shall be sized according to manufacturer's recommendations and the Plumbing Code.~~

1. ~~Pipe sizing tables or sizing equations in accordance with Section G2413.4.~~
2. ~~The sizing tables included in a listed piping system's manufacturer's installation instructions.~~

3. ~~Other approved engineered methods.~~

{EDITORIAL NOTE: DELETE SECTION G2413.6 (402.6) IN ITS ENTIRETY.}

G2414.10.4 (403.10.4) Metallic fittings. Metallic fittings, shall comply with the following:

1. Fittings used with steel or wrought-iron *pipe* shall be steel, copper alloy, malleable iron, or cast iron.
2. Fittings used with copper or copper alloy *pipe* shall be copper or copper alloy.
3. Brass or bronze fittings, if exposed to soil, shall have a minimum 80-percent copper content.
- ~~34.~~ Cast-iron bushings shall be prohibited.
45. Special fittings. Fittings such as couplings, proprietary-type joints, saddle tees, gland-type compression fittings, and flared, flareless or compression-type *tubing* fittings shall be: used within the fitting manufacturer's pressure-temperature recommendations; used within the service conditions anticipated with respect to vibration, fatigue, thermal expansion or contraction; and shall be *approved*.
56. Where pipe fittings are drilled and tapped in the field, the operation shall be in accordance with all of the following:
 - 56.1. The operation shall be performed on systems having operating pressures of 5 psi (34.5 kPa) or less.
 - 56.2. The operation shall be performed by the gas supplier or the gas supplier's designated representative.
 - 56.3. The drilling and tapping operation shall be performed in accordance with written procedures prepared by the gas supplier.
 - 56.4. The fittings shall be located outdoors.
 - 56.5. The tapped fitting assembly shall be inspected and proven to be free of leakage.

G2415.6 (404.6) Underground penetrations prohibited. Gas *piping* shall not penetrate building foundation walls at any point below *grade*. Gas *piping* shall enter and exit a building at a point above grade and the annular space between the *pipe* and the wall shall be sealed at a point where the *pipe* enters the building.

G2415.11 (404.11) Protection against corrosion. Metallic pipe or *tubing* exposed to corrosive action, such as soil condition or moisture, shall be protected in an *approved* manner. Zinc coatings (galvanizing) shall not be deemed adequate protection for *gas piping* underground. Where dissimilar metals are joined ~~underground~~, an insulating coupling or fitting shall be used. *Piping* shall not be laid in contact with cinders.

G2415.12.1 (404.12.1) Individual outside appliances. Individual lines to outdoor lights, grills, or other *appliances* shall be installed not less than 12 inches (304.56 mm)-8 inches (203 mm) below finished grade, provided that such installation is *approved* and is installed in locations not susceptible to physical damage.

G2415.17.1 (404.17.1) Limitations. Plastic pipe shall be installed outdoors underground only, with a minimum depth of 18 inches of cover. Plastic pipe shall not be used within or under any building or slab or be operated at pressures greater than 100 psig (689 kPa) for natural gas or 30 psig (207 kPa) for LP gas.

Exceptions:

1. Plastic pipe shall be permitted to terminate above ground outside of buildings where installed in premanufactured *anodeless risers* or service head adapter risers that are installed in accordance with the manufacturer's installation instructions.
2. Plastic pipe shall be permitted to terminate with a wall head adapter within buildings where the plastic pipe is inserted in a *pipng* material for *fuel* gas use in buildings.
3. Plastic pipe shall be permitted under outdoor patio, walkway, and driveway slabs provided that the burial depth complies with Section G2415.10.

G2417.1.1 (406.1.1) Inspections. Inspections shall consist of visual examination, during or after manufacture, fabrication, assembly ~~or~~ and pressure tests. The building official shall make the following inspections and either approve the portion of the work as completed or notify the permit holder that the same fails to comply with this code:

1. **Rough piping inspection.** This inspection shall be made after all gas piping authorized by the *permit* has been installed and before any such piping has been covered or concealed, or any fixture or *appliance* has been attached thereto. This inspection shall include a determination that the gas piping size, material, and installation meet the requirements of this code. This inspection shall also include a pressure test in which the gas piping shall pass an air pressure test of 25 psi (172 kPa) for a period of 15 minutes with no perceptible drop in pressure.

For metal welded piping and for piping carrying gas at pressure greater than 14 inches (355.6 mm) water column pressure, the test pressure shall not be less than 100 psi (689 kPa) for 30 minutes. These tests shall be made using air, CO, or nitrogen pressure only and shall be made in the presence of the inspector. All necessary apparatus for conducting tests shall be furnished by the permit holder.
2. **Final piping inspection.** This inspection shall be made after all piping authorized by the *permit* has been installed and after all portions are covered or concealed, after all fixtures, *appliances* or shutoff valves have been attached, before any fixture, appliance, or shutoff valve has been attached thereto and after the completed system is ready to be put in service. This inspection shall include an air, CO, or nitrogen pressure test at a pressure measured with a manometer or slope gauge for a period of

not less than 15 minutes with no perceptible drop in pressure. The test pressure shall not be less than twice the pressure that the system will be subjected to when in service. These tests shall be made in the presence of the inspector. All necessary apparatus for conducting tests shall be furnished by the permit holder. A final inspection shall be required for all gas systems that require a permit as defined in the Plumbing Code.

For annual gas tests and gas turn-ons, the tests shall be done at the pressure required for the final gas inspection.

G2417.4 (406.4) Test pressure measurement. Test pressure shall be measured with a manometer or with an approved alternative pressure-measuring device designed and calibrated to read, record, or indicate a pressure loss caused by leakage during the pressure test period. The source of pressure shall be isolated before the *pressure tests* are made. Mechanical gauges used to measure test pressures shall have a range such that the highest end of the scale is not greater than five times the test pressure. Test gauges shall have a pressure range not greater than twice the pressure applied.

G2417.4.1 (406.4.1) Test pressure. The test pressure to be used shall be not less than 1½ times the proposed maximum working pressure, but not less than 3 psig (20 kPa gauge), irrespective of design pressure. Where the test pressure exceeds 125 psig (862 kPa gauge), the test pressure shall not exceed a value that produces a hoop stress in the *pipng* greater than 50 percent of the specified minimum yield strength of the pipe.

G2417.4.2 (406.4.2) Test duration. The test duration shall be not less than ~~40~~ 15 minutes.

G2417.4.3 (406.4.3) Approved Alternative Pressure Measuring Devices. The following alternative pressure measuring devices are approved:

1. Low pressure systems. A low-pressure diaphragm gauge with a minimum dial size of 3½ inches (88.9 mm) with a set hand and a pressure range not to exceed 6 psi with 1/10 pound (0.69 kPa) increments. The minimum test pressure shall not be less than 3 psi, and the maximum test pressure to be applied shall not exceed 4 psi.
2. Medium pressure systems. A diaphragm type pressure gauge with a minimum dial size of 3½ inches (88.9 mm) with a set hand and a pressure range not to exceed 20 psi with 2/10-pound (1.38 kPa) increments. The minimum test pressure shall not be less than 10 psi, and the maximum test pressure shall not exceed 12 psi.
3. High pressure systems. Gauges for high pressure tests shall be as follows:
 - 3.1. Required pressure tests that exceed 10 pounds (69 kPa) but do not exceed 100 pounds (689 kPa) shall be performed with gauges that have 1 pound (6.9 kPa) increments or less.
 - 3.2. Required pressure tests that exceed 100 pounds (689 kPa) shall be performed with gauges incremented for 2 percent or less of the required test pressure.

G2418.2 (407.2) Design and installation. *Piping* shall be supported with metal pipe hooks, metal pipe straps, metal bands, metal brackets, metal hangers or building structural components suitable for the size of *pipng*, of adequate strength and quality, and located at intervals to prevent

or damp out excessive vibration. *Piping* shall be anchored to prevent undue strains on connected *appliances* and shall not be supported by other *piping or equipment*. Pipe hangers and supports shall conform to the requirements of MSS SP-58 and shall be spaced in accordance with Section G2424. Supports, hangers and anchors shall be installed so as not to interfere with the free expansion and contraction of the *piping* between anchors. All parts of the supporting *equipment* shall be designed and installed so that they will not be disengaged by movement of the supported *piping*.

G2419.4 (408.4) Sediment trap. Where a sediment trap is not incorporated as part of the appliance, a sediment trap shall be installed downstream of the appliance shutoff valve as close to the inlet of the appliance as practical. The sediment trap shall be either a tee fitting having a capped nipple of any length installed vertically in the bottommost opening of the tee as illustrated in Figure G2419.4 or other device approved as an effective sediment trap. Illuminating appliances, ranges, clothes dryers, decorative vented appliances for installation in vented fireplaces, gas fireplaces and outdoor grills need not be so equipped.

{EDITORIAL NOTE: DELETE FIGURE G2419.4 AND REPLACE WITH FIGURE 1211.8 OF THE 2012 UNIFORM PLUMBING CODE.}

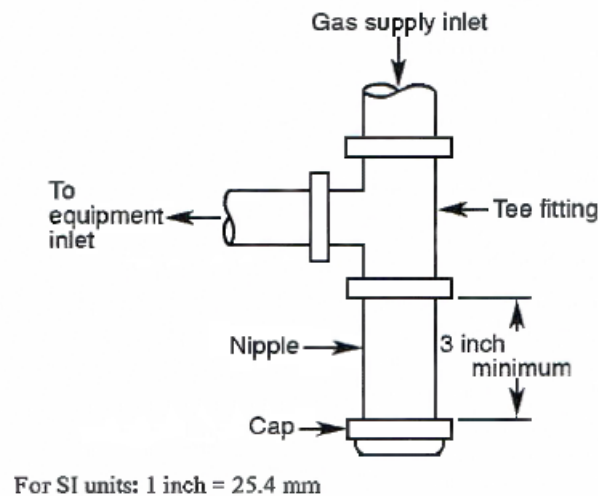


FIGURE G2419.4 (408.4)
METHOD OF INSTALLING A TEE FITTING SEDIMENT TRAP
[NFPA 54: FIGURE 9.6.7]

G2423.1 (413.1) General. Motor fuel-dispensing facilities for CNG fuel and their operation shall be in accordance with ~~Section 413 of the~~ International Fuel Gas Fire Code.

G2425.8 (501.8) Appliances not required to be vented. The following *appliances* shall not be required to be vented:

1. Ranges.
2. Built-in domestic cooking units *listed* and marked for optional venting.
3. Hot plates and laundry stoves.

4. *Type 1 clothes dryers* (*Type 1 clothes dryers* shall be exhausted in accordance with the requirements of Section G2439).
5. Refrigerators.
6. Counter *appliances*.
7. ~~Room heaters listed for unvented use.~~

Where the *appliances* listed in Items 5 ~~and 6 through 7~~ above are installed so that the aggregate input rating exceeds 20 *Btu* per hour per cubic foot (207 W/m³) of volume of the room or space in which such *appliances* are installed, one or more shall be provided with venting *systems* or other *approved* means for conveying the *vent gases* to the outdoor atmosphere so that the aggregate input rating of the remaining *unvented appliances* does not exceed 20 *Btu* per hour per cubic foot (207 W/m³). Where the room or space in which the *appliance* is installed is directly connected to another room or space by a doorway, archway or other opening of comparable size that cannot be closed, the volume of such adjacent room or space shall be permitted to be included in the calculations.

G2439.7.4.1 (614.8.4.1) Specified length. The maximum length of the exhaust duct shall be 35 feet (10,668 mm) from the connection to the transition duct from the dryer to the outlet terminal. Where fittings are used, the maximum length of the exhaust duct shall be reduced in accordance with Table G2439.7.4.1.

Exception: Listed booster fans installed per manufacturer's specifications may be provided to extend the maximum length of the exhaust duct.

G2439.7.5 (614.8.5) Length identification. Where the exhaust duct is concealed within the building construction and the equivalent length exceeds 35 feet (10,668 mm), the equivalent length of the exhaust duct shall be identified on a permanent label or tag. The label or tag shall be located within 6 feet (1,829 mm) of the exhaust duct connection.

G2445.1 (621.1) General. ~~Unvented room heaters shall be tested in accordance with ANSI Z21.11.2 and shall be installed in accordance with the conditions of the listing and the manufacturer's instructions.~~ **Prohibited fuel-burning room heaters and decorative appliances.** Unvented fuel-burning *room heaters* and decorative *appliances* shall be prohibited.

{EDITORIAL NOTE: DELETE REMAINDER OF SECTION G2445.}

G2447.2 (623.2) Prohibited location. Cooking appliances designed, tested, *listed* and *labeled* for use in commercial occupancies shall only not be installed within dwelling units or within any area where domestic cooking operations occur when in compliance with the ventilation and clearance to combustibles requirements for commercial cooking appliances in the Mechanical Code.

Exception: Appliances that are also *listed* as domestic cooking appliances.

CHAPTER 25

PLUMBING ADMINISTRATION

P2503.5.1 Rough plumbing. DWV systems shall be tested on completion of the rough piping installation by water or, for piping systems other than plastic, by air, without evidence of leakage. ~~Either~~ The test shall be applied to the drainage system in its entirety or in sections after rough-in piping has been installed, as follows:

1. Water test. Each section shall be filled with water to a point not less than 5 feet (1,524 mm) ~~above the highest fitting connection in that section, or to~~ the highest point in the completed system. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection.
2. Air test. The portion under test shall be maintained at a gauge pressure of 5 pounds per square inch (psi) (34 kPa) or 10 inches of mercury column (34 kPa). This pressure shall be held without introduction of additional air for a period of 15 minutes.

CHAPTER 27

PLUMBING FIXTURES

P2708.1 General. Shower compartments shall have not less than 1024 square inches (0.827 m²) ~~900 square inches (0.6 m²)~~ of interior cross-sectional area. Shower compartments shall be not less than 30 inches (762 mm) in minimum dimension measured from the finished interior dimension of the shower compartment, exclusive of fixture valves, shower heads, soap dishes, and safety grab bars or rails. The minimum required area and dimension shall be measured from the finished interior dimension at a height equal to the top of the threshold and at a point tangent to its centerline and shall be continued to a height of not less than 70 inches (1,778 mm) above the shower drain outlet. Hinged shower doors shall open outward. The wall area above built-in tubs having installed shower heads and in shower compartments shall be constructed in accordance with Section R702.4. Such walls shall form a water-tight joint with each other and with either the tub, receptor or shower floor.

Exceptions:

1. Fold-down seats shall be permitted in the shower, provided the required 1,024 square inches (0.827 m²) ~~900 square inch (0.6 m²)~~ dimension is maintained when the seat is in the folded-up position.
2. When replacing standard size bathtubs of 30 inches by 60 inches (762 mm by 1,524 mm), shower ~~Shower~~ compartments having not less than 25 inches (635 mm) in minimum dimension measured from the finished interior dimension of the compartment provided that the shower compartment has a cross-sectional area of not less than 1,300 square inches (0.838 m²).

P2708.2 Shower drain. Shower drains shall have an outlet size of not less than 1½ inches [38 mm] ~~2 inches (50.8 mm)~~ in diameter.

P2709.5 Test for shower receptors. Shower receptors shall be tested for watertightness by filling with water to the level of the rough threshold. The test plug shall be so placed that both upper and under sides of the subpan shall be subjected to the test at the point where it is clamped to the drain.

P2717.2 Sink and dishwasher. The combined discharge from a dishwasher and a one- or two-compartment sink, with or without a food-waste disposer, shall be served by a trap of not less than 1½ inches (38 mm) in outside diameter. The dishwasher discharge pipe or tubing shall rise to the underside of the counter and be fastened or otherwise held in that position before connecting to the head of the food-waste disposer or ~~to a wye fitting in the sink tailpiece.~~

SECTION P2725

~~NONLIQUID SATURATED TREATMENT SYSTEMS~~ RESERVED

{EDITORIAL NOTE: DELETE AND RESERVE THE CONTENTS OF THIS SECTION.}

CHAPTER 28

WATER HEATERS

P2801.6 Required pan. Where a ~~storage tank-type~~ water heater or a hot water storage tank is installed in a location where water leakage from the water heater, the hot water storage tank, or the connections thereto will cause damage, the tank shall be installed in a pan constructed of one of the following:

1. Galvanized steel or aluminum of not less than 0.0236 inch (0.6010 mm) in thickness.
2. Plastic not less than 0.036 inch (0.9 mm) in thickness.
3. Other approved materials.

Where available, listed pans shall be used. A plastic pan shall not be installed beneath a gas-fired water heater.

P2801.6.1 Pan size and drain. The pan shall be not less than 1½ inches (38 mm) deep and shall be of sufficient size and shape to receive dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe of not less than ¾ inch (19 mm) diameter. Piping for safety pan drains shall be of those materials indicated in Table P2905.5. Where a pan drain was not previously installed, a pan drain shall ~~not~~ be required for a replacement water heater installation and shall be installed in accordance with Section P2801.6.2.

P2804.6.1 Requirements for discharge pipe. The discharge piping serving a pressure-relief valve, temperature relief valve or combination valve shall:

1. Not be directly connected to the drainage system.
2. Discharge through an air gap located in the same room as the water heater.
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.
5. Discharge to the floor, ~~to the pan serving the water heater or storage tank,~~ to a waste receptor or to the outdoors.
6. Discharge in a manner that does not cause personal injury or structural damage.
7. Discharge to a termination point that is readily observable by the building occupants.
8. Not be trapped.
9. Be installed to flow by gravity.
10. Terminate not more than 6 inches (152 mm) and not less than two times the discharge pipe diameter above the floor or waste receptor flood level rim.

11. Not have a threaded connection at the end of the piping.
12. Not have valves or tee fittings.
13. Be constructed of those materials indicated in Section P2906.5 or materials tested, rated and *approved* for such use in accordance with ASME A112.4.1.
- ~~14. Be one nominal size larger than the size of the relief valve outlet, where the relief valve discharge piping is constructed of PEX or PE-RT tubing. The outlet end of such tubing shall be fastened in place.~~

CHAPTER 29

WATER SUPPLY AND DISTRIBUTION

P2902.5.1 Connections to boilers. ~~Where chemicals will not be introduced into a boiler, the~~ The potable water supply to the boiler shall be protected from the boiler by a backflow preventer ~~with an intermediate atmospheric vent complying with ASSE 1012 or CSA B64.3.~~ Where chemicals will be introduced into a boiler, the potable water supply to the boiler shall be protected from the boiler by an air gap or a reduced pressure principle backflow prevention assembly complying with ASSE 1013, CSA B64.4 or AWWA C511.

P2902.5.5.3 Direct systems for other than potable water distribution systems.

Where a solar thermal system directly heats water for a system other than a potable water distribution system, a potable water supply connected to such system shall be protected by a backflow preventer ~~with an intermediate atmospheric vent complying with ASSE 1012.~~ Where a solar thermal system directly heats chemically treated water for a system other than a potable water distribution system, a potable water supply connected to such system shall be protected by a reduced pressure principle backflow prevention assembly complying with ASSE 1013.

TABLE P2903.2
MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING
FIXTURES AND FIXTURE FITTINGS^b

PLUMBING FIXTURE OR FIXTURE FITTING	PLUMBING FIXTURE OR FIXTURE FITTING
Lavatory faucet	2.2 gpm at 60 psi
Shower head ^a	2.5 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Water closet	<u>1.28</u> 4.6 gallons per flushing cycle

For SI: 1 gallon per minute = 3.785 L/m,
1 pound per square inch = 6.895 kPa.

- a. A handheld shower spray ~~shall be considered~~ is also a shower head.
- b. Consumption tolerances shall be determined from referenced standards.

P2904.1 General. The design and installation of residential fire sprinkler systems shall be in accordance with NFPA 13D or Section P2904, which shall be considered equivalent to NFPA 13D. Partial residential sprinkler systems shall be permitted to be installed only in buildings not required to be equipped with a residential sprinkler system. Section P2904 shall apply to stand-alone and multipurpose wet-pipe sprinkler systems that do not include the use of antifreeze. A multipurpose fire sprinkler system shall provide domestic water to both fire sprinklers and plumbing fixtures. A stand-alone sprinkler system shall be separate and independent from the water distribution system. ~~A backflow preventer shall not be required to separate a stand-alone sprinkler system from the water distribution system.~~

P2904.3 Sprinkler piping system. Sprinkler piping shall be supported in accordance with requirements for cold water distribution piping. Sprinkler piping shall comply with the requirements for cold water distribution piping. For multipurpose piping systems, the sprinkler piping shall connect to and be a part of the cold water distribution piping system.

Exception: For plastic piping, it shall be ~~permissible~~ required to follow either the manufacturer's installation instructions or the provisions of this code, whichever is more restrictive.

P2906.8 Joint and connection tightness. Joints and connections in the plumbing system shall be gas tight and water tight for the intended use or required test pressure. No joints shall be permitted under slabs.

P2906.9.1.5 Cross-linked polyethylene plastic (PEX). ~~↓Tubing and joints~~ between cross-linked polyethylene plastic tubing or fittings shall comply with Section 2906.9.1.5.1 ~~or through~~ Section P2906.9.1.5.23.

P2906.9.1.5.3 Tubing. PEX tubing shall have a minimum chlorine designation code of 5 to meet minimum chlorine resistance at end use condition of 100% of the time at 140°F. Acceptable markings on the tubing are PEX 5106, PEX 5206, and PEX 5306.

P2906.17.2 Plastic pipe or tubing to other piping material. Joints between different types of plastic pipe or between plastic pipe and other piping material shall be made with an *approved* adapter fitting. Plastic adapter fittings shall be male only.

P2910.1 Scope. The provisions of either this section or the rules promulgated by the Texas Commission on Environmental Quality, whichever is more restrictive, shall govern the materials, design, construction and installation of systems for the collection, storage, treatment and distribution of nonpotable water. The use and application of nonpotable water shall comply with laws, rules and ordinances applicable in the *jurisdiction*.

P2911.1 General. The provisions of either this section or the rules promulgated by the Texas Commission on Environmental Quality, whichever is more restrictive, shall govern the construction, installation, alteration and repair of on-site nonpotable water reuse systems for the collection, storage, treatment and distribution of on-site sources of nonpotable water as permitted by the *jurisdiction*.

P2912.1 General. The provisions of either this section or the rules promulgated by Texas Commission on Environmental Quality, whichever is more restrictive, shall govern the construction, installation, alteration, and repair of rainwater collection and conveyance systems for the collection, storage, treatment and distribution of rainwater for nonpotable applications, as permitted by the *jurisdiction*.

CHAPTER 30

SANITARY DRAINAGE

P3001.3 Flood-resistant installation. In flood hazard areas as established by Chapter 19 of the City Code Table R301.2(1), drainage, waste and vent systems shall be located and installed to prevent infiltration of floodwaters into the systems and discharges from the systems into floodwaters.

P3002.3.1 Drainage. Drainage fittings shall have a smooth interior waterway of the same diameter as the piping served. Fittings shall conform to the type of pipe used. Drainage fittings shall not have ledges, shoulders or reductions that can retard or obstruct drainage flow in the piping. Threaded drainage pipe fittings shall be of the recessed drainage type, cast iron-black or galvanized. Drainage fittings shall be designed to maintain one-fourth unit vertical in 12 units horizontal (2-percent slope) grade. This section shall not be applicable to tubular waste fittings used to convey vertical flow upstream of the trap seal liquid level of a fixture trap.

P3003.9.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F 656 shall be applied. Solvent cement not purple in color and conforming to ASTM D 2564, CSA B137.3 or CSA B181.2 shall be applied to all joint surfaces. The joint shall be made while the cement is wet, and shall be in accordance with ASTM D 2855. Solvent cement joints shall be installed above or below ground.

Exception: ~~A primer shall not be required where all of the following conditions apply:~~

- ~~1. The solvent cement used is third party certified as conforming to ASTM D 2564.~~
- ~~2. The solvent cement is used only for joining PVC drain, waste and vent pipe and fittings in nonpressure applications in sizes up to and including 4 inches (102 mm) in diameter.~~

TABLE P3005.1
FITTINGS FOR CHANGE IN DIRECTION

TYPE OF FITTING PATTERN	CHANGE IN DIRECTION		
	HORIZONTAL TO VERTICAL ^c	VERTICAL TO HORIZONTAL	HORIZONTAL TO HORIZONTAL
Sixteenth bend	X	X	X
Eighth bend	X	X	X
Sixth bend	X	X	X
Quarter bend	X	X ^a	X ^a
Short sweep	X	X ^{a,b}	X ^a
Long sweep	X	X	X
Sanitary tee	X ^c	--	--
Wye	X	X	X
Combination wye and eighth bend	X	X	X

For SI: 1 inch = 25.4 mm.

a. The fittings shall only be permitted for a 2-inch or smaller fixture drain.

- b. Three inches ~~and or~~ larger.
- c. For a limitation on multiple connection fittings, see Plumbing Code Section-P3005.1.1 706.2.

P3005.2.1 Horizontal drains and building drains. Horizontal drainage pipes in buildings shall have cleanouts located at intervals of not more than 100 feet (30,480 mm). *Building drains* shall have cleanouts located at intervals of not more than 100 feet (30,480 mm) except where manholes are used instead of cleanouts, the manholes shall be located at intervals of not more than ~~400 feet (122 m)~~ 300 feet (92 m). The interval length shall be measured from the cleanout or manhole opening, along the *developed length* of the piping to the next drainage fitting providing access for cleaning, the end of the horizontal drain or the end of the *building drain*.

Exception: Horizontal fixture drain piping serving a nonremovable trap shall not be required to have a cleanout for the section of piping between the trap and the vent connection for such trap.

P3005.2.8 Installation arrangement. The installation arrangement of a cleanout shall enable cleaning of drainage piping only in the direction of drainage flow; unless using a

Exceptions:

1. ~~Test tees serving as cleanouts.~~
2. ~~A two-way cleanout installation that is approved for meeting the requirements of Section P3005.2.3.~~

P3005.4.1 Branch and stack sizing. Branches and stacks shall be sized in accordance with Table P3005.4.1. Below grade drain pipes shall be not less than 2 inches (50 mm) ~~1½ inches (38 mm)~~ in diameter. Drain stacks shall be not smaller than the largest horizontal branch connected.

Exceptions:

1. A 4-inch by 3-inch (102 mm by 76 mm) closet bend or flange.
2. A 4-inch (102 mm) closet bend connected to a 3-inch (76 mm) stack ~~tee shall not be prohibited.~~

P3008.1 Sewage backflow. Where the flood level rims of plumbing fixtures are below the elevation of the manhole cover of the next upstream manhole in the public sewer, the fixtures shall be protected by a backwater valve installed in the *building drain*, branch of the *building drain* or horizontal branch serving such fixtures. Plumbing fixtures having flood level rims above the elevation of the manhole cover of the next upstream manhole in the public sewer shall not discharge through a backwater valve.

Exception: ~~In existing buildings, fixtures above the elevation of the manhole cover of the next upstream manhole in the public sewer shall not be prohibited from discharging through a backwater valve.~~

P3009.1 Scope. The provisions of this section or the rules promulgated by the Texas Commission of Environmental Quality, whichever is more restrictive, shall govern the materials, design,

construction and installation of subsurface landscape irrigation systems connected to nonpotable water from on-site water reuse systems.

CHAPTER 31

VENTS

P3114.3 Where permitted. Individual vents, ~~branch vents, circuit vents and stack vents~~ shall be permitted to terminate with a connection to *an air admittance valve*. Individual and branch type air admittance valves shall vent only fixtures that are on the same floor level and connect to a horizontal branch drain.

P3114.4 Location. ~~Individual and branch~~ The *air admittance valves* shall be located ~~not less than 4 inches (102 mm) above the horizontal branch drain or fixture drain being vented.~~ Stack type air admittance valves shall be located not less than 6 inches (152 mm) above the flood level rim of the ~~highest~~ fixture being vented. The *air admittance valve* shall be located within the maximum *developed length* permitted for the vent. The *air admittance valve* shall be installed not less than 6 inches (152 mm) above insulation materials where installed in *attics*.

CHAPTER 32

TRAPS

TABLE P3201.7
SIZE OF TRAPS AND TRAP ARMS FOR *PLUMBING FIXTURES*

PLUMBING FIXTURE	TRAP SIZE MINIMUM (inches)
Bathtub (with or without shower head and/or whirlpool attachments)	2 4½
Bidet	1 ¼
Clothes washer standpipe	2
Dishwasher (on separate trap)	1½
Floor drain	2
Kitchen sink (one or two traps, with or without dishwasher and food waste disposer)	1½
Laundry tub (one or more compartments)	1½
Lavatory	1 ¼
Shower (based on the total flow rate through showerheads and body sprays) Flow rate:	
5.7 gpm and less	1½ 2
More than 5.7 gpm up to 12.3 gpm	2
More than 12.3 gpm up to 25.8 gpm	3
More than 25.8 gpm up to 55.6 gpm	4
Water closet	3

For SI: 1 inch = 25.4 mm.

{EDITORIAL NOTE: DELETE CHAPTERS 34-43 IN THEIR ENTIRETY.}

CHAPTER 44

REFERENCED STANDARDS

(EDITORIAL NOTE: PORTIONS OF THIS CHAPTER NOT SHOWN SHALL REMAIN AS SET FORTH IN THE 2015 IRC.)

ASTM

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Standard Reference number	Title	Referenced in code section number
E 84—2013a	Test Method for Surface Burning Characteristics of Building Materials	R202, R302.9.3, R302.9.4, R302.10.1, R302.10.2, R316.3, R316.5.9, R316.5.11, R507.3.2, R802.1.5, M1601.3, M1601.5.2
E 90—09(2016)	Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements	N104.1, N105.1

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

Standard Reference number	Title	Referenced in code section number
70— 2014	National Electrical Code	108.3, 415.11.1.8, 904.3.1, 907.6.1, 909.12.2, 909.16.3, 1205.4.1, 2701.1, 2702.1.2, G501.4, G1001.6, H106.1, H106.2, K101, K111.1, E3401.1, E3401.2, E4301.1, Table E4303.2, E4304.3, E4304.4, R324.3
241—19	Standard for Safeguarding Construction, Alteration, and Demolition Operations	3301.1

APPENDIX A

SIZING AND CAPACITIES OF GAS PIPING

~~(This appendix is informative and is not part of the code.~~ This appendix is an excerpt from the 2015 *International Fuel Gas Code*, coordinated with the section numbering of the *International Residential Code*.)

{EDITORIAL NOTE: ALL OTHER PROVISIONS OF THIS APPENDIX REMAIN AS SET FORTH IN 2015 IRC.}

APPENDIX B

SIZING OF VENTING SYSTEMS SERVING APPLIANCES EQUIPPED WITH DRAFT HOODS, CATEGORY I APPLIANCES, AND APPLIANCES LISTED FOR USE WITH TYPE B VENTS

~~(This appendix is informative and is not part of the code. This appendix is an excerpt from the 2015 International Fuel Gas Code, coordinated with the section numbering of the International Residential Code.)~~

{EDITORIAL NOTE: ALL OTHER PROVISIONS OF THIS APPENDIX REMAIN AS SET FORTH IN 2015 IRC.}

APPENDIX C

EXIT TERMINALS OF MECHANICAL DRAFT AND DIRECT-VENT VENTING SYSTEMS

~~(This appendix is informative and is not part of the code. This appendix is an excerpt from the 2015 International Fuel Gas Code, coordinated with the section numbering of the International Residential Code.)~~

{EDITORIAL NOTE: ALL OTHER PROVISIONS OF THIS APPENDIX REMAIN AS SET FORTH IN 2015 IRC.}

APPENDIX H

PATIO COVERS

(The provisions contained in this appendix are ~~not mandatory unless specifically referenced in the adopting ordinance.~~)

{EDITORIAL NOTE: ALL OTHER PROVISIONS OF THIS APPENDIX REMAIN AS SET FORTH IN 2015 IRC.}

APPENDIX K

SOUND TRANSMISSION

(The provisions contained in this appendix are ~~not mandatory unless specifically referenced in the adopting ordinance.~~)

AK101.1 General. Wall and floor-ceiling assemblies separating dwelling units in multi-family residential structures, including those separating adjacent *townhouse* units, shall provide air-borne sound insulation for walls, and both air-borne and impact sound insulation for floor-ceiling assemblies.

{EDITORIAL NOTE: ALL OTHER PROVISIONS OF THIS APPENDIX REMAIN AS SET FORTH IN 2015 IRC.}

APPENDIX L

PERMIT FEES

{EDITORIAL NOTE: DELETE ENTIRE APPENDIX AND REPLACE WITH THE FOLLOWING.}

CONVENTIONAL LIGHT-FRAME WOOD CONSTRUCTION FOR SINGLE FAMILY RESIDENTIAL CONSTRUCTION IN HIGH-WIND AREAS

SECTION AL101 GENERAL

AL101.1 Scope. This chapter applies to regular-shaped single family residential buildings that are not more than three stories in height and are of conventional light-frame construction.

Exception: Detached carports and garages not exceeding 700 square feet (65 m²) and accessory to Group R-3 occupancies need only comply with the roof-member-to-wall-tie requirements of Section AL 103.8.

SECTION AL102 DEFINITION

CORROSION RESISTANT or NONCORROSIVE. Refers to a material having a *corrosion resistance* equal to or greater than a hot-dipped galvanized coating of 1.5 ounces of zinc per square foot (4 g/m²) of surface area. When an element is required to be corrosion resistant or noncorrosive, all of its parts, such as screws, nails, wire, dowels, bolts, nuts, washers, shims, *anchors*, ties and attachments, shall also be corrosion resistant or noncorrosive.

SECTION AL103 COMPLETE LOAD PATH AND UPLIFT TIES

AL103.1 General. Blocking, bridging, straps, approved framing anchors or mechanical fasteners shall be installed to provide continuous ties from the roof to the foundation system. Tie straps shall be 1 1/8 inch (28.6 mm) by 0.036 inch (0.91 mm) (No. 20 gauge) sheet steel and shall be corrosion resistant as herein specified. All metal connectors and fasteners used in exposed locations or in areas otherwise subject to corrosion shall be of corrosion-resistant or noncorrosive material. The number of common nails specified is the total required and shall be equally divided on each side of the connection. Nails shall be spaced to avoid splitting of the wood.

Exception: Pre-manufactured connectors that provide equal or greater tie-down capacity may be used, provided that they are installed in compliance with all the manufacturer's specifications.

AL103.2 Wall-to-foundation tie. Exterior walls shall be tied to a continuous foundation system or an elevated foundation system in accordance with Section AL105.

AL103.3 Sills and foundation tie. Foundation plates resting on concrete or masonry foundations shall be bolted to the foundation with not less than ½ inch diameter (13 mm) anchor bolts with 7 inch (178 mm) minimum embedment into the foundation and spaced not more than 4 feet (1,219 mm) on center.

AL103.4 Floor-to-foundation tie. The lowest level exterior wall studs shall be connected to the foundation sill plate or an approved elevated foundation system with bent tie straps spaced not more than 32 inches (813 mm) on center. Tie straps shall be nailed with a minimum of 4 ten penny nails.

AL103.5 Wall framing details. The spacing of studs in exterior walls shall be in accordance with Chapter 23. Mechanical fasteners complying with this chapter shall be installed at a maximum of 32 inches (813 mm) on center as required to connect studs to the sole plates, foundation sill plate and top plates of the wall. The fasteners shall be nailed with a minimum of 8 eight penny nails.

Where openings exceed 4 feet (1,219 mm) in width, the required tie straps shall be secured at each edge of the opening and connected to a doubled full-height wall stud. When openings exceed 12 feet (3,658 mm) in width, two ties or a manufactured fastener designed to prevent uplift shall be provided at each connection.

AL103.6 Wall sheathing. All exterior walls and required interior main cross-stud partitions shall be sheathed in accordance with Chapter 6.

AL103.7 Floor-to-floor tie. Upper level exterior wall studs shall be aligned and connected to the wall studs below with tie straps placed a minimum of 32 inches (813 mm) on center and connected with a minimum of 6 eight penny nails per strap.

AL103.8 Roof-members-to-wall tie. Tie straps shall be provided from the side of the roof-framing member to the supporting member below the roof. Tie straps shall be placed at every roof framing member and connected with a minimum of 8 eight penny nails.

AL103.9 Ridge ties. Opposing common rafters shall be aligned at the ridge and be connected at the rafters with tie straps spaced a maximum of 32 inches (813 mm) on center and connected with 8 eight penny nails.

AL103.10 Gable end walls. Gable end wall studs shall be continuous between points of lateral support that are perpendicular to the plane of the wall. Gable end wall studs shall be attached with approved mechanical fasteners at the top and bottom. 8 eight penny nails shall be required for each fastener. Fasteners shall be spaced a maximum of 32 inches (813 mm) on center.

SECTION AL104

ROOFS

AL104.1 Roof sheathing. Solid roof sheathing shall be nailed to roof framing in an approved manner and shall consist of a minimum 1 inch thick (25.4 mm) nominal lumber applied diagonally or a minimum 15/32 inch thick (11.9 mm) wood structural panel or particle board (OSB) or other approved sheathing applied with the long dimension perpendicular to supporting rafters. The end joints of wood structural panels or particle board shall be staggered and shall occur over blocking, rafters, or other supports.

AL104.2 Roof covering. Roof coverings shall be approved and shall be installed and fastened in accordance with Chapter 9 or with the manufacturer's instructions, whichever is most restrictive.

AL104.3 Roof overhang. The roof eave overhang shall not exceed 3 feet (914 mm) unless an analysis is provided showing that the required resistance is provided to prevent uplift. The roof

overhang at gabled ends shall not exceed 2 feet (610 mm) unless an analysis showing that the required resistance to prevent uplift is provided.

SECTION AL105 **ELEVATED FOUNDATION**

AL105.1 General. When approved, elevated foundations supporting not more than one *story* and meeting the provisions of this section may be used. A foundation investigation may be required by the *building official*.

AL105.2 Material. All exposed wood framing members shall be treated wood. All metal connectors and fasteners used in exposed locations shall be corrosion-resistant or noncorrosive steel.

AL105.3 Wood piles. The spacing of wood piles shall not exceed 8 feet (2,438 mm) on center. Square piles shall not be less than 10 inches (254 mm) and tapered piles shall have a tip of not less than 8 inches (203 mm). Eight inch square (5,161 mm²) piles shall have a minimum embedment length of 5 feet (1,524 mm) and shall project not more than 8 feet (2,438 mm) above undisturbed ground surface. Eight inch (203 mm) taper piles shall have a minimum embedment length of 6 feet (1,828 mm) and shall project not more than 7 feet (2,134 mm) above undisturbed ground surface.

AL105.4 Girders. Floor girders shall consist of solid sawn timber, built up 2 inch thick (51 mm) lumber, or trusses. Splices shall occur over wood piles. The floor girders shall span in the direction parallel to the potential floodwater and wave action.

AL105.5 Connections. Wood piles may be notched to provide a shelf for supporting the floor girders. The total notching shall not exceed 50 percent of the pile cross section. Approved bolted connections with ¼ inch (6.4 mm) corrosion-resistant or noncorrosive steel plates and ¾ inch diameter (19 mm) bolts shall be provided. Each end of the girder shall be connected to the piles using a minimum of two ¾ inch diameter (19 mm) bolts.

APPENDIX M

HOME DAY CARE—R3 OCCUPANCY

(The provisions contained in this appendix are ~~not mandatory unless specifically referenced in the adopting ordinance.~~)

AM101.1 General. This appendix shall apply to a home day care operated within a dwelling. The area of application shall include buildings and structures occupied by persons of any age who receive custodial care for less than 24 hours by individuals other than parents, ~~or~~ guardians or relatives by blood, marriage, or adoption, and in a place other than the home of the person cared for.

{EDITORIAL NOTE: ALL OTHER PROVISIONS OF THIS APPENDIX REMAIN AS SET FORTH IN 2015 IRC.}

APPENDIX Q

~~RESERVED~~

AIRPORT SOUND ATTENUATION REQUIREMENTS

SECTION AQ101 GENERAL

AQ101.1 Purpose. The purpose of this appendix is to set forth sound attenuation specifications for buildings when such sound attenuation is required by Chapter 9, Article VI, of the *City Code* to achieve an interior sound level of 45 dBa or less.

AQ101.2 Applicability. These provisions shall apply where an airport land use *permit* is required under Section 9-381(a)(2) or (3) of the *City Code* and are in addition to other applicable building standards set forth elsewhere in this code.

AQ101.3 Alternate compliance. Alternative means or methods which equal or exceed the standards set forth in these provisions may be used when approved by the *building official* in accordance with section R104.11.

SECTION AQ201 DEFINITIONS

AQ201.1 Definitions. For the purposes of these provisions, the following words have the meaning shown herein.

SOUND TRANSMISSION CLASS (STC). An integer rating relating to the quality of sound attenuation for building partitions such as walls, ceilings, doors, and windows.

SECTION AQ301 WALLS

AQ301.1 General. The specific exterior wall assemblies set forth in Sections AQ301.2 and AQ 301.3 shall include the interior finishes set forth therein.

Exception: Exterior wall assemblies or materials that have been tested or *listed* with a minimum STC rating of 40 need not include the interior finishes set forth in Sections AQ301.2 and AQ 301.3.

AQ301.2 Brick veneer. When exterior walls are constructed using brick veneer, a minimum of ½ inch gypsum drywall shall be applied as the interior finish.

AQ301.3 Vinyl or cement sidings. When exterior walls are constructed using vinyl or cement sidings, a minimum of 5/8 inch gypsum drywall shall be applied as the interior finish.

AQ301.4 Other assemblies and materials. All other exterior wall assemblies or materials shall have a tested or *listed* minimum STC rating of 40.

SECTION AQ401 **WINDOWS**

AQ401.1 Windows. All windows shall have a minimum STC rating of 40 when tested in accordance with ASTM E 90.

AQ401.2 Insulation at windows. The cavity between the wood framing and the window frame shall be insulated with fiberglass insulation or foam insulation to the depth of the window frame.

SECTION AQ501 **DOORS**

AQ501.1 Doors. All exterior doors shall have a minimum STC rating of 40 when tested in accordance with ASTM E 90.

Exception: An exterior door may have a tested or *listed* STC rating of less than 40 when installed with a storm door which when combined, achieve a minimum tested or *listed* STC rating of 40.

SECTION AQ601 **ROOF/CEILING ASSEMBLIES**

AQ601.1 General. Roof/ceiling assemblies shall be constructed in accordance with the requirements of AQ601.2 or AQ601.3.

Exception: Roof/ceiling assemblies or materials that have been tested or *listed* with a minimum STC rating of 40 need not be constructed in accordance with the requirements of AQ601.2 or AQ601.3.

AQ601.2 Ceilings with unconditioned attic space above. Ceilings with unconditioned attic space shall be insulated with a minimum of ½ inch gypsum drywall on the interior ceiling side covered with a minimum of 12 inches of blown in fiberglass insulation.

AQ601.3 Ceilings without attic space above. Ceilings without attic space above shall be insulated with a minimum of 5/8 inch gypsum drywall on the interior side filled with a minimum of 9 inches of fiberglass batt insulation with a 1 inch air space between the roof sheathing and the fiberglass.

APPENDIX T

~~RECOMMENDED PROCEDURE FOR WORST CASE TESTING OF ATMOSPHERIC VENTINGS SYSTEMS UNDER N1102.4 OR N1105 CONDITIONS ≤ 5 ACH₅₀~~

{EDITORIAL NOTE: DELETE ENTIRE APPENDIX AND REPLACE WITH THE FOLLOWING.}

TINY HOUSES

User note: *Appendix T relaxes various requirements in the body of this code as they apply to houses that are 400 square feet in area or less. Attention is specifically paid to features such as stairs, including stair handrails and headroom, ladders, reduced heights in lofts, and guard and emergency escape and rescue opening requirements at lofts.*

SECTION AT101 GENERAL

AT101.1 Scope. This appendix shall be applicable to *tiny houses* used as single *dwelling units*. *Tiny houses* shall comply with this code except as otherwise stated in this appendix.

SECTION AT102 DEFINITIONS

AT102.1 General. The following words and terms shall, for the purposes of this appendix, have the meanings shown herein. Refer to Chapter 2 of this code for general definitions.

EGRESS ROOF ACCESS WINDOW. A *skylight* or roof window designed and installed to satisfy the emergency escape and rescue opening requirements in Section R310.2.

LANDING PLATFORM. A landing provided as the top step of a stairway accessing a *loft*.

LOFT. A floor level located more than 30 inches (762 mm) above the main floor, open to the main floor on one or more sides, with a ceiling height of less than 6 feet 8 inches (2,032 mm) and used as a living or sleeping space.

TINY HOUSE. A *dwelling* that is 400 square feet (37 m²) or less in floor area excluding *lofts*.

SECTION AT103 CEILING HEIGHT

AT103.1 Minimum ceiling height. *Habitable space* and hallways in *tiny houses* shall have a ceiling height of not less than 6 feet 8 inches (2,032 mm). Bathrooms, toilet rooms, and kitchens shall have a ceiling height of not less than 6 feet 4 inches (1,930 mm). Obstructions including, but not limited to, beams, girders, ducts and lighting, shall not extend below these minimum ceiling heights.

Exception: Ceiling heights in *lofts* are permitted to be less than 6 feet 8 inches (2,032 mm).

SECTION AT104 **LOFTS**

AT104.1 Minimum loft area and dimensions. A *loft* used as a sleeping or living space shall meet the minimum area and dimension requirements of Sections AT104.1.1 through AT104.1.3.

AT104.1.1 Minimum area. A *loft* shall have a floor area of not less than 35 square feet (3.25 m²).

AT104.1.2 Minimum dimensions. A *loft* shall be not less than 5 feet (1,524 mm) in any horizontal dimension.

AT104.1.3 Height effect on loft area. Portions of a *loft* with a sloping ceiling measuring less than 3 feet (914 mm) from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the *loft*.

Exception: Portions of a *loft* with a sloped ceiling measuring less than 16 inches (406 mm) from the finished floor to the finished ceiling located under a gable roof with a minimum slope of 6 units vertical in 12 units horizontal (50 percent slope) shall not be considered as contributing to the minimum required area for the *loft*.

AT104.2 Loft access. The access to and primary egress from *lofts* shall be of any type described in Sections AT104.2.1 through AT104.2.4.

AT104.2.1 Stairways. Stairways accessing *lofts* shall comply with this code or with Sections AT104.2.1.1 through AT104.2.1.5.

AT104.2.1.1 Width. Stairways accessing a *loft* shall not be less than 17 inches (432 mm) in clear width at or above the handrail. The width below the handrail shall be not less than 20 inches (508 mm).

AT104.2.1.2 Headroom. The headroom in stairways accessing a *loft* shall be not less than 6 feet 2 inches (1,880 mm), as measured vertically, from a sloped line connecting the tread or landing platform nosing's in the middle of their width.

AT104.2.1.3 Treads and risers. Risers for stairs accessing a *loft* shall not be less than 7 inches (178 mm) and not more than 12 inches (305 mm) in height. Tread depth and riser height shall be calculated in accordance with one of the following formulas:

1. The tread depth shall be 20 inches (508 mm) minus 4/3rds of the riser height.
2. The riser height shall be 15 inches (381 mm) minus three-fourths of the tread depth.

AT104.2.1.4 Landing platforms. The top tread and riser of stairways accessing *lofts* shall be constructed as a *landing platform* where the *loft* ceiling height is less than 6 feet 2 inches (1,880 mm) where the stairway meets the *loft*. The *landing platform* shall be 18 inches to 22 inches (457 to 559 mm) in depth measured from the nosing of the *landing platform* to the edge of *loft*, and 16 to 18 inches (406 to 457 mm) in height measured from the *landing platform* to the *loft* floor.

AT104.2.1.5 Handrails. Handrails shall comply with Section R311.7.8.

AT104.2.1.6 Stairway guards. Guards at open sides of stairways shall comply with Section R312.1.

AT104.2.2 Ladders. Ladders accessing *lofts* shall comply with Sections AT104.2.2.1 and AT104.2.2.2.

AT104.2.2.1 Size and capacity. Ladders accessing *lofts* shall have a rung width of not less than 12 inches (305 mm) and 10 inch (254 mm) to 14 inch (356 mm) spacing between rungs. Ladders shall be capable of supporting a 200 pound (75 kg) load on any rung. Rung spacing shall be uniform within 3/8 inch (9.5 mm).

AT104.2.2.2 Incline. Ladders shall be installed at 70 to 80 degrees from horizontal.

AT104.2.3 Alternating tread devices. Alternating tread devices accessing *lofts* shall comply with Sections R311.7.11.1 and R311.7.11.2. The clear width at and below the handrails shall be not less than 20 inches (508 mm).

AT104.2.4 Ships ladders. Ships ladders accessing *lofts* shall comply with Sections R311.7.12.1 and R311.7.12.2. The clear width at and below handrails shall be not less than 20 inches (508 mm).

AT104.2.5 Loft guards. *Loft* guards shall be located along the open side of *lofts*. *Loft* guards shall be not less than 36 inches (914 mm) in height or one-half of the clear height to the ceiling, whichever is less.

SECTION AT105 **EMERGENCY ESCAPE AND RESCUE OPENINGS**

AT105.1 General. *Tiny houses* shall meet the requirements of Section R310 for emergency escape and rescue openings.

Exception: *Egress roof access windows in lofts used as sleeping rooms shall be deemed to meet the requirements of Section R310 where installed such that the bottom of the opening is not more than 44 inches (1,118 mm) above the loft floor, provided the egress roof access window complies with the minimum opening area requirements of Section R310.2.1.*

APPENDIX U

SOLAR-READY PROVISIONS—DETACHED ONE- AND TWO-FAMILY DWELLINGS, MULTIPLE SINGLE-FAMILY DWELLINGS (TOWNHOUSES)

(The provisions contained in this appendix are ~~not~~ mandatory unless specifically referenced in the adopting ordinance.)

U103.6 Interconnection pathway. ~~Construction documents shall indicate pathways for routing of conduit or plumbing from the solar ready zone to the electrical service panel or service hot water system. Conduit not less than 1¼ inches (31.75 mm) shall be installed to provide a pathway from the electrical panel to the underside of the roof sufficient to allow future installation of solar equipment.~~

Exception: Section U103.6 shall not apply to new single-family homes subject to discount in the *Building Code* based on valuation.

{EDITORIAL NOTE: ALL OTHER PROVISIONS OF THIS APPENDIX REMAIN AS SET FORTH IN 2015 IRC.}

APPENDIX V

VISITABILITY

SECTION AV101

SCOPE

AV101.1 Purpose. This set of standards is intended to provide minimum residential features to allow a mobility-impaired person to visit and use a home by providing:

1. One zero-step entrance at grade-level from the street, a driveway, garage, or an alley connecting to a 36 inch (914.4 mm) wide door.
2. Doors to kitchens, family rooms, living rooms, dining rooms and hallways on the ground level that are wide enough for wheelchair use.
3. At least one bathroom or half bath on ground level with sufficient room to allow a wheelchair to enter into the bathroom.

Exception: Where the grade-level floor plan does not include habitable rooms.

AV101.2 Application. Unless compliance is required by another law or regulation outside this code, compliance with this chapter is voluntary. Any owner who desires to comply with this chapter shall so advise the *building official* when the plans for the residence are filed, so that conformity with this chapter may be considered in the plan review and inspection process.

SECTION AV102

ZERO STEP ENTRANCE

AV102.1 Route. A 36 inch wide *accessible* route to the residence shall be provided by a smooth uninterrupted surface with slope not to exceed 1:12.

AV102.2 Ramp slope and rise. The least possible slope shall be used for any ramp. The maximum slope of a ramp in new construction shall be 1:12. The maximum rise for any run shall be 30 inches (762 mm).

AV102.3 Special technical provisions for ramps. Curb ramps and interior or exterior ramps to be constructed on sites where space limitations prohibit the use of a 1:12 slope or less may have slopes and rises as follows:

1. A slope between 1:10 and 1:12 is allowed for a maximum rise of 6 inches (152.4 mm).
2. A slope between 1:8 and 1:10 is allowed for a maximum rise of 3 inches (76.2 mm). A slope steeper than 1:8 is not allowed.

SECTION AV103

DOORS

AV103.1 Clear width. One exterior doorway that connects with the zero-step entrance, one bathroom doorway, and any kitchen, family room, living room, dining room or hallway doorways on grade-level shall have a minimum clear opening of 32 inches (812.8 mm) with the door open

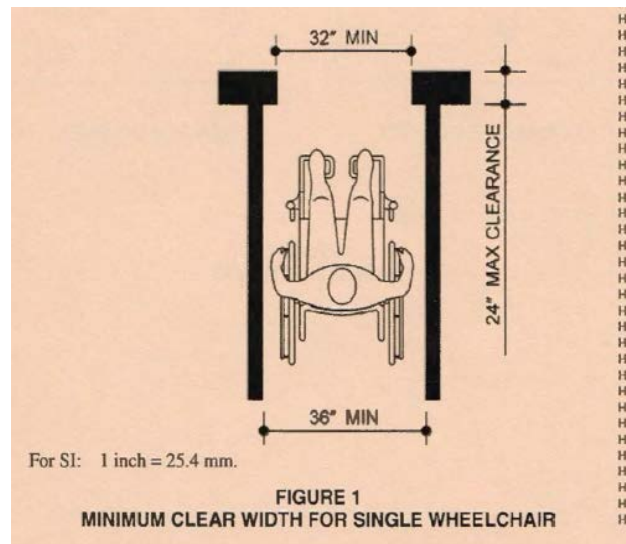
90 degrees, measured between the face of the door and the opposite stop. Where the door opens more than 90 degrees the clear opening shall be measured between the stops on both sides.

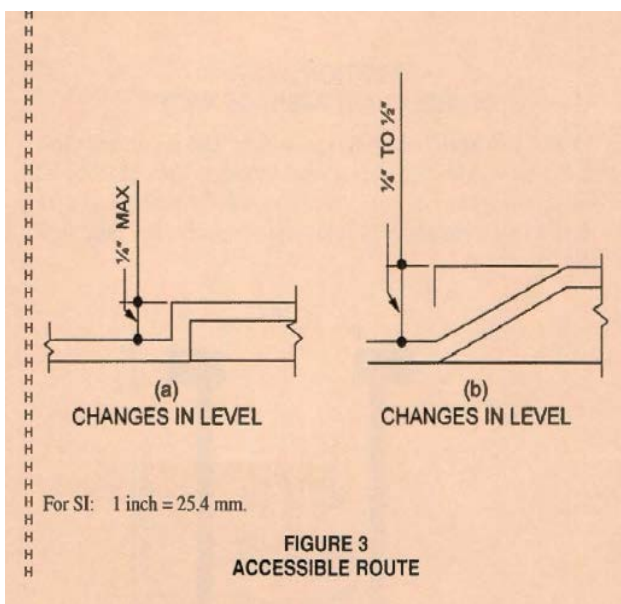
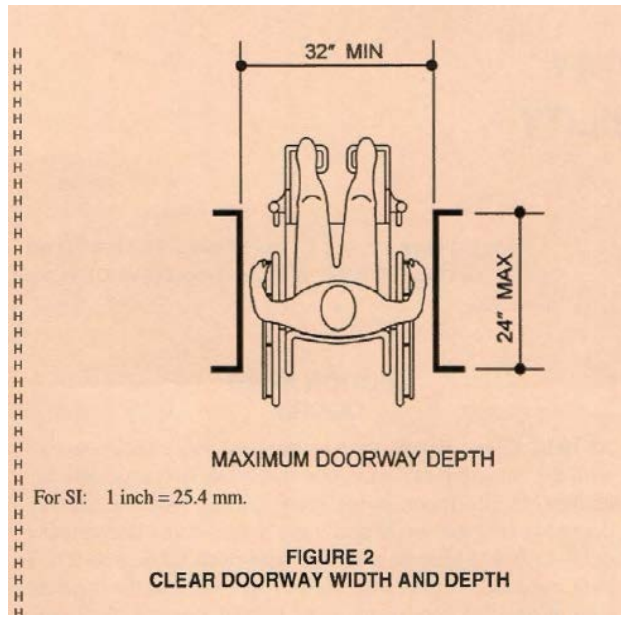
AV103.2 Thresholds at doorways. Thresholds at doorways shall not exceed $\frac{3}{4}$ inch (19 mm) in height for exterior sliding doors or $\frac{1}{2}$ inch (13 mm) for other types of doors. Raised thresholds and floor level changes at accessible doorways shall be beveled with a slope no greater than 1:2.

SECTION AV104 **WHEELCHAIR PASSAGE WIDTH**

AV104.1 Wheelchair passage width. The minimum clear width for single grade-level wheelchair passage shall be 32 inches (812.8 mm) at a point not to exceed 24 inches (609.6 mm) and 36 inches (914.4 mm) continuously (see Figure 1 and 2).

AV104.2 Changes in level. Changes in level up to $\frac{1}{4}$ inch (6 mm) may be vertical and without edge treatment (see Figure 3(a)). Changes in level between $\frac{1}{4}$ inch and $\frac{1}{2}$ inch (6 mm and 13 mm, respectively) shall be beveled with a slope no greater than 1:2 (see Figure 3(b)). Changes in level greater than $\frac{1}{2}$ inch (13 mm) shall be accomplished by means of a ramp that complies with Section AV102.





Houston Amendments to the *2018 International Swimming Pool and Spa Code*



Adopted by Ord. No. 2021-1037¹

Passed December 1, 2021²

Effective April 1, 2022³

1. The City Secretary shall insert the number of the adopting ordinance.

2. The City Secretary shall insert the date passage and approval of the adopting ordinance.

3. The City Secretary shall insert the effective date of the adopting ordinance.

CHAPTER 1

SCOPE AND ADMINISTRATION

User note:

About this chapter: Chapter 1 establishes the limits of applicability of this code and describes how the code is to be applied and enforced. Chapter 1 is in two parts: Part 1—Scope and Application (Sections 101–102) and Part 2—Administration and Enforcement (Sections 103–108). Section 101 identifies which buildings and structures come under its purview and references other I-Codes as applicable. Standards and codes are scoped to the extent referenced (see Section 102.8).

This code is intended to be adopted as a legally enforceable document and it cannot be effective without adequate provisions for its administration and enforcement. The provisions of Chapter 1 establish the authority and duties of the code official appointed by the authority having jurisdiction and also establish the rights and privileges of the design professional, contractor and property owner.

PART 1—SCOPE AND APPLICATION

SECTION 101 GENERAL

[A] 101.1 Title. These regulations shall be known as the City of Houston Swimming Pool and Spa Code of [NAME OF JURISDICTION], hereinafter referred to as “this code,” and also known as the Swimming Pool and Spa Code.

The City of Houston Construction Code collectively includes this volume and certain other codes, pamphlets, specifications and documents that are adopted in or by reference through the adopting ordinance, City of Houston Ordinance No. 2021-1037.⁴

[A] 101.2 Scope. The provisions of this code shall apply to the construction, alteration, movement, renovation, replacement, repair and maintenance of aquatic recreation facilities, pools and spas. The pools and spas covered by this code are either permanent or temporary, and shall be only those that are designed and manufactured to be connected to a circulation system and that are intended for swimming, bathing or wading.

101.2.1 Flotation tanks. Flotation tank systems intended for sensory deprivation therapy shall not be considered to be included in the scope of this code.

[A] 101.3 Intent. The purpose of this code is to establish minimum standards to provide a reasonable level of safety and protection of health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location and maintenance or use of pools and spas. The provisions of this code shall not apply to any activity for which local regulation is preempted by federal or state law.

[A] 101.4 Severability. If any section, subsection, sentence, clause or phrase of this code is for any reason

held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this code.

SECTION 102 APPLICABILITY

[A] 102.1 General. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall prevail-govern. Where, in any specific instance-case, different sections-of provisions of this code, including adopted appendices, specify different materials, different methods of construction, or other requirements that differ from those provided in the City Code or other volumes of the Construction Code, including adopted appendices, other than the Fire Code and its adopted appendices and standards, the most restrictive shall prevail-govern. Where, in any specific instance, the provisions of this code, including adopted appendices, specify different materials, different methods of construction, or other requirements that differ from those provided in the Fire Code, including adopted appendices and standards, and the building official and the fire marshal are unable to mutually reconcile the requirements by issuing a written interpretation, then either of them may refer the matter to the General Appeals Board created under the Building Code, which shall conduct a review of the matter and issue a written code interpretation based upon the apparent intent of the codes involved. Notwithstanding any other provision, interpretations that are issued by the General Appeals Board shall not be subject to further appeal. Wherever in this code reference is made to an appendix, the provisions in the appendix shall not apply unless specifically adopted.

[A] 102.2 Existing installations. Any pool or spa and related mechanical, electrical and plumbing systems lawfully in existence at the time of the adoption of this code shall be permitted to have their use and maintenance continued if the use, maintenance or repair

4. City Secretary shall insert number of adopting ordinance.

is in accordance with the original design and no hazard to life, health or property is created.

[A] 102.3 Maintenance. Pools and spas and related mechanical, electrical and plumbing systems, both existing and new, and parts thereof, shall be maintained in proper operating condition in accordance with the original design in a safe and sanitary condition, as well as the provisions of Chapter 43 of the City Code, whichever is more restrictive. Devices or safeguards that are required by this code shall be maintained in compliance with the edition of the code under which they were installed.

The owner or the owner's authorized agent shall be responsible for maintenance of systems. To determine compliance with this provision, the *code official* shall have the authority to require any system to be reinspected.

[A] 102.4 Additions, alterations or repairs. Additions, *alterations*, renovations or *repairs* to any pool, spa or related system shall conform to that required for a new system without requiring the existing systems to comply with the requirements of this code. Additions, alterations or repairs shall not cause existing systems to become unsafe, insanitary or overloaded.

Minor additions, alterations, renovations and repairs to existing systems shall be permitted in the same manner and arrangement as in the existing system, provided that such repairs or replacement are not hazardous and are *approved*.

[A] 102.5 Historic buildings. The provisions of this code relating to the construction, alteration, repair, enlargement, restoration, relocation or moving of pools, spas or systems shall not be mandatory for existing pools, spas or systems identified and classified by the state or local jurisdiction as part of a historic structure where such pools, spas or systems are judged by the *code official* to be safe and in the public interest of health, safety and welfare regarding any proposed construction, alteration, repair, enlargement, restoration, relocation or moving of such pool or spa.

[A] 102.6 Moved pools and spas. Except as determined by Section 102.2, systems that are a part of a pool, spa or system moved into or within the jurisdiction shall comply with the provisions of this code for new installations.

[A] 102.7 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter 11 and such codes and standards shall be considered to be part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and the referenced standards, the provisions of this code shall be the minimum requirements.

[A] 102.7.1 Application of the International Codes. Where the *International Residential Code* is referenced in this code, the provisions of the *International Residential Code* shall apply to related systems in detached one- and two-family dwellings and townhouses not more than three stories in height. Other related systems shall comply with the applicable International Code or referenced standard.

[A] 102.8 Requirements not covered by code. Any requirements necessary for the strength, stability or proper operation of an existing or proposed system, or for the public safety, health and general welfare, not specifically covered by this code shall be determined by the *code official*.

[A] 102.9 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

[A] 102.10 Application of references. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

PART 2—ADMINISTRATION AND ENFORCEMENT

SECTION 103 DEPARTMENT OF BUILDING SAFETY

[A] 103.1 Creation of enforcement agency agencies. ~~The department of building safety~~ *Building Code Enforcement Branch* is hereby created within the jurisdiction's department known as Houston Public Works, and the official in charge thereof shall be known as the *building official*. The Houston Health Department, created in *City Code* Section 21-2 also shall be an enforcement agency, and the official in charge thereof shall be known as the director of public health.

[A] 103.2 Appointment. The *code official* shall be appointed by the chief appointing authority of the jurisdiction.

[A] 103.3 Deputies. In accordance with the prescribed procedures of the jurisdiction and with the concurrence of the appointing authority, the *code official* shall have the authority to appoint a deputy *code official*, the related technical officers, inspectors, plans examiners and other employees. Such employees shall have powers as delegated by the *code official*.

[A] 103.4 Liability. ~~The *code official*, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally and is hereby relieved from personal liability for any damage accruing to persons or~~

~~property as a result of any act or by reason of an act or omission in the discharge of official duties. Except as otherwise provided by law, the *code official* shall not be personally liable in damages for any act or omission arising out of any official action taken to implement and enforce the provisions of this code. Additionally, except as otherwise provided by law, the *code official* shall not be personally liable in damages for any act or omission taken in the course and scope of employment. The City shall provide legal representation and indemnification to the *code official* pursuant to and in accordance with Chapter 2, Article X, of the *City Code*. his code shall not be construed to relieve from or lessen the responsibility of any person owning, operating, or controlling any building or structure for any damages to persons or property caused by defects, nor shall the code enforcement agency or its parent jurisdiction be held as assuming any such liability by reason of the inspections authorized by this code or any permits or certificates issued under this code.~~

~~**[A] 103.4.1 Legal defenses.** Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representatives of the jurisdiction until the final termination of the proceedings. The *code official* or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.~~

SECTION 104

DUTIES AND POWERS OF THE CODE OFFICIAL

[A] 104.1 General. The *code official* is hereby authorized and directed to enforce the provisions of this code. The *code official* shall have the authority to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies and procedures shall be in compliance with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code.

[A] 104.2 Applications and permits. The *code official* shall receive applications, review construction documents and issue permits for the erection, alteration, demolition and moving of pools, spas and related mechanical, electrical and plumbing systems. The *code official* shall inspect the premises for which such permits have been issued and enforce compliance with the provisions of this code.

[A] 104.3 Notices and orders. The *code official* shall issue necessary notices or orders to ensure compliance with this code.

[A] 104.4 Inspections. The *code official* shall make the required inspections, or the *code official* shall have the

authority to accept reports of inspection by *approved* agencies or individuals. Reports of such inspections shall be in writing and be certified by a responsible officer of such *approved* agency or by the responsible individual. The *code official* is authorized to engage such expert opinion as deemed necessary to report on unusual technical issues that arise, subject to the approval of the appointing authority.

[A] 104.5 Identification. The *code official* shall carry proper identification when inspecting structures or premises in the performance of duties under this code.

[A] 104.6 Right of entry. Where it is necessary to make an inspection to enforce the provisions of this code, or where the *code official* has reasonable cause to believe that there exists in a structure or on a premises a condition that is contrary to or in violation of this code that makes the structure or premises unsafe, dangerous or hazardous, the *code official* is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises is unoccupied, the *code official* shall first make a reasonable effort to locate the owner, the owner's authorized agent or other person having charge or control of the structure or premises and request entry. If entry is refused, the *code official* shall have recourse to the remedies provided by law to secure entry.

When, due to an emergency, entry is necessary to protect a person from imminent harm or loss of life, or when the *code official* has obtained a proper inspection warrant or other remedy provided by law to secure entry, an owner, occupant, or person in charge of any building or premise shall promptly permit entry by the *code official* for the purpose of inspection and examination pursuant to this code.

[A] 104.7 Department records. The *code official* shall keep official records of applications received, permits and certificates issued, fees collected, reports of inspections, and notices and orders issued. Such records shall be retained in the official records for the period required for retention of public records.

[A] 104.8 Modifications. Where there are practical difficulties involved in carrying out the provisions of this code, the *code official* shall have the authority to grant modifications for individual cases, upon application of the owner or owner's authorized agent, provided that the *code official* shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen sustainability, health, accessibility, life safety and structural requirements. The details of action granting modifications shall be recorded and entered in the files

of Building Code Enforcement the department of building safety.

[A] 104.9 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any design or material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material, design or method of construction shall be *approved* where the *code official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code in quality, strength, effectiveness, durability and safety.

Where the alternative material, design or method of construction is not *approved*, the *code official* shall respond in writing, stating the reasons why the alternative was not *approved*.

[A] 104.10 Required testing. Where there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the *code official* shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction.

[A] 104.10.1 Test methods. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the *code official* shall approve the testing procedures.

[A] 104.10.2 Testing agency. Tests shall be performed by an *approved* agency.

[A] 104.10.3 Test reports. Reports of tests shall be retained by the *code official* for the period required for retention of public records.

[A] 104.11 Alternative engineered design. The design, documentation, inspection, testing and approval of an alternative engineered design shall comply with Sections 104.11.1 through 104.11.6.

[A] 104.11.1 Design criteria. An alternative engineered design shall conform to the intent of the provisions of this code and shall provide an equivalent level of quality, strength, effectiveness, durability and safety. Material, equipment or components shall be designed and installed in accordance with the manufacturer's instructions.

[A] 104.11.2 Submittal. The registered design professional shall indicate on the permit application that the system is an alternative engineered design. The permit and permanent permit records shall indicate that an alternative engineered design was part of the *approved* installation.

[A] 104.11.3 Technical data. The registered design professional shall submit sufficient technical data to substantiate the proposed alternative engineered design and to prove that the performance meets the intent of this code.

[A] 104.11.4 Construction documents. The registered design professional shall submit to the *code official* ~~two complete sets of~~ signed and sealed construction documents for the alternative engineered design through the alternate method review process.

[A] 104.11.5 Design approval. Where the *code official* determines that the alternative engineered design conforms to the intent of this code, the system shall be *approved*. If the alternative engineered design is not *approved*, the *code official* shall notify the registered design professional in writing, stating the reasons why the alternative was not *approved*.

[A] 104.11.6 Inspection and testing. The alternative engineered design shall be tested and inspected in accordance with the requirements of Section 106.12.

[A] 104.12 Material and equipment reuse. Materials, equipment and devices shall not be reused unless such elements have been reconditioned, tested, placed in good and proper working condition and *approved*.

SECTION 105 PERMITS

[A] 105.1 When required. Any owner, or owner's authorized agent who desires to construct, enlarge, alter, repair, move, or demolish a pool or spa or to erect, install, enlarge, alter, repair, remove, convert or replace any system, the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the *code official* and obtain the required permit for the work, and no person shall cause, suffer or permit the same such work to be done unless a separate permit for each building or structure has first been obtained.

[A] 105.2 Application for permit. Each application for a permit, with the required fee, shall be filed with the *code official* on a form furnished for that purpose and shall contain a general description of the proposed work and its location. The application shall be signed by the owner or the owner's authorized agent. The permit application shall contain such other information required by the *code official*.

[A] 105.3 Construction documents. Construction documents, engineering calculations, diagrams and other such data shall be submitted in accordance with the authority having jurisdiction ~~two or more sets with~~ each application for a permit. The *code official* shall require construction documents, computations and specifications to be prepared and designed by a registered design professional where required by state

law. Construction documents shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code, City Code chapter 43, and other applicable State and Local Laws, whichever is more restrictive.

[A] 105.4 Time limitation of application. An application for which no permit is issued within 180 days following the date of application shall become inactive, and plans and other data submitted for review thereafter shall be returned to the applicant or destroyed by the building official. The building official is authorized to grant one or more extensions of time for additional periods not to exceed 180 days each, for a maximum of two years from the date of the original application, upon written request and justifiable cause demonstrated by the applicant. If an application for permit does not result in a building permit within two years after the date of original application the permit application shall expire. In order to renew action on an application after expiration, the applicant shall submit a new permit application and plans and shall pay a new plan review fee. An application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing unless such application has been pursued in good faith or a permit has been issued; except that the code official is authorized to grant one or more extensions of time for additional periods not exceeding 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.

[A] 105.5 Permit issuance. The application, construction documents and other data filed by an applicant for permit shall be reviewed by the *code official*. If the *code official* finds that the proposed work conforms to the requirements of this code and laws and ordinances applicable thereto, and that the fees specified in Section 105.6 have been paid, a permit shall be issued to the applicant.

[A] 105.5.1 Approved construction documents.

When the *code official* issues the permit where construction documents are required, the construction documents shall be endorsed in writing and stamped "APPROVED." Such *approved* construction documents shall not be changed, modified or altered without authorization from the *code official*. Work shall be done in accordance with the *approved* construction documents.

The *code official* shall have the authority to issue a permit for the construction of a part of a system before the entire construction documents for the whole system have been submitted or *approved*, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holders of such permit shall proceed at their own risk without assurance that the permit for the entire system will be granted.

[A] 105.5.2 Validity. The issuance of a permit or approval of construction documents shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or any other ordinance of the jurisdiction. Any permit presuming to give authority to violate or cancel the provisions of this code shall not be valid.

The issuance of a permit based on construction documents and other data shall not prevent the *code official* from thereafter requiring the correction of errors in said construction documents and other data or from preventing building operations being carried on thereunder where in violation of this code or of other ordinances of this jurisdiction.

A permit shall be valid only for work performed under the permit holder on the application. A new permit must be obtained if the permit holder is no longer responsible for the work performed. Provided that the code official has not issued a refund or given written authority to transfer the permit from the original permit holder, the cost of the new permit shall be charged at the rate listed for the minimum fee stated in the city fee schedule. In the case of the death of the original permit holder, and after the new permit holder files a timely request within 45 days, the permit will be transferred to the new permit holder at no fee except for the administrative fee established in the city fee schedule. Applicants requiring a re-permit who fail to re-permit any applicable work within the time frames established by this code shall be subject to the permit fees established in this Code and the city fee schedule based on the remaining construction and uninspected work, unless a specific code provision indicates otherwise. Approved plans are issued to the owner and the owner's authorized agent listed on the permit associated with the plans.

[A] 105.5.3 Expiration. Every permit issued shall become ~~invalid~~ inactive unless the work authorized by such permit is commenced within 180 days after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. The *code official* is authorized to grant, in writing, one or more extensions of time, for a period not more than 180 days. The extension shall be requested in writing and justifiable cause demonstrated.

If work is not commenced under a permit within two years after the date of issuance or is abandoned at any time for a period of two years, the permit shall expire. In order to recommence work under an expired permit, the permit holder shall pay the full permit fee applicable and submit plans that comply with this code for the previously uninspected portion of the work.

Exception: For the purpose of issuing a certificate of occupancy or a certificate of compliance, the code

official may, upon request, reactivate a permit and perform a final inspection of work.

[A] 105.5.4 Extensions. Any permittee holding an unexpired permit shall have the right to apply for an extension of the time within which the permittee will commence work under that permit when work is unable to be commenced within the time required by this section for good and satisfactory reasons. The *code official* shall extend the time for action by the permittee for a period not exceeding 180 days if there is reasonable cause. The fee for an extension shall be one-half the amount required for a new permit for such work.

[A] 105.5.5 Suspension or revocation of permit. The *code official* shall suspend or revoke a permit or approval issued under the provisions of this code in case of any false statement or misrepresentation of fact in the application or on the construction documents on which the permit or approval was based. Prior to taking such action, the *code official* shall provide notice of a right to a hearing on the matter pursuant to Section 117 of the *Building Code*.

[A] 105.5.6 Retention of construction documents. ~~One set of~~ The approved construction documents shall may be retained by the *code official* for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. One set of *approved* construction documents shall be returned to the applicant, and said set shall be printed and kept on the site of the building or work at all times during which the work authorized thereby is in progress. Approved plans shall be available to the code official during all inspections.

[A] 105.6 Fees. A permit shall not be valid until the fees prescribed by law have been paid. An amendment to a permit shall not be released until the additional fee, if any, has been paid.

[A] 105.6.1 Work commencing before permit issuance. ~~Any~~ When any person who commences any work on a system before obtaining the necessary permits, the work shall be subject to an investigation by the code official or the health officer, for which that person shall be responsible for payment of a fee as indicated in the adopted fee schedule and would be in addition to the required permit fees, equal to the amount of the permit fee required by this code and shall be charged in addition to the permit fee required by this code.

[A] 105.6.2 Fee schedule. The fees for work shall be as indicated in the ~~following schedule~~ city fee schedule.

[JURISDICTION TO INSERT APPROPRIATE SCHEDULE]

[A] 105.6.3 Fee refunds. ~~The code official shall authorize the refunding of fees as follows: may authorize refunding of any fee paid hereunder that was erroneously paid or collected due to an error by one or more city employees. This provision shall not be applicable if the error occurred because of incorrect information provided by the applicant.~~

The code official may authorize the refunding of not more than 90 percent of the amount in excess of the minimum permit fee paid when no work has been done under a permit issued in accordance with this code. If work has been done under the permit, no refund shall be authorized. The originally paid administrative fee and the plan review portion of the permit fee shall be nonrefundable.

The code official shall not authorize a refund of any fee paid except on written application filed by the original permit holder or authorized successor in the event of the death or incapacity of the original permit holder not later than 180 calendar days after the date of fee payment.

- ~~1. The full amount of any fee paid hereunder that was erroneously paid or collected.~~
- ~~2. Not more than [SPECIFY PERCENTAGE] percent of the permit fee paid when no work has been done under a permit issued in accordance with this code.~~
- ~~3. Not more than [SPECIFY PERCENTAGE] percent of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any plan review effort has been expended.~~

~~The code official shall not authorize the refunding of any fee paid except upon written application filed by the original permittee not later than 180 days after the date of fee payment.~~

SECTION 106 INSPECTIONS

[A] 106.1 General. Construction or work for which a permit is required shall be subject to inspection by the ~~code building official as well as an inspection by the health officer~~ pursuant to *City Code* section 43-9(g) and such construction or work shall remain visible and able to be accessed for inspection purposes until *approved*. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes. Neither the *code official* nor the jurisdiction shall be liable

for expense entailed in the removal or replacement of any material required to allow inspection.

[A] 106.2 Preliminary inspection. Before issuing a permit, the *code official* is authorized to examine or cause to be examined buildings, structures and sites for which an application has been filed.

[A] 106.3 Required inspections and testing. Pool and spa installations or alterations thereto, including equipment, piping, and appliances related thereto, shall be inspected by the *code official* to ensure compliance with the requirements of this code.

[A] 106.4 Other inspections. In addition to the inspections specified in Sections 106.2 and 106.3, the *code official* is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of this code and other laws that are enforced.

[A] 106.5 Inspection request. It shall be the duty of the holder of the permit or their duly authorized agent to notify the *code official* when work is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspections of such work that are required by this code.

[A] 106.6 Approval required. Work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the *code official*. The *code official*, upon notification, shall make the requested inspection and shall either indicate the portion of the construction that is satisfactory as completed, or notify the permit holder or his or her agent wherein the same fails to comply with this code. Any portions that do not comply shall be corrected and such portion shall not be covered or concealed until authorized by the *code official*.

[A] 106.7 Approved agencies. Test reports submitted to the *code official* for consideration shall be developed by *approved* agencies that have satisfied the requirements as to qualifications and reliability.

[A] 106.8 Evaluation and follow-up inspection services. Prior to the approval of a closed, prefabricated system and the issuance of a permit, the *code official* shall require the submittal of an evaluation report on each prefabricated system indicating the complete details of the system, including a description of the system and its components, the basis on which the system is being evaluated, test results and similar information, and other data as necessary for the *code official* to determine conformance to this code.

[A] 106.9 Evaluation service. The *code official* shall designate the evaluation service of an *approved* agency as the evaluation agency, and review such agency's evaluation report for adequacy and conformance to this code.

[A] 106.10 Follow-up inspection. Except where ready access is provided to systems, service equipment and accessories for complete inspection at the site without disassembly or dismantling, the *code official* shall conduct the frequency of in-plant inspections necessary to ensure conformance to the *approved* evaluation report or shall designate an independent, *approved* inspection agency to conduct such inspections. The inspection agency shall furnish the *code official* with the follow-up inspection manual and a report of inspections on request, and the system shall have an identifying label permanently affixed to the system indicating that factory inspections have been performed.

[A] 106.11 Test and inspection records. Required test and inspection records shall be available to the *code official* at all times during the fabrication of the system and the installation of the system, or such records as the *code official* designates shall be filed.

[A] 106.12 Special inspections. Special inspections of alternative engineered design systems shall be conducted in accordance with Sections 106.12.1 and 106.12.2.

[A] 106.12.1 Periodic inspection. The registered design professional or designated inspector shall periodically inspect and observe the alternative engineered design to determine that the installation is in accordance with the *approved* construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. Records shall be kept of inspections.

[A] 106.12.2 Written report. The registered design professional shall submit a final report in writing to the *code official* upon completion of the installation, certifying that the alternative engineered design conforms to the *approved* construction documents. A notice of approval for the system shall not be issued until a written certification has been submitted.

[A] 106.13 Testing. Systems shall be tested as required by this code. Tests shall be made by the permit holder and the *code official* shall have the authority to witness such tests.

[A] 106.14 New, altered, extended or repaired systems. New systems and parts of existing systems that have been altered, extended or repaired shall be tested as prescribed by this code.

[A] 106.15 Equipment, material and labor for tests. Equipment, material and labor required for testing a system or part thereof shall be furnished by the permit holder.

[A] 106.16 Reinspection and testing. Where any work or installation does not pass any initial test or inspection, the necessary corrections shall be made to comply with this code. The work or installation shall then be resubmitted to the *code official* for inspection and testing.

When the code official calls for an inspection of work or corrections, and such work is not completed or such corrections are not made, a reinspection fee may be assessed for each inspection or reinspection.

This section is not to be interpreted as requiring inspection fees the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or reinspection.

Reinspection fees may be assessed when the inspection record card is not posted or otherwise available on the work site, when the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, or for deviating from plans requiring the approval of the code official.

To obtain a reinspection, the applicant shall make a request and pay the reinspection fee in accordance with the city fee schedule.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

[A] 106.17 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the *code official*.

[A] 106.17.1 Revocation. The *code official* is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of the incorrect information supplied, or where it is determined that the building or structure, premise, system or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.

[A] 106.18 Temporary connection. The *code official* shall have the authority to authorize the temporary connection of the building or system to the utility source for the purpose of testing systems.

[A] 106.19 Connection of service utilities. A person shall not make connections from a utility, source of energy, fuel, power, water system or sewer system to any building or system that is regulated by this code for which a permit is required until authorized by the *code official*.

SECTION 107 VIOLATIONS

[A] 107.1 Unlawful acts. It shall be unlawful for any person, firm or corporation to erect, construct, alter, repair, remove, demolish or utilize any system, or cause same to be done, in conflict with or in violation of any of the provisions of this code.

Any person who shall violate any provision of this chapter shall be guilty of a misdemeanor and shall, upon conviction thereof, be punished by a fine of not less than \$500.00 and not more than \$2,000.00 for each violation. Each day in which any violation continues shall constitute a separate offense. To the extent that any violation of any provision of this chapter also constitutes a violation of state law, then it shall be punishable as provided by the applicable state law.

[A] 107.2 Notice of violation. The *code official* shall serve a notice of violation or order to the person responsible for the erection, installation, alteration, extension, repair, removal or demolition of work in violation of the provisions of this code, or in violation of a detail statement or the *approved* construction documents there under, or in violation of a permit or certificate issued under the provisions of this code. Such order shall direct the discontinuance of the illegal action or condition and the abatement of the violation.

[A] 107.3 Prosecution of violation. If the notice of violation is not complied with promptly, the *code official* shall request the legal counsel of the jurisdiction to institute the appropriate proceeding at law or in equity to restrain, correct or abate such violation, or to require the removal or termination of the unlawful pool or spa in violation of the provisions of this code or of the order or direction made pursuant thereto.

[A] 107.4 Violation penalties. Any person who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter or repair a pool or spa in violation of the *approved* construction documents or directive of the *code official*, or of a permit or certificate issued under the provisions of this code, shall be subject to penalties as prescribed in Section 114.1 of the Building Code, guilty of a [SPECIFY OFFENSE], punishable by a fine of not more than [AMOUNT] dollars or by imprisonment not exceeding [NUMBER OF DAYS], or both such fine and imprisonment. Each day that a violation continues after due notice has been served shall be deemed a separate offense.

[A] 107.5 Stop work orders. Upon notice from the *code official*, work on any system that is being performed contrary to the provisions of this code or in a dangerous or unsafe manner shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, or to the owner's authorized agent, or to the person performing the work. The notice shall state the conditions under which work is authorized to resume. Where an emergency exists, the *code official* shall not be required to give a written notice prior to stopping the work. Any person who shall continue any work in or about the structure after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition,

shall be liable to a fine of not less than **[AMOUNT]** dollars or more than **[AMOUNT]** dollars.

At the time a stop work order is issued, the person performing the work and the permit holder shall also be given notice of a right to a hearing on the matter by the code official, who shall deliver the notice to the persons performing the work, if present at the site, or otherwise conspicuously post the notice at the site. Upon request, a hearing shall be held within three business days unless the permit holder or person who was doing the work requests an extension of time. Any stop work order that has been issued shall remain in effect pending any hearing that has been requested unless the stop work order is withdrawn by the code official.

[A] 107.6 Abatement of violation. The imposition of the penalties herein prescribed shall not preclude the legal officer of the jurisdiction from instituting appropriate action to prevent violation, or to prevent illegal use of a pool or spa, or to stop an illegal act, conduct, business or utilization of the plumbing on or about any premises.

[A] 107.7 Unsafe systems. Any system regulated by this code that is unsafe or that constitutes a fire or health hazard, insanitary condition, or is otherwise dangerous to human life is hereby declared unsafe. Any use of a system regulated by this code constituting a hazard to safety, health or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster, damage or abandonment is hereby declared an unsafe use. Any such unsafe system is hereby declared to be a public nuisance and shall be abated by repair, rehabilitation, demolition or removal.

[A] 107.7.1 Authority to condemn a system. Where the *code official* determines that any system, or portion thereof, regulated by this code has become hazardous to life, health or property or has become insanitary, the *code official* shall order in writing that such system either be removed or restored to a safe or sanitary condition. A time limit for compliance with such order shall be specified in the written notice. A person shall not use or maintain a defective system after receiving such notice.

Where such a system is to be disconnected, written notice as prescribed in Section 107.2 shall be given. In cases of immediate danger to life or property, such disconnection shall be made immediately without such notice.

[A] 107.7.2 Authority to disconnect service utilities. The *code official* shall have the authority to authorize disconnection of utility service to the pool or spa regulated by the technical codes in case of an emergency, where necessary, to eliminate an immediate danger to life or property. Where possible, the owner or the owner's authorized agent and occupant of the building where the pool or spa is located shall be notified of the decision to disconnect utility service prior to taking such action. If not notified

prior to disconnecting, the owner, the owner's authorized agent or the occupant of the building shall be notified in writing, as soon as practical thereafter.

[A] 107.7.3 Connection after order to disconnect. A person shall not make connections from any energy, fuel, power supply or water distribution system, or supply energy, fuel or water to any equipment regulated by this code that has been disconnected or ordered to be disconnected by the *code official* or the use of which has been ordered to be discontinued by the *code official* until the *code official* authorizes the reconnection and use of such equipment.

When any system is maintained in violation of this code, and in violation of any notice issued pursuant to the provisions of this section, the *code official* shall institute any appropriate action to prevent, restrain, correct or abate the violation.

SECTION 108 MEANS OF APPEAL

[A] 108.1 General. Except as provided below for mechanical, plumbing, or operating issues, the General Appeals Board, in accordance with the provisions of the Building Code, shall hear and decide appeals of orders, decisions or determinations made by the building official relative to the application and interpretation of this code. **Application for appeal.** Any person shall have the right to appeal a decision of the *code official* to the board of appeals. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted there under have been incorrectly interpreted, the provisions of this code do not fully apply, or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the *code official* within 20 days after the notice was served.

[A] 108.2 Mechanical. The Mechanical Code Review Board or the Boiler Code Review and Licensing Board shall hear and decide appeals of orders, decisions or determinations made by the *building official* relative to the application and interpretations of this code relating to mechanical matters. (See Sections 120 and 121 of the *Mechanical Code*.) **Membership of board.** The board of appeals shall consist of five members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new member shall serve for 5 years or until a successor has been appointed.

[A] 108.2.1 Qualifications. The board of appeals shall consist of five individuals, one from each of the following professions or disciplines:

1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.

2. Registered design professional with structural engineering or architectural experience.
3. Registered design professional with mechanical and plumbing engineering experience; or a mechanical and plumbing contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.
4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.
5. Registered design professional with pool or spa experience; or a contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.

[A] 108.2.2 Alternate members. The chief appointing authority shall appoint two alternate members who shall be called by the board chairman to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years or until a successor has been appointed.

[A] 108.2.3 Chairman. The board shall annually select one of its members to serve as chairman.

[A] 108.2.4 Disqualification of member. A member shall not hear an appeal in which that member has any personal, professional or financial interest.

[A] 108.2.5 Secretary. The chief administrative officer shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of proceedings in the office of the chief administrative officer.

[A] 108.2.6 Compensation of members. Compensation of members shall be determined by law.

[A] 108.3. Plumbing. The Electrical Board shall hear and decide appeals of orders, decisions or determinations made by the *building official* relative to the application and interpretations of this code relating to plumbing and fuel gas matters. (See Section 102.3 of the

Plumbing Code.) **[A] 108.3 Notice of meeting.** The board shall meet upon notice from the chairman, within 40 days of the filing of an appeal or at stated periodic meetings.

[A] 108.4. Electrical. The Electrical Board shall hear and decide appeals of orders, decisions or determinations made by the *building official* relative to the application and interpretations of this code relating to electrical matters. (See Section 203 of the *Electrical Code*.) **[A] 108.4 Open hearing.** Hearings before the board shall be open to the public. The appellant, the appellant's representative, the *code official* and any person whose interests are affected shall be given an opportunity to be heard.

[A] 108.4.1 Procedure. The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received.

[A] 108.5 Operating. Appeals regarding operation of aquatic structures or enclosures shall be handled as provided in *City Code* Chapter 43. **[A] 108.5 Postponed hearing.** When five members are not present to hear an appeal, either the appellant or the appellant's representative shall have the right to request a postponement of the hearing.

[A] 108.6 Board decision. The board shall modify or reverse the decision of the *code official* by a concurring vote of three members.

[A] 108.6.1 Resolution. The decision of the board shall be by resolution. Certified copies shall be furnished to the appellant and to the *code official*.

[A] 108.6.2 Administration. The *code official* shall take immediate action in accordance with the decision of the board.

[A] 108.7 Court review. Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.

CHAPTER 2

DEFINITIONS

User note:

About this chapter: Codes, by their very nature, are technical documents. Every word, term and punctuation mark can add to or change the meaning of a technical requirement. It is necessary to maintain a consensus on the specific meaning of each term contained in the code. Chapter 2 performs this function by stating clearly what specific terms mean for the purpose of the code.

SECTION 201 GENERAL

201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

201.2 Interchangeability. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

201.3 Terms defined in other codes. Where specific rules of construction or terms are not addressed or defined in this code and are addressed or defined in the City Code or another volume of the Construction Code, International Building Code, International Energy Conservation Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, or International Residential Code such terms or specific constructions herein shall have the meanings ascribed to them ~~as in those codes~~ other volumes, as applicable to the construction and proposed scope of work hereunder.

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

SECTION 202 DEFINITIONS

ACCESSIBLE. Signifies access that requires the removal of an access panel or similar removable obstruction.

ACTIVITY POOL. A pool designed primarily for play activity that uses constructed features and devices including lily pad walks, flotation devices, small slide features, and similar attractions.

AIR INDUCTION SYSTEM. A system whereby a volume of air is introduced into hollow ducting built into a spa floor, bench, or hydrotherapy jets.

[A] ALTERATION. Any construction or renovation to an existing pool or spa other than repair.

[A] APPROVED. Acceptable to the *code official* or *authority having jurisdiction*.

[A] APPROVED AGENCY. An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, or furnishing product certification where such agency has been *approved by the code official*.

AQUATIC RECREATION FACILITY. A facility that is designed for free-form aquatic play and recreation. The facilities may include, but are not limited to, wave or surf action pools, leisure rivers, sand bottom pools, vortex pools, activity pools, inner tube rides, body slides and interactive play attractions.

AUTHORITY HAVING JURISDICTION. For the purpose of this code shall mean the City of Houston and its authorized officials, including but not limited to:

1. The health officer, which means the director of public health or the director's duly authorized designees, and
2. The building official, which means the director of Houston Public Works or such other person as the said director may designate to act as the chief construction code enforcement official of the city and the said official's designees.

BACKWASH. The process of cleansing the filter medium or elements by the reverse flow of water through the filter.

BACKWASH CYCLE. The time required to backwash the filter medium or elements and to remove debris in the pool or spa filter.

BARRIER. A permanent fence, wall, building wall, or combination thereof that completely surrounds the pool or spa and obstructs the access to the pool or spa. The term "permanent" shall mean not being able to be removed, lifted, or relocated without the use of a tool.

BATHER. A person using a pool, spa or hot tub and adjoining deck area for the purpose of water sports, recreation, therapy or related activities.

BATHER LOAD. The number of persons in the pool or spa water at any given moment or during any stated period of time.

BEACH ENTRY. Sloping entry starting above the waterline at deck level and ending below the waterline. The presence of sand is not required. Also called "zero entry."

BUILDING CODE. The *City of Houston Building Code*, as adopted and amended by this *jurisdiction*.

BUILDING OFFICIAL. The director of Houston Public Works or the duly authorized representative designated by the director to act as the chief construction code enforcement official of the jurisdiction; also known as *chief building official*. The term also includes the Houston Airport Systems building official who may be designated by the building official to perform *Construction Code* permitting and enforcement activities on Houston Airport Systems premises.

CHEMICAL FEEDER. A floating or mechanical device for adding a chemical to pool or spa water.

CIRCULATION EQUIPMENT. The components of a circulation system.

CIRCULATION SYSTEM. The mechanical components that are a part of a recirculation system on a pool or spa. Circulation equipment may be, but is not limited to, categories of pumps, hair and lint strainers, filters, valves, gauges, meters, heaters, surface skimmers, inlet fittings, outlet fittings and chemical feeding devices. The components have separate functions, but where connected to each other by piping, perform as a coordinated system for purposes of maintaining pool or spa water in a clear and sanitary condition.

CITY CODE. The *Code of Ordinances* of the City of Houston, Texas.

CITY FEE SCHEDULE. The schedule of fees charged by the city for various permits, licenses, authorizations and services, which is maintained on the city's website.

[A] CODE OFFICIAL. The director of Houston Public Works and any inspector or other employee designated or appointed by that director or the director of the Houston Health Department or any inspector, health officer or other employee appointed by that director to administer and perform enforcement duties under this code, and Chapter 43 of the *City Code* and related laws. ~~The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative.~~

CONSTRUCTION CODE. Has the meaning ascribed in 1-2 of the *City Code*.

[A] CONSTRUCTION DOCUMENTS. Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining a building permit.

DECK. An area immediately adjacent to or attached to a pool or spa that is specifically constructed or installed for sitting, standing, or walking.

DEEP AREA. Water depth areas exceeding 5 feet (1524 mm).

DESIGN PROFESSIONAL. An individual who is registered or licensed to practice his or her respective design profession as defined by the statutory requirements of the professional registration or licensing laws of the state or jurisdiction in which the project is to be constructed.

DESIGN RATE OF FLOW. The rate of flow used for design calculations in a system.

DESIGN WATERLINE. The centerline of the *skimmer* or other point as defined by the designer of the pool or spa.

DIVING AREA. The area of a swimming pool that is designed for diving.

DIVING BOARD. A flexible board secured at one end that is used for diving such as a springboard or a jump board.

DIVING PLATFORM. A stationary platform designed for diving.

DIVING STAND. Any supporting device for a springboard, jump board or diving board.

ELECTRICAL CODE. The *City of Houston Electrical Code*, as adopted and amended by this *jurisdiction*.

EXERCISE SPA (Also known as a swim spa). Variants of a spa in which the design and construction includes specific features and equipment to produce a water flow intended to allow recreational physical activity including, but not limited to, swimming in place. Exercise spas can include peripheral jetted seats intended for water therapy, heater, circulation and filtration system, or can be a separate distinct portion of a combination spa/exercise spa and can have separate controls. These spas are of a design and size such that they have an unobstructed volume of water large enough to allow the 99th Percentile Man as specified in APSP 16 to swim or exercise in place.

EXISTING BUILDING CODE. The *City of Houston Existing Building Code* as adopted and amended by this *jurisdiction*.

EXISTING POOL OR SPA. A pool or spa constructed prior to the date of adoption of this code, or one for which a legal building permit has been issued.

FILTER. A device that removes undissolved particles from water by recirculating the water through a porous substance such as filter medium or elements.

FILTRATION. The process of removing undissolved particles from water by recirculating the water through a porous substance such as filter medium or elements.

FIRE CODE. The *City of Houston Fire Code*, as adopted and amended by this *jurisdiction*.

[BS] FLOOD HAZARD AREA. ~~The greater of the following two areas:~~

1. The area within a flood plain subject to a 1-percent or greater chance of flooding in any year.
2. The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.

FLUME. A trough-like or tubular structure, generally recognized as a water slide, that directs the path of travel and the rate of descent by the rider.

GUTTER. Overflow trough in the perimeter wall of a pool that is a component of the circulation system or flows to waste.

HAIR AND LINT STRAINER. A device attached on or in front of a pump to which the influent line (suction line) is connected for the purpose of entrapping lint, hair, or other debris that could damage the pump.

HANDHOLD. That portion of a pool or spa structure or a specific element that is at or above the *design waterline* that users in the pool grasp onto for support.

HANDRAIL. A support device that is intended to be gripped by a user for the purpose of resting or steadying, typically located within or at exits to the pool or spa or as part of a set of steps.

HEALTH OFFICER. The director of the Houston Health Department or such other person as the said director may designate to administer and perform enforcement duties under this code, Chapter 43 of the *City Code*, and related laws.

HYDROTHERAPY JET. A fitting that blends air and water, creating a high-velocity turbulent stream of air enriched water.

INTERNATIONAL BUILDING CODE. Any reference herein to the *International Building Code* shall be construed as referring to the *City of Houston Building Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL ENERGY CONSERVATION CODE. Any reference herein to the *International Energy Conservation Code* shall be construed as referring to the *City of Houston Residential Energy Conservation Code* or the *City of Houston Commercial Energy Conservation Code*, both as adopted and amended by this *jurisdiction*.

INTERNATIONAL EXISTING BUILDING CODE. Any reference herein to the *International Existing Building Code* shall be construed as referring to the *City of Houston Existing Building Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL FIRE CODE. Any reference herein to the *International Fire Code* shall be construed as referring to the *City of Houston Fire Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL FUEL GAS CODE. Any reference herein to the *International Fuel Gas Code* shall be

construed as referring to the *City of Houston Plumbing Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL MECHANICAL CODE. Any reference herein to the *International Mechanical Code* shall be construed as referring to the *City of Houston Mechanical Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL PLUMBING CODE. Any reference herein to the *International Plumbing Code* shall be construed as referring to the *City of Houston Plumbing Code*, as adopted and amended by this *jurisdiction*.

INTERNATIONAL RESIDENTIAL CODE. Any reference herein to the *International Residential Code* shall be construed as referring to the *City of Houston Residential Code* adopted and amended by this *jurisdiction*.

JUMP BOARD. A manufactured diving board that has a coil spring, leaf spring, or comparable device located beneath the board that is activated by the force exerted by jumping on the board's end.

[A] JURISDICTION. The governmental unit that has adopted this code.

[A] LABEL. An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, and the name and identification of an *approved* agency and that indicates that the representative sample of the product or material has been tested and evaluated by an *approved* agency.

[A] LABELED. Equipment, materials or products to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, *approved* agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose *labeling* indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

LADDER. A structure for ingress and egress that usually consists of two long parallel side pieces joined at intervals by crosspieces such as treads.

Type A double access ladder. An "A-Frame" ladder that straddles the pool wall of an above-ground pool and provides ingress and egress and is intended to be removed when not in use.

Type B limited access ladder. An "A-Frame" ladder that straddles the pool wall of an above-ground/on-ground pool.

Type B ladders are removable and have a built-in feature that prevents entry to the pool when the pool is not in use.

Type C ladder. A “ground to deck” staircase ladder that allows access to an above-ground pool deck and has a built-in entry-limiting feature.

Type D in-pool ladder. Located in the pool to provide a means of ingress and egress from the pool to the deck.

Type E or F in-pool staircase ladder. Located in the pool to provide a means of ingress and egress from the pool to the deck.

LIFELINE. An anchored line thrown to aid in rescue.

[A] LISTED. Equipment, materials, products or services included in a list published by an organization acceptable to the *code official* and concerned with evaluation of products or services that maintains periodic inspection of production of *listed* equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

MAINTAINED ILLUMINATION. The value, in foot-candles or equivalent units, below which the average illuminance on a specified surface is not allowed to fall. *Maintained illumination* equals the initial average illuminance on the specified surface with new lamps, multiplied by the light loss factor (LLF), to account for reduction in lamp intensity over time.

MECHANICAL CODE. The City of Houston Mechanical Code, as adopted and amended by this jurisdiction.

NEGATIVE EDGE. See “Vanishing edge.”

NONENTRY AREA. An area of the deck from which entry into the pool or spa is prohibited.

ONGROUND STORABLE POOL. A pool that can be disassembled for storage or transport. This includes portable pools with flexible or nonrigid walls that achieve their structural integrity by means of uniform shape, a support frame or a combination thereof, and that can be disassembled for storage or relocation.

OVERFLOW GUTTER. The *gutter* around the top perimeter of the pool or spa, which is used to skim the surface.

[A] OWNER. Any person, agent, operator, entity, firm or corporation having any legal or equitable interest in the property;

or recorded in the official records of the state, county or municipality as holding an interest or title to the property; or otherwise having possession or control of the property, including the guardian of the estate of any such person, and the executor or administrator of the estate

of such person if ordered to take possession of real property by a court.

PARENT JURISDICTION The City of Houston and its authorized officials, including but not limited to:

1. The health officer, which means the director of public health or the director's duly authorized designees, and
2. The building official, which means the director of Houston Public Works or such other person as the said director may designate to act as the chief construction code enforcement official of the city and the said official's designees.

[A] PERMIT. An official document or certificate issued by the ~~authority having~~ *parent jurisdiction* that authorizes performance of a specified activity.

PLUMBING CODE. The City of Houston Plumbing Code, as adopted and amended by this jurisdiction.

POOL. See “Public swimming pool” and “Residential swimming pool.”

POWER SAFETY COVER. A pool cover that is placed over the water area, and is opened and closed with a motorized mechanism activated by a control switch.

PUBLIC SWIMMING POOL (Public Pool). A pool, other than a *residential* pool, that is intended to be used for swimming or bathing and is operated by an owner, lessee, operator, licensee or concessionaire, regardless of whether a fee is charged for use. Public pools shall be further classified and defined as follows:

Class A competition pool. A pool intended for use for accredited competitive aquatic events such as Federation Internationale De Natation (FINA), USA Swimming, USA Diving, USA Synchronized Swimming, USA Water Polo, National Collegiate Athletic Association (NCAA), or the National Federation of State High School Associations (NFHS).

Class B public pool. A pool intended for public recreational use that is not identified in the other classifications of public pools.

Class C semi-public pool. A pool operated solely for and in conjunction with lodgings such as hotels, motels, apartments or condominiums.

Class D-1 wave action pool. A pool designed to simulate breaking or cyclic waves for purposes of general play or surfing.

Class D-2 activity pool. A pool designed for casual water play ranging from simple splashing activity to the use of attractions placed in the pool for recreation.

Class D-3 catch pool. A body of water located at the termination of a manufactured waterslide attraction. The body of water is provided for the purpose of

terminating the slide action and providing a means for exit to a deck or walkway area.

Class D-4 leisure river. A manufactured stream of water of near-constant depth in which the water is moved by pumps or other means of propulsion to provide a river-like flow that transports bathers over a defined path that may include water features and play devices.

Class D-5 vortex pool. A circular pool equipped with a method of transporting water in the pool for the purpose of propelling riders at speeds dictated by the velocity of the moving stream of water.

Class D-6 interactive play attraction. A manufactured water play device or a combination of water-based play devices in which water flow volumes, pressures or patterns can be varied by the bather without negatively influencing the hydraulic conditions for other connected devices. These attractions incorporate devices or activities such as slides, climbing and crawling structures, visual effects, user-actuated mechanical devices and other elements of bather-driven and bather-controlled play.

Class E. Pools used for instruction, play or therapy and with temperatures above 86°F (30°C).

Class F. Class F pools are wading pools and are covered within the scope of this code as set forth in Section 405.

Public pools are either a diving or nondiving type. Diving types of public pools are classified into types as an indication of the suitability of a pool for use with diving equipment.

Types VI–IX. Public pools suitable for the installation of diving equipment by type.

Type O. A nondiving public pool.

RECESSED TREADS. A series of vertically spaced cavities in a pool or spa wall creating tread areas for step holes.

RECIRCULATION SYSTEM. See “Circulation system.”

[A] REPAIR. The reconstruction or renewal of any part of a pool or spa for the purpose of its maintenance or to correct damage.

RESIDENTIAL. For purposes of this code, *residential* applies to detached one- and two-family dwellings and townhouses not more than three stories in height.

RESIDENTIAL SWIMMING POOL (Residential Pool). A pool intended for use that is accessory to a *residential* setting and available only to the household and its guests. Other pools shall be considered to be public pools for purposes of this code.

Types I–V. *Residential* pools suitable for the installation of diving equipment by type.

Type O. A nondiving *residential* pool.

RETURN INLET. The aperture or fitting through which the water under positive pressure returns into a pool.

RING BUOY. A ring-shaped floating buoy capable of supporting a user, usually attached to a throwing line.

ROPE AND FLOAT LINE. A continuous line not less than 1/4 inch (6 mm) in diameter that is supported by buoys and attached to opposite sides of a pool to separate the deep and shallow ends.

RUNOUT. A continuation of water slide flume surface where riders are intended to decelerate and come to a stop.

SAFETY COVER. A structure, fabric or assembly, along with attendant appurtenances and anchoring mechanisms, that is temporarily placed or installed over an entire pool, spa or hot tub and secured in place after all bathers are absent from the water.

SHALL. The term, where used in the code, is construed as mandatory.

SHALLOW AREAS. Portions of a pool or spa with water depths less than 5 feet (1524 mm).

SKIMMER. A device installed in the pool or spa that permits the removal of floating debris and surface water to the filter.

SLIP RESISTANT. A surface that has been treated or constructed to significantly reduce the chance of a user slipping. The surface shall not be an abrasion hazard.

SLOPE BREAK. Occurs at the point where the slope of the pool floor changes to a greater slope.

SPA. A product intended for the immersion of persons in temperature-controlled water circulated in a closed system, and not intended to be drained and filled with each use. A spa usually includes a filter, an electric, solar or gas heater, a pump or pumps, and a control, and can include other equipment, such as lights, blowers, and water-sanitizing equipment.

Permanent residential spa. A spa, intended for use that is accessory to a *residential* setting and available to the household and its guests and where the water heating and water-circulating equipment is not an integral part of the product. The spa is intended as a permanent plumbing fixture and not intended to be moved.

Portable residential spa. A spa intended for use that is accessory to a *residential* setting and available to the household and its guests and where it is either self-contained or nonself-contained.

Public spa. A spa other than a permanent *residential* spa or portable *residential* spa that is intended to be used for bathing and is operated by an owner, licensee or concessionaire, regardless of whether a fee is charged for use.

Self-contained spa. A factory-built spa in which all control, water heating and water-circulating equipment is an integral part of the product. Self-contained spas may be permanently wired or cord connected.

Nonself-contained spa. A factory-built spa in which the water heating and circulating equipment is not an integral part of the product. Nonself-contained spas may employ separate components such as an individual filter, pump, heater and controls, or they can employ assembled combinations of various components.

SPRAY POOL. A pool or basin occupied by construction features that spray water in various arrays for the purpose of wetting the persons playing in the spray streams.

SUBMERGED VACUUM FITTING. A fitting intended to provide a point of connection for suction side automatic swimming pool, spa, and hot tub cleaners.

SUCTION OUTLET. A submerged fitting, fitting assembly, cover/grate and related components that provide a localized low-pressure area for the transfer of water from a swimming pool, spa or hot tub. Submerged suction outlets have been referred to as main drains.

SURFACE SKIMMING SYSTEM. A device or system installed in the pool or spa that permits the removal of floating debris and surface water to the filter.

SURGE CAPACITY. The storage volume in a surge tank, gutter, and plumbing lines.

SURGE TANK. A storage vessel within the pool recirculating system used to contain the water displaced by bathers.

SWIMOUT. An underwater seat area that is placed completely outside of the perimeter shape of the pool. Where located at the deep end, swimouts are permitted to be used as the deep-end means of entry or exit to the pool.

TUBE RIDE. A gravity flow attraction found at a waterpark designed to convey riders on an inner-tube-like device through a series of chutes, channels, flumes or pools.

TURNOVER RATE. The period of time, usually in hours, required to circulate a volume of water equal to the pool or spa capacity.

UNDERWATER LEDGE. A narrow shelf projecting from the side of a vertical structure whose dimensions are defined in the appropriate standard.

UNDERWATER SEAT. An underwater ledge that is placed completely inside the perimeter shape of the pool, generally located in the shallow end of the pool.

VANISHING EDGE. Water-feature detail in which water flows over the edge of not fewer than one of the pool walls and is collected in a catch basin. Also called "Negative edge."

WATERLINE. See "Design waterline."

WAVE POOL CAISSON. A large chamber used in wave generation. This chamber houses pulsing water and air surges in the wave generation process and is not meant for human occupancy.

ZERO ENTRY. See "Beach entry."

AMENDMENTS TO THE CODE OF ORDINANCES, HOUSTON, TEXAS:

1. Amend Section 1-1 to read as follows:

Sec. 1-1. How Code designated and cited.

The ordinances embraced in the following chapters and sections shall constitute and be designated the "Code of Ordinances, City of Houston, Texas," and may be so cited.

~~The City's *Construction Code*, and including the *Fire Code*, both constitutes a part of this Code and each is adopted herein by reference. The said two portions of this *Construction Code* are each is published by separate promulgation and they are is not set forth in this two-volume edition of the Code. Interested persons may contact the city secretary for purchase information.~~

2 Amend the definitions of "building official," "Construction Code," and "Fire Code," in Section 1-2 to read as follows:

Building official means the Director of Houston Public Works or such other person as the said director may designate to act as the chief *Construction Code* enforcement official of the city and the said official's designee. ~~The term relates primarily to those Houston Public Works employees who are engaged in the administration and enforcement of the City of Houston Construction Code and related laws.~~

**

Construction Code means the *City of Houston Construction Code*, as amended from time to time by the city council, which code consists of various texts setting forth requirements relating to building construction and safety, namely:

City of Houston Building Code, also known as the *Building Code*

City of Houston Electrical Code, also known as the *Electrical Code*

City of Houston Energy Conservation Code, also known as the *Energy Conservation Code*

City of Houston Existing Building Code, also known as the *Existing Building Code*

City of Houston Fire Code, also known as the *Fire Code*

City of Houston Mechanical Code, also known as the *Mechanical Code*

City of Houston Plumbing Code, also known as the *Plumbing Code*

City of Houston Residential Code, also known as the *Residential Code*

City of Houston Swimming Pool and Spa Code, also known as the *Swimming Pool and Spa Code*

Chapter 10, Article IX, also known as the *Houston Building Standards Code*, and *Houston Public Works Infrastructure Design Manual*, also known as the *Infrastructure Design Manual* or *IDM*.

In particular instances this Code may refer to individual ~~portions~~ volumes of the *Construction Code*, ~~such as the *Building Code*, the *Plumbing Code*, the *Electrical Code*, or the *Mechanical Code*~~, and any such specific reference shall be construed to mean the identified portion of the *Construction Code*. ~~Although they do not constitute a part of the *Construction Code* for other purposes, the *International Residential Code* and the *International Energy Conservation Code*, both as adopted by state law and amended by the city, shall be considered to be included within the term "Construction Code."~~

**

Fire Code means the City of Houston Fire Code of the City of Houston, as adopted and amended from time to time by the city council.

3. **Amend Section 1-2 further to add, in the appropriate alphabetical order positions, the following new definitions:**

**

Building Code means the City of Houston Building Code, as adopted and amended by the city council.

**

Electrical Code means the City of Houston Electrical Code as adopted and amended by the city council.

**

Energy Conservation Code means the *City of Houston Residential Energy Conservation Code* or the *City of Houston Commercial Energy Conservation Code*, both as adopted and amended by the city council.

**

Existing Building Code means the *City of Houston Existing Building Code*, as adopted and amended by the city council.

**

Mechanical Code means the *City of Houston Mechanical Code*, as adopted and amended by the city council.

**

Plumbing Code means the *City of Houston Plumbing Code*, as adopted and amended by the city council.

**

Residential Code means the *City of Houston Residential Code*, as adopted and amended by the city council.

**

Swimming Pool and Spa Code means the *City of Houston Swimming Pool and Spa Code*, as adopted and amended by the city council.

**

4. **Amend the row for “Dry Cleaning Plant” in the table in Section 1-10(b)(8) to read as follows:**

Dry Cleaning Plant	21-166(a)(3); <i>Fire Code</i> § 105.6.1342
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5. **Amend Section 2-278(a)(6) to read as follows:**

(6) Administration and enforcement of the city's *Construction Code* and related laws.

6. **Replace the definition of the term “building inspection division” in Section 5-116 with the definition of the revised term “Building Code Enforcement,” which reads as follows:**

~~Building Code Enforcement-inspection division~~ means that division within the Houston Public Works that is assigned the responsibility of enforcement of the *Construction Code*.

7. **Replace the term “the building inspection division” in Sections 5-118(a), 5-121(b), and 5-136 with the revised term “Building Code Enforcement,” as shown below:**

Sec. 5-118. General regulations.

- (a) No skeet or shooting gallery shall be constructed or operated within the city unless the plans for such are submitted to ~~the building inspection division~~ Building Code Enforcement. The skeet club or shooting gallery shall comply with all provisions of the Construction Code. The approval of the chief of police shall be required as to the location of any skeet club or shooting gallery.

**

Sec. 5-121. Special shooting gallery permit.

**

- (b) The applicant shall advise ~~the building inspection division~~ Building Code Enforcement and the chief of police that he desires a special permit and shall designate the maximum caliber and the most powerful standard pistol cartridge proposed to be fired at the shooting gallery.

**

Sec. 5-136. Required.

It shall be unlawful for a person to establish, maintain or operate, within the corporate limits of the city, a skeet club or shooting gallery without having first secured a license to do so from the chief of police. Such license shall not be issued by the chief of police unless the person applying therefor has secured a certificate of occupancy from ~~the building inspection division~~ Building Code Enforcement authorizing the occupancy of the premises for purposes of operating a skeet club or shooting gallery. Provided, however, this article governing the construction, licensing, use and occupancy of skeet clubs and shooting galleries shall not be applicable to any such installations which are constructed, operated and supervised in accordance with U. S. Army or Reserve Officers Training Corps regulations by school districts, colleges or universities.

8. **Amend Section 5-173(b) to read as follows:**

- (b) Any signage required by this section shall be in conformance with the *Sign Code* ~~(Chapter 46 of the City of Houston Building Code)~~.

9. **Amend Section 9-801(c)(2) to read as follows:**

- (2) At the time a stop work order is issued, the person performing the work and the permit holder shall be given notice of a right to a hearing on the matter pursuant to

section 9-757 of this article. Any stop work order that has been issued shall remain in effect pending any hearing that has been requested unless the stop work order is withdrawn by the director.

10. Amend Section 10-1(b) to read as follows:

- (b) The *Construction Code* was formerly known as the *Building Code*. Any reference in city ordinances, contracts, or other documents to the *Building Code* shall be construed to mean the document now known as the *Construction Code*, unless the reference is clearly intended by its context to mean that document called the ~~City of Houston Building Code~~, which is now one of several documents that constitute the *Construction Code*.

11. Amend Section 10-3(a)(3) to read as follows:

- (3) The interior remodeling of a building, provided that the remodeling will not change the building's "use and occupancy classification" within the meaning of Chapter 3 of the ~~City of Houston Building Code~~.

12. Amend Section 10-155(1) to read as follows:

- (1) An owner of an MFRB violates this article if the MFRB does not comply with:
 - a. All applicable provisions of the *Fire Code*;
 - b. Sections ~~LD~~102 through ~~LD~~108 of ~~appendix L~~ Appendix D (Life-Safety Requirements for Existing Buildings) of the *Existing Building Code* ~~(which provisions are part of the Building Code's "Life Safety Appendix")~~;
 - c. Sections 10-211 through 10-~~218~~ 245 of this Code (which provisions pertain to the numbering of buildings);
 - d. The provisions of chapter 41 of this Code (which provisions pertain to street names and site addresses);
 - ~~ed.~~ The provisions of ~~C~~chapter 43 of this Code (which provisions pertain to swimming pools); and
 - ~~fe.~~ Sections 92.153 through 92.162 of the Texas Property Code (which provisions pertain to security devices).

13. Amend Section 10-216(e) to read as follows:

- (e) Provisions of this section shall not be construed to authorize the erection or maintenance of any sign or marker in contravention of any applicable provisions of the *Sign Code* ~~chapter 46 of the *Building Code*~~.

14. Amend Section 10-256 to read as follows:

Sec. 10-256. Conformance to uniform codes.

Any industrialized building or industrialized housing erected or installed in the city shall be constructed in accordance with the requirements, ~~and standards~~ and rules as

determined by the Texas Industrialized Building Code Council, pursuant to Chapter 1202 of the Texas Occupations Code of the Uniform ~~Building Code~~, the Uniform ~~Plumbing Code~~ and the Uniform ~~Mechanical Code~~ as published by the International Conference of Building Officials and the International Association of Plumbing and Mechanical Officials and as those codes existed on January 1, 1985; provided, however, this provision shall only be applicable to the extent that the ~~Construction Code~~ is not enforceable in regard to the construction of such structures due to the provisions of Article 5221f-1, Texas Revised Civil Statutes.

15. Amend Items (4) and (7) of Section 10-298 to read as follows:

- (4) Any building of wooden frame construction wherein any cafe or restaurant business is operated, unless the walls and ceilings of that portion of the building in which the cafe or restaurant is operated are separated from the remainder of the building by one-hour fire-resistive materials ~~as defined in the Building Code~~.

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- (7) Any lodging house being operated in a two-story building of wooden frame construction; provided, however, that no such lodging house shall constitute a fire hazard if:
- a. The ceiling of the first floor is separated from the floor of the second by one-hour fire-resistive materials ~~as defined in the Building Code~~; and
 - b. The walls between the rooms are insulated by one-hour fire-resistive materials ~~as defined in the Building Code~~ that extend from ceiling to floor; and
 - c. The stairways, including the doors, platforms, landings, railings and corridors or passageways constructed in connection therewith, in all ways conform to the provisions of the *Building Code*; and
 - d. The floors, walls, and frame of the house are in safe and sound structural condition; and
 - e. The building does not otherwise constitute a fire hazard as defined herein.

16. Amend the definition of “building standards official” in Section 10-317 to read as follows:

Building standards official means the neighborhood protection official or the building official or the fire code official (as defined in the *Fire Code*), according to their respective enforcement responsibilities as provided in this article or in the *Fire Code*.

17. Amend Section 10-363(e)(5) to read as follows:

- (5) Provide each non-vacant dwelling unit, congregate living facility, and sleeping unit with means of egress as required by the *Construction Code* in effect at the time of construction and as required by Appendix D ~~to the~~ *Existing Building Code*; and

18. Amend the Title of Article XVII of Chapter 10 to read as follows:

ARTICLE XVII. ABATEMENT OF OFF-PREMISE SIGNS CONSTRUCTED OR MAINTAINED IN VIOLATION OF THE SIGN CODE ~~SECTION 4612(b) OF THE CITY OF HOUSTON BUILDING CODE~~

19. Amend Section 10-651 by deleting the definition of the term “Sign Code.”

Sign Code means Chapter 46 of that volume of the Construction Code known as the City of Houston Building Code

20. Amend the definition of “member of the executive branch” in Section 18-71 by replacing the term “Fire Board of Appeals” with the revised term “Fire Code Board of Appeals,” as shown below:

Member of the executive branch means the mayor, city controller, mayor-elect, city controller-elect, candidate for mayor or controller, or member of the Archaeological and Historical Commission, Airport Land Use Regulations Board of Adjustment, Automotive Board, Board of Public Trusts, Boiler Code Review and Licensing Board, Building and Standards Commission, Civil Service Commission, Electrical Board, Fire Code Board of Appeals, General Appeals Board, Helicopter Facilities Licensing and Appeals Board, *Mechanical Code* Review Board, Municipal Board on Sign Control, Planning Commission, Plumbing Code Review Board, Tower Permit Commission, or Wastewater Capacity Reservation Review Board.

21. Amend Section 19-23(a) to read as follows:

- (a) In addition to the remedies provided in section 19-91 of this Code, whenever the city engineer finds that there are grounds for revocation of a floodplain development permit, he shall give written notice to the permittee by personal service or by certified mail, return receipt requested, addressed to the applicant at the address set forth in the floodplain development permit application. That notice may require that any work on the property currently underway is required to stop immediately, that a stop work order is being issued, and shall set forth:
- (1) The specific grounds upon which the floodplain development permit in question may be revoked;
 - (2) The fact that there will be a hearing before the board in which the city will seek the revocation of the floodplain development permit;
 - (3) The date, time, and place of such hearing; and
 - (4) The fact that the permittee may appear in person or be represented by an attorney.

22. Amend Section 19-91(c)(2) to read as follows:

- (2) At the time a stop work order is issued, the person performing the work and the permittee shall be given notice of a right to a hearing on the matter pursuant to Section 117.2 of the Construction Code for permits authorized by that Code. Upon request, such a hearing shall be held within three business days unless the

permittee or person who was performing the work requests an extension of time. Any stop work order that has been issued shall remain in effect pending any hearing that has been requested unless the stop work order is withdrawn by the city engineer.

23. Amend Section 28-37 to read as follows:

Sec. 28-37. Attention-getting devices.

- (a) As used in this section, attention-getting devices shall mean devices erected, placed or maintained outdoors so as to attract attention to any commercial business, or any goods, products or services available on the premises of a commercial business, including but not limited to the following devices: banners; cut out figures; discs; festooning, including tinsel, strings of ribbons, and pinwheels; inflatable objects, including balloons; non-governmental flags; pennants; propellers; steam- or smoke-producing devices; streamers; whirligigs; wind devices; blinking, rotating, moving, chasing, flashing, glaring, strobe, scintillating, search, flood or spot lights; or similar devices, any of which are located or employed in connection with the conduct of a commercial business. Attention-getting devices shall not include any structure or device that is permitted under the ~~Houston Sign Code, Chapter 46 of the Building Code.~~
- (b) It shall be unlawful for any person to place, erect, maintain, or display any attention-getting device on any private or public property within the city. No attention-getting device shall be eligible for a permit under the ~~Houston Sign Code.~~
- (c) Enforcement of this section shall be the duty of the sign administration division of the Houston Public Works or any law enforcement officer.
- (d) Any person who shall violate any provision of this section shall be guilty of a misdemeanor and shall, upon conviction thereof, be punished by a fine of not less than \$300.00 and not more than \$500.00 for each violation. Each day in which any violation shall occur shall constitute a separate offense.

24. Amend Items (2) and (3) of Section 28-43(a) to read as follows:

- (2) *Political advertising material* means any advertising material relating to any election which might, with reasonable foreseeability, be placed, posted or erected within the city by any person in violation of sections 28-38 and 28-39 of this Code or ~~of the Sign Code Chapter 46 of the city's Building Code;~~ and
- (3) *The warning* means the following words: "Warning: Placement, posting or erection of this material within the City of Houston is regulated by sections 28-38 and 28-39 of ~~this Code the city's Code of Ordinances and the Sign Code Chapter 46 of the city's Building Code;~~ violation thereof is punishable by a fine of up to five hundred dollars (\$500.00)."

25. Amend Section 28-130(a) to read as follows:

- (a) Notwithstanding the ~~Sign Code chapter 46 of the Building code~~ or any other city ordinance, code, or regulation to the contrary, it shall be unlawful for the owner or operator of any enterprise or any other person to erect, construct, or maintain any

sign for the enterprise other than one primary sign and one secondary sign, as provided herein.

26. Amend Section 28-202(b) to read as follows:

- (b) All determinations required under this section shall be based upon facts in existence on the day that the application for a building permit to construct, alter, or remodel the hotel is duly filed in the office of the building official with all plans, drawings, and other documents required for its consideration and processing under the terms of the ~~h~~Building e~~Code~~. In the event that any applicant for a building permit to construct, alter, or remodel a hotel fails to initiate or prosecute the work such that the building permit expires under the terms of the ~~h~~Building e~~Code~~, then a new building permit shall be required, and its issuance shall be subject to facts in existence at the time that the application is file for the new permit.

27. Amend the definitions of the terms “enterprise” and “highly toxic” in Section 28-222 to read as follows:

Enterprise means a use or activity on, or of, a tract of land or within a building or structure, in whole or in part, that includes ~~storage of, inside and also includes~~ outside storage or use of hazardous materials exceeding the ~~M~~maximum Allowabled Q~~uantities~~ limits (MAQs) per control area that constitutes a Group H-1, H-2 or H-3 occupancy as described in ~~s~~Section 307 of that volume of the Construction Code known as the City of Houston Building Code. The term also includes any Group H-4 occupancy, in whole or in part, that includes storage (both interior and exterior) of hazardous materials exceeding the MAQs per control area as described in *Building Code* ~~s~~Section 307 if any highly toxic material is manufactured, processed, generated, stored or used. Otherwise, Group H-4 occupancies are not included. The term also does not include:

- (1) Any public water or wastewater treatment facility that is being operated under regulations promulgated by state or federal agencies, including but not limited to the United States Environmental Protection Agency and the Texas Commission on Environmental Quality;
- (2) Areas or spaces up to 500 square feet each in research labs operated under the authority of a hospital, college, or university, and classified as H-2, H-3 or H-4, with an aggregate maximum area of ten percent on each floor; or
- (3) Any area or space containing fuel storage for generators, fire pumps, above or underground fuel storage associated with vehicle motor fuel-dispensing facilities.

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Highly toxic material means any substance ~~se~~ defined as such in the *Fire Code*.

28. Amend the definition of the term “scenic area” in Section 28-521 to read as follows:

Scenic area means those areas of the city so designated by city council, as listed in the Sign Code ~~chapter 46 of the building code~~, except that, for purposes of this article,

any designated scenic area that has one or more high mast light structures within its boundaries shall not be deemed a scenic area.

29. Amend Section 29-15(a)(1) to read as follows:

- (1) In a manufactured home park which the operator is licensed to operate pursuant to article III of this chapter;

30. Amend the last sentence of Section 29-15(a) to read as follows:

Provided that no manufactured home may be situated or permitted to remain in any place in violation of any valid and applicable deed restriction or covenant running with the land, or on any site within Districts of Limitations One and Two as those districts are ~~defined~~ established in the *Fire Code*.

31. Amend Section 29-25(c) to read as follows:

- (c) The burden of proof at such hearing shall be upon the building official. If the general appeals board determines that grounds for revocation exist, it shall order the hardship permit revoked by written decision. A copy thereof shall be furnished to the hardship permittee, and appeal thereof may be made to the city council by complying with the appeal procedure in the *Building Code*.

32. Amend Section 29-37(b)(2) to read as follows:

- (2) A permit has been obtained for reconnection of any electrical utilities and the building official has found, upon inspection, that the exterior wiring service on the manufactured home is in such condition that it may be safely connected to the electrical utility services. The fee specified in the Construction Building Code for a reconnection fee shall be imposed for the issuance of a permit under this item.

33. Amend Section 29-74 to read as follows:

Sec. 29-74. Fee to be paid.

All applications shall be accompanied by the deposit of the applicable fees as specified in the Construction Building Code. The fees set out in chapters 41 and 42 of ~~the this Code of Ordinances~~ shall also be applicable to plans for manufactured home parks as though a manufactured home park were a subdivision.

34. Amend Section 29-109 to read as follows:

Sec. 29-109. Gas distribution system; general requirements.

Gas equipment and installation within a manufactured home park shall be designed and constructed in accordance with the ~~City of Houston Plumbing Code~~, the appropriate provisions of the ~~City of Houston Fire Code~~, and the standards adopted by reference in those codes.

35. Amend Subsections (b) and (e) of Section 29-124 to read as follows:

- (b) Portable fire extinguishers rated for Classes A, B and C shall be kept in service buildings and at other locations conveniently and readily accessible for use by all occupants and shall be maintained in good operating condition. Their capacity shall not be less than the underwriters laboratory (U.L.) rating of 2A 10BC. However, standpipes may be provided as an alternative to these fire extinguishers when approved by the fire marshal pursuant to the provisions of the ~~Fire~~ Code.

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- (e) Storage and handling of flammable liquids. In parks in which gasoline, oil, paints, or other flammable liquids are stored and/or dispensed, their handling and storage shall comply with the city ~~Fire~~ Code.

36. Amend the last sentence of Section 29-148(a) to read as follows:

The applicant for authorization for connection of either manufactured homes or recreational vehicles, or both, to electricity shall submit with the application the annual fee for such authorization as set out in section 29-160 of this Code, and shall pay all applicable permit fees set out in the Construction Code ~~building code~~.

37. Amend Section 29-160(a) to read as follows:

- (a) In addition to the fees set forth in this section, all other applicable inspection and permit fees as set forth in this Code and in the ~~Building~~ Construction Code must be tendered to the building official with the application.

38. Amend Section 32-231(b)(5) to read as follows:

- (5) The vendor shall not load or unload the mobile food unit or any food items while the mobile food unit or a vehicle transporting the mobile food unit is parked on a roadway. In no case shall a mobile food unit be positioned on a sidewalk so as to occupy more than 40 percent of the width of that sidewalk. In addition, all mobile food units shall comply with clearances required from structures to utility lines as provided the Construction Code ~~in a nationally recognized building code~~.

39. Amend Section 33-236(j) to read as follows:

- (j) No person shall alter, rehabilitate, restore, construct, relocate or demolish any landmark, protected landmark, or any building, structure or object in an historic district or archaeological site, or excavate any archaeological site, without complying with the applicable provisions of this article. It is a defense to prosecution under this section that the Director of Houston Public Works or a deputy director or an assistant director having supervisory responsibilities over the issuance of building permits has determined (1) that the work to be performed is necessary to correct conditions that are in violation of the life safety requirements for existing buildings as set forth in ~~Chapter 34 and Appendix L of the Existing Building Code, including Appendix D thereto~~; (2) that the work to be performed is the only means for achieving compliance with the life safety requirements; and (3) that, based upon the nature of the life safety violations and the risks associated

with their continuation, the provisions of this article should be waived to the extent of the life safety requirements.

40. Amend Section 40-7(b) to read as follows:

- (b) *Encroachment permit required.* A subdivision identification marker installed after December 31, 2008, in the median of a public street right-of-way or in unimproved excess public street right-of-way of a street within, abutting or adjacent to the subdivision must have an encroachment permit issued by the city engineer's office and shall not be subject to the requirements of the ~~Houston Sign Code (Chapter 46 of the City of Houston Building Code)~~.

41. Amend Section 40-10.1(b)(3) to read as follows:

- (3) *Canopy* shall mean an awning as defined by the ~~city's~~ Building Code.

42. Amend Section 40-10.1(d)(5)m to read as follows:

- m. The licensee shall not install, erect or maintain any signs not permitted by the Sign Code ~~city sign code (chapter 46 of the City of Houston Building Code)~~.

43. Amend Section 40-263(10) to read as follows:

- (10) A food vendor applicant shall state whether the mobile food unit will be fueled by liquefied petroleum gas. If so, the applicant shall provide proof that he holds a current and valid permit for the use of liquefied petroleum gas on the mobile unit issued pursuant to ~~article 82~~ Chapter 61 of the *Fire Code*.

44. Amend Section 40-483(j) to read as follows:

- (j) The applicant may appeal the denial or revocation of a permit by delivering a written request for an appeal to the director not more than fourteen days after the date the written notice of denial or revocation. Appeals of denial or revocation of a permit will be handled pursuant to the procedures set forth in ~~s~~Section 117 of the ~~city's~~ Building Code.

45. Amend Subsections (b) and (c) of Section 41-24 to read as follows:

- (b) After the recordation of a subdivision plat, the building official may change a site address if a property owner or the property owner's agent submits to the building official a written request and payment for each site address to be changed of the fee established in ~~s~~Section 118.1.13-117.1.14 of the *Building Code* for which the fee amount is stated in the city fee schedule.
- (c) For property that is not located in a recorded subdivision plat, the building official may change a site address if a property owner or the property owner's agent submits to the building official a written request and payment for each site address to be changed of the fee established in ~~s~~Section 118.1.13-117.1.14 of the *Building Code* for which the fee amount is stated in the city fee schedule.

46. Amend Section 42-145(a)(5) to read as follows:

- (5) Any parking space in a subdivision containing a shared driveway shall provide sufficient space for turning movements as depicted on the drawings of the space requirements for off street parking referenced in Section 3112.4.5 of the Construction Code;

47. Amend Section 42-234(b) to read as follows:

- (b) Parking space arrangements, sizes of spaces and driveway openings shall be in conformance with the ~~h~~B~~uilding e~~C~~ode~~. A parking space shall not be in tandem unless the tandem parking space is reserved for use by occupants of the same residential unit to which the space is in tandem.

48. Amend the definitions of the terms “pool,” “residential pool or spa,” and “spa” in Section 43-2 to read as follows:

Pool means any man-made permanently installed or non-portable structure, basin, chamber, or tank containing or designed to contain a body of water to be used for human swimming, diving, aquatic sports, or other aquatic activity, including any pool that is categorized as a Class A, Class B, or Class C or Class D public pool pursuant to Section 265.182(9976) of Title 25 of the Texas Administrative Code, regardless of whether a fee is charged for use, and regardless of whether its use has been abandoned or discontinued; provided, however, that this term does not include a residential pool or spa or a pool that has been abated.

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Residential pool or spa means a pool or spa that is located on private property under the control of the property owner or the owner's tenant and that is intended for use by not more than two resident families and their guests, including a pool or a spa serving only a single-family home or duplex. ~~any man-made structure, basin, chamber, or tank containing or designed to contain a body of water to be used for human swimming, diving, aquatic sports, or other aquatic activity and that is located at a single-family home or a duplex.~~

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Spa means a body of water intended for the immersion of persons in either hot or cold water, circulated in a closed system, and not intended to be drained and refilled after each use. A spa can include a filter, a heater, a pump, a blower and water sanitizing equipment. The term includes a swim spa or exercise spa, including any spa that is categorized as a Class A, Class B or Class C spa pursuant to Section 265.182 (94) of Title 25 of the Texas Administrative Code. ~~a constructed permanent or portable structure that contains or is designed to contain hot or cold water and (i) is two feet or more in depth, (ii) has a surface area of 250 square feet or less or a volume of 3,250 gallons or less, (iii) is intended to be used for bathing or other recreational uses by human beings, (iv) is not drained and refilled after each use, and (v) includes such elements as hydrojet circulation, mineral baths, air induction bubbles, or any combination thereof; regardless of whether its use has been abandoned or discontinued; provided, however, that this term does not include a residential pool or spa or a spa that has been abated.~~

49. Amend Section 43-6 to read as follows:

Sec. 43-6. ~~Facilities~~ Aquatic structures: minimum standards.

- (a) Except as provided in subsection (b) of this section, the City adopts minimum standards for ~~facilities~~ aquatic structures that are identical to or stricter than those pool safety standards contained in the following state and federal laws, all of which are incorporated herein:
 - (1) The VGBA;
 - (2) Chapter 757 of the Texas Health and Safety Code, as it relates to facilities; and
 - (3) Subchapters L and M of Chapter 265 of Title 25 of the Texas Administrative Code, as it relates to facilities; and
 - (4) That volume of the Construction Code known as the *Swimming Pool and Spa Code*.
- (b) The provisions of Section ~~265.208~~ 265.211 of Title 25 of the Texas Administrative Code shall not apply to enforcement of this chapter.
- (c) The operator of an ~~facility~~ aquatic structure shall maintain the ~~facility~~ aquatic structure in accordance with the pool safety standards adopted by the City pursuant to subsection (a) of this section. Any inconsistency between the requirements of this article and subsection (a) shall be resolved in favor of the more restrictive requirement.

50. Amend Subsections (g) and (h) of Section 43-9 to read as follows:

- (g) The health officer shall inspect an aquatic structure that has been constructed, remodeled or altered prior to its operation to determine compliance with the approved plans and specifications and with all other applicable requirements. A preoperational inspection fee will be assessed in conjunction with the inspection of an ~~facility~~ aquatic structure. An aquatic structure that fails to pass this inspection may not be operated or used.
- (h) No permit shall be issued to or renewed for any ~~facility~~ aquatic structure for which outstanding fees are owed to the city.

51. Amend Subsections (b) and (c) of Section 43-33 to read as follows:

- (b) The operator of an ~~facility~~ aquatic structure that is regulated by Chapter 757 of the Texas Health and Safety Code shall at all times maintain an enclosure that complies with those provisions of that chapter adopted by reference in section 43-6(a) of this Code, and the city may remedy violations of this subsection in accordance with the provisions of Section 214.101 of the Local Government Code, including the placement of a lien against the property to recover expenses incurred pursuant to remediation.
- (c) The operator of an ~~facility~~ aquatic structure that is regulated by Subchapter L of Chapter 265 of Title 25 of the Texas Administrative Code shall at all times maintain

upon such property an enclosure that complies with the requirements of Section 265.2039 of that subchapter adopted by reference in section 43-6(a) of this Code.

52. Amend Sections 43-35, 43-36, and 43-37 to read as follows:

Sec. 43-35. Enforcement and closures.

- (a) The health officer is authorized to issue citations charging the violation of any of the provisions of this chapter, the *Swimming Pool and Spa Code*, and, to the extent authorized or permitted by law, any applicable state laws, rules or regulations regarding pool safety. In addition, the health officer may order an facility-aquatic structure closed if the health officer determines:
- (1) That it is being operated without a valid permit; or
 - (2) That the continued operation of the aquatic structure will constitute a hazard to the health or safety of persons using the facility-aquatic structure or those in close proximity to the facility-aquatic structure.
- (b) Written notice of a closure order shall be provided to the operator of an aquatic structure. The notice shall:
- (1) Set forth the specific conditions at the aquatic structure that constitute a hazard to public health; or
 - (2) Set forth the specific conditions at the aquatic structure that are in violation of this chapter, the *Swimming Pool and Spa Code*, federal or state laws, or rules or regulations regarding pool safety.
 - (3) Be sent by personal hand delivery, certified mail, or private delivery service, return receipt requested. If there is documented proof that these methods are not successful, the written notice of a closure order may be sent to the operator by email.
- ~~(b)~~(c) Upon closure of an facility-aquatic structure pursuant to this section, the person in charge of the facility-aquatic structure shall immediately:
- (1) Properly post and maintain signs at all entrances to the facility-aquatic structure that state: "CLOSED UNTIL FURTHER NOTICE"; and
 - (2) Lock all doorways and gates that form a part of the facility-aquatic structure enclosure, so that the facility-aquatic structure is only accessible to maintenance or authorized personnel for repairs.
- Signs required to be posted under this section shall be a minimum size of 8½ inches by 11 inches. The lettering shall be of a contrasting color to the background and not less than one inch in height. Signs shall be positioned so that they are readily visible to a person seeking entry to the facility-aquatic structure.
- ~~(c)~~(d) If the person in charge of the facility-aquatic structure is absent or fails or refuses to comply with the requirements of subsection (b), the health officer may post signs and secure the premises in accordance with this section.
- ~~(d)~~(e) A person commits an offense under this section if the person:
- (1) Removes, defaces, alters, covers or renders unreadable a closure sign posted by the health officer; or

- (2) Uses an facility-aquatic structure subject to a closure order for swimming, diving or bathing; or
 - (3) Is a person in charge of an facility-aquatic structure subject to a closure order and knowingly allows persons to use the facility-aquatic structure for swimming, diving or bathing; or
 - (4) Is a person in charge of an facility-aquatic structure subject to a closure order and fails to comply with the requirements of this section.
- (f) The health officer shall notify the operator of a timeframe for reinspection after the health officer issues the closure order. If, upon reinspection any time before the end of the timeframe provided, it is found that the violations have been corrected, the health officer will lift the closure order. If the violations have not been corrected within the timeframe, and the operator has not received an approved extension, the closure order shall remain in place and the health officer may issue additional citations.
- ~~(e)~~(g) An operator may appeal a closure order within ~~three~~ 10 days after the issuance receipt of notice of the closure order by filing a written statement with the health officer setting forth the reasons why the closure order should be rescinded. The filing of an appeal does not ~~stay~~ postpone or halt the closure order.
- (f) ~~A facility closed by the health officer shall not resume operation until a reinspection by the health officer establishes that the facility is in compliance with this chapter, the Swimming Pool and Spa Code, and all applicable state or federal laws and rules and regulations regarding pool safety.~~
- (h) If an appeal is not timely filed, the closure order shall remain in place pending the results of the reinspection scheduled pursuant to subsection (f) of this section. If the appeal is timely filed, a hearing shall be scheduled with written notice provided to the operator by personal hand delivery, certified mail, or private delivery service within 5 days after receipt of the appeal. If there is documented proof that these methods are not successful, the written notice may be sent to the operator by email. The notice shall set forth:
- (1) That a hearing will be held before a hearing officer;
 - (2) The date, time, and place of the hearing; and
 - (3) That the operator may appear in person or virtually, may be represented by counsel, and may present testimony and cross-examine all witnesses. The hearing shall be held not later than 10 days after receipt of the appeal.
- (i) All hearings shall be conducted by a person designated by the director of the department, who shall be referred to as the hearing officer. The director of the department shall not designate any person to perform the duties of hearing officer under this section who has participated in the inspection of the aquatic structure, or has prior knowledge of the allegations or circumstances discovered in the inspection or inspections, except that the person designated as hearing officer may, prior to the hearing, receive a copy of the closure order given to the operator.
- (j) All hearings shall be conducted under rules consistent with the informal nature of the proceedings; provided, however, the following rules shall apply:
- (1) Each party shall have the right to representation by a licensed attorney, although an attorney is not required.

- (2) Each party may present witnesses on his own behalf.
- (3) Each party has the right to cross-examine all witnesses.
- (4) The hearing officer may consider only the evidence presented at the hearing in rendering the order.
- (k) If the operator fails to appear at the hearing at the time, place, and date specified, the health officer shall present sufficient evidence to establish a prima facie case showing violation of this chapter or the *Swimming Pool and Spa Code*, or conditions constituting a hazard to public health that formed the basis of the closure order.
- (l) If the hearing officer determines that the aquatic structure was operated in violation of this chapter, the *Swimming Pool and Spa Code*, federal or state laws, rules or regulations regarding pool safety, or constituted a hazard to public health, the hearing officer shall make written findings of fact and shall affirm the closure order. If the hearing officer finds that the public interest will be adequately protected by a warning or other penalties authorized under this chapter, he may rescind the closure order and impose such penalties. A copy of the findings and order of the hearing officer shall be sent by personal hand delivery, certified mail, or private delivery service, return receipt requested, to the operator. If there is documented proof that these methods are not successful, the findings and order may be sent to the operator by email.

Sec. 43-36. Permit suspension.

- (a) The health officer may, upon notice to the permit holder, suspend a permit if the operator of an facility aquatic structure does not comply with the requirements of this chapter or the *Swimming Pool and Spa Code*, or if the operation of the facility aquatic structure otherwise constitutes a hazard to public health. Suspension is effective upon service of the notice required by subsection (b) below. Upon issuance of a permit suspension, active pool operations shall immediately cease, and the permit shall be removed from the facility aquatic structure by the health officer and retained at the department until the suspension has terminated.
- (b) Written notice of a permit suspension shall be provided to the operator of an facility aquatic structure by personal hand delivery or, certified mail, or private delivery service, return receipt requested. If there is documented proof that these methods are not successful, the written notice may be sent to the operator by email. The notice shall set forth:
 - (1) The specific conditions at the facility aquatic structure that are in violation of this chapter, the *Swimming Pool and Spa Code*, in violation of or federal or state laws, rules or regulations regarding pool safety, or that constitute a hazard to public health;
 - (2) That a hearing will be held before a hearing officer;
 - (3) The date, time and place of the hearing; and
 - (4) That the operator may appear in person or virtually, may be represented by counsel, and may present testimony and cross-examine all witnesses. The hearing shall be held not later than ten days after the date the permit is suspended.

- (c) ~~A permit suspension hearing under this section shall be held in accordance with the procedures set forth in section 43-35 of this Code. All hearings shall be conducted by a person designated by the director, who shall be referred to as the hearing officer. The director shall not designate any person to perform the duties of hearing officer under this section who has participated in the inspection of the facility, or has prior knowledge of the allegations or circumstances discovered in the inspection or inspections, except that the person designated as hearing officer may, prior to the hearing, receive a copy of the notice given to the operator.~~
- (d) ~~All hearings shall be conducted under rules consistent with the informal nature of the proceedings; provided, however, the following rules shall apply:~~
- ~~(1) Each party shall have the right to representation by a licensed attorney, although an attorney is not required.~~
 - ~~(2) Each party may present witnesses on his own behalf.~~
 - ~~(3) Each party has the right to cross-examine all witnesses.~~
 - ~~(4) The hearing officer may consider only the evidence presented at the hearing in rendering the order.~~
- ~~(e)(d)~~ If the operator fails to appear at the hearing at the time, place, and date specified, the health officer shall present sufficient evidence to establish a prima facie case showing violation of this chapter or the *Swimming Pool and Spa Code*, or conditions constituting a hazard to public health that formed the basis of the suspension of the permit.
- ~~(f)(e)~~ If the hearing officer determines that the ~~facility~~ aquatic structure was operated in violation of this chapter or the *Swimming Pool and Spa Code*, or constituted a hazard to public health, the hearing officer shall make written findings of fact and shall affirm the permit suspension until all violations of this chapter are corrected and any conditions constituting a hazard to public health are eliminated. If the hearing officer finds that the public interest will be adequately protected by a warning or other penalties authorized under this chapter, he may order the permit to be reinstated and impose such penalties. A copy of the findings and order of the hearing officer shall be sent by personal hand delivery, certified mail, or private delivery service, return receipt requested, to the operator. If there is documented proof that these methods are not successful, the findings and order may be sent to the operator by email.
- ~~(g)(f)~~ Whenever the reason for a suspension no longer exists, the operator shall notify the health officer that the conditions under which the permit was suspended have been corrected and request a reinspection. The reinspection shall be conducted as soon as possible after the request is received and, in any event, no later than three regular working days after the receipt of the request.

Sec. 43-37. Permit revocation.

- (a) A permit may be revoked for up to 180 days if:
- (1) The person in charge or his agents or employees fail or refuse to permit an inspection of the ~~facility~~ aquatic structure by a health officer; or
 - (2) The department has found three or more violations of the applicable portions of this chapter, the *Swimming Pool and Spa Code*, or of federal or

state laws, rules or regulations regarding pool safety within the preceding twelve-month period.

- (b) Prior to the revocation of a permit, written notice shall be provided to the operator by personal hand delivery ~~or by~~ certified mail, or private delivery service, return receipt requested. If there is documented proof that these methods are not successful, the written notice may be sent to the operator by email. The notice shall set forth:
 - (1) The grounds on which the city will seek revocation of the permit, including the specific violations of this chapter, the *Swimming Pool and Spa Code*, or ~~of~~ federal or state laws regulating pool safety on which the city will rely in seeking revocation of the permit;
 - (2) That a hearing will be held before a hearing officer;
 - (3) The date, time and location of the hearing; and
 - (4) That the operator may appear in person or virtually, may be represented by counsel and may present testimony and cross-examine all witnesses. The hearing shall be held not later than ten days after the date the permit revocation notice is received.
- (c) A permit revocation hearing under this section shall be held in accordance with the procedures set forth in section 43-356 of this Code.
- (d) If the hearing officer determines that there are grounds for revocation of the permit, the hearing officer shall make written findings of fact and shall order the revocation of the permit for a period of not more than 180 days. A copy of the findings and order of the hearing officer shall be sent by personal hand delivery, certified mail, or private delivery service, return receipt requested, to the operator. If there is documented proof that these methods are not successful, the findings and order may be sent to the operator by email.
- (e) All operation of an ~~facility-aquatic structure~~ shall cease immediately upon receipt of service of written notice that the permit for that ~~facility-aquatic structure~~ has been revoked pursuant to subsection (d), and the health officer shall physically remove the permit from the premises.
- (f) Reinstatement of a permit that has been revoked shall require the operator to resubmit an application and payment of a ~~repay the~~ permit fee as if it were an initial application. No new permit application shall be considered for an ~~facility-aquatic structure~~ where the hearing officer has revoked the permit ~~has been revoked until the expiration of the revocation period.~~

53. Amend Section 47-14(d)(3) to read as follows:

- (3) In the case of sewer service, the applicant has paid the prescribed ~~p~~Plumbing ~~e~~Code inspection fees and the director has received written evidence from the appropriate plumbing official that the plumbing system at the premises to be served has been inspected by the city and is in compliance with the city's ~~p~~Plumbing ~~e~~Code; and

54. Amend the second-to-last sentence of Section 47-14(d) to read as follows:

Notwithstanding the foregoing, in the case of a plumbing system which is not in existence at the time the application is considered for approval, the director may approve such application upon the express condition that the plumbing system at the premises to be served be inspected by the city and found to be in compliance with the ~~city's~~ Plumbing Code before any connection to city water or sewer facilities is made.

55. Amend the definition of the term "industrial waste" in Section 47-187(d) to read as follows:

Industrial waste. Any waterborne solid, liquid or gaseous waste resulting from any production, industrial, manufacturing, service, or food processing operation or from the development, recovery, or processing of any natural resource including waste that is required to be pretreated by this article or the ~~city's~~ Plumbing Code. Included in this definition is any wastewater stream subject to pretreatment standards or requirements at 40 C.F.R. Parts 405—471.

56. Amend Section 47-513(a) to read as follows:

- (a) Commercial, institutional, and industrial facilities, including, but not limited to, restaurants, cafeterias, bars, hotels and motels, hospitals, sanitariums, manufacturing facilities, nursing homes, prisons, private and public schools, car washes, truck washes or other establishments where FOG, grit, silt or clay may be generated for which an application for a building permit is submitted after August 31, 2006, shall be required to design, install, operate and maintain an interceptor complying with the ~~City of Houston~~ Plumbing Code and install a sample well to allow access for inspection and sampling by the health officer.

57. Amend Section 47-604(b) to read as follows:

- (b) At the time a stop work order is issued, the person performing the work and the permit holder shall be given notice of a right to a hearing on the matter pursuant to ~~section 116.2~~ Section 117.2 of the *Building Code* for permits authorized by that code or pursuant to section 47-608 of this Code for all other construction permits. Upon request, such a hearing shall be held within three business days unless the permit holder or person who was performing the work requests an extension of time. Any stop work order that has been issued shall remain in effect pending any hearing that has been requested unless the stop work order is withdrawn by the building official or the city engineer.

58. Amend Section 47-613(d) to read as follows:

- (d) If the authorized city official determines that a reinspection is necessary to ascertain that the conditions responsible for a violation no longer exist, the operator shall be assessed the reinspection fee established in ~~s~~Section 118.1.5 of the *Building Code* in conjunction with that reinspection, and a hold will be placed on all permits and inspections on the site.

**FEES FOR ONE- AND TWO-FAMILY RESIDENTIAL DWELLINGS AND
TOWNHOUSES (calculated by square feet)**

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IA Construction Tier 1: BASE CHARGE	118.2.1, 602.1, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IA Construction Tier 2: BASE CHARGE	118.2.1, 602.1, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IA Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 44.9178645 square feet	118.2.1, 602.1, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IA Construction Tier 3: BASE CHARGE	118.2.1, 602.1, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IA Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 962.5256673 square feet	118.2.1, 602.1, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IA Construction Tier 4: BASE CHARGE	118.2.1, 602.1, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IA Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 1,283.3675565 square feet	118.2.1, 602.1, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type IA Construction Tier 5: BASE CHARGE	118.2.1, 602.1, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IA Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 1,925.0513347 square feet	118.2.1, 602.1, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IA Construction Tier 6: BASE CHARGE	118.2.1, 602.1, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IA Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 3,208.4188912 square feet	118.2.1, 602.1, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IA Construction Tier 7: BASE CHARGE	118.2.1, 602.1, Table 601	\$3,917.36

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type I Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 6,416.8377823 square feet	118.2.1, 602.1, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IA Construction Tier 8: BASE CHARGE	118.2.1, 602.1, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IA Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 32,084.1889117 square feet	118.2.1, 602.1, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type IA Construction Tier 9: BASE CHARGE	118.2.1, 602.1, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IA Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.4168378 square feet or fraction thereof after the first 320,841.8891170 square feet	118.2.1, 602.1, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IB Construction Tier 1: BASE CHARGE	118.2.1, 602.1, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IB Construction Tier 2: BASE CHARGE	118.2.1, 602.1, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IB Construction Tier 2: —In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 46.1710969 square feet	118.2.1, 602.1, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IB Construction Tier 3: BASE CHARGE	118.2.1, 602.1, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IB Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 989.3806477 square feet	118.2.1, 602.1, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IB Construction Tier 4: BASE CHARGE	118.2.1, 602.1, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IB Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 1,319.1741970 square feet	118.2.1, 602.1, Table 601	\$4.16

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IB Construction Tier 5: BASE CHARGE	118.2.1, 602.1, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IB Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 1,978.7612954 square feet	118.2.1, 602.1, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IB Construction Tier 6: BASE CHARGE	118.2.1, 602.1, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IB Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 3,297.9354924 square feet	118.2.1, 602.1, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IB Construction Tier 7: BASE CHARGE	118.2.1, 602.1, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IB Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 6,595.8709848 square feet	118.2.1, 602.1, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IB Construction Tier 8: BASE CHARGE	118.2.1, 602.1, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IB Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 32,979.3549239 square feet	118.2.1, 602.1, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type IB Construction Tier 9: BASE CHARGE	118.2.1, 602.1, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IB Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.5958710 square feet or fraction thereof after the first 329,793.5492381 square feet	118.2.1, 602.1, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 1: BASE CHARGE	118.2.1, 602.2, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 2: BASE CHARGE	118.2.1, 602.2, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL	118.2.1, 602.2, Table 601	\$4.75

Name	Description	Statutory Authority	Amount
	CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 47.3516877 square feet		
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 3: BASE CHARGE	118.2.1, 602.2, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 1,014.6790232 square feet	118.2.1, 602.2, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 4: BASE CHARGE	118.2.1, 602.2, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 1,352.9053643 square feet	118.2.1, 602.2, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 5: BASE CHARGE	118.2.1, 602.2, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 2,029.3580464 square feet	118.2.1, 602.2, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 6: BASE CHARGE	118.2.1, 602.2, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 3,382.2634107 square feet	118.2.1, 602.2, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 7: BASE CHARGE	118.2.1, 602.2, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 6,764.5268213 square feet	118.2.1, 602.2, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 8: BASE CHARGE	118.2.1, 602.2, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 33,822.6341068 square feet	118.2.1, 602.2, Table 601	\$1.77

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 9: BASE CHARGE	118.2.1, 602.2, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IIA Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.7645268 square feet or fraction thereof after the first 338,226.3410674 square feet	118.2.1, 602.3, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 1: BASE CHARGE	118.2.1, 602.2, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 2: BASE CHARGE	118.2.1, 602.2, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 48.5807481 square feet	118.2.1, 602.2, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 3: BASE CHARGE	118.2.1, 602.2, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 1,041.0160316 square feet	118.2.1, 602.2, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 4: BASE CHARGE	118.2.1, 602.2, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 1,388.0213756 square feet	118.2.1, 602.2, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 5: BASE CHARGE	118.2.1, 602.2, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 2,082.0320633 square feet	118.2.1, 602.2, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 6: BASE CHARGE	118.2.1, 602.2, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 3,470.0534388 square feet	118.2.1, 602.2, Table 601	\$3.56

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 7: BASE CHARGE	118.2.1, 602.2, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 6,940.1068776 square feet	118.2.1, 602.2, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 8: BASE CHARGE	118.2.1, 602.2, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 34,700.5343883 square feet	118.2.1, 602.2, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 9: BASE CHARGE	118.2.1, 602.2, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IIB Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 6.9401069 square feet or fraction thereof after the first 347,005.3438823 square feet	118.2.1, 602.2, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 1: BASE CHARGE	118.2.1, 602.3, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 2: BASE CHARGE	118.2.1, 602.3, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 50.3814596 square feet	118.2.1, 602.3, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 3: BASE CHARGE	118.2.1, 602.3, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 1,079.6027062 square feet	118.2.1, 602.3, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 4: BASE CHARGE	118.2.1, 602.3, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL	118.2.1, 602.3, Table 601	\$4.16

Name	Description	Statutory Authority	Amount
	CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 1,439.4702750 square feet		
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 5: BASE CHARGE	118.2.1, 602.3, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 2,159.2054124 square feet	118.2.1, 602.3, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 6: BASE CHARGE	118.2.1, 602.3, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 3,598.6756873 square feet	118.2.1, 602.3, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 7: BASE CHARGE	118.2.1, 602.3, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 7,197.3513747 square feet	118.2.1, 602.3, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 8: BASE CHARGE	118.2.1, 602.3, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 35,986.7568735 square feet	118.2.1, 602.3, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 9: BASE CHARGE	118.2.1, 602.3, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IIIA Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.1973514 square feet or fraction thereof after the first 359,867.5687347 square feet	118.2.1, 602.3, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 1: BASE CHARGE	118.2.1, 602.3, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 2: BASE CHARGE	118.2.1, 602.3, Table 601	\$41.62

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 51.7483551 square feet	118.2.1, 602.3, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 3: BASE CHARGE	118.2.1, 602.3, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 1,108.8933244 square feet	118.2.1, 602.3, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 4: BASE CHARGE	118.2.1, 602.3, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 1,478.5244327 square feet	118.2.1, 602.3, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 5: BASE CHARGE	118.2.1, 602.3, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 2,217.7866489 square feet	118.2.1, 602.3, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 6: BASE CHARGE	118.2.1, 602.3, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 3,696.3110815 square feet	118.2.1, 602.3, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 7: BASE CHARGE	118.2.1, 602.3, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 7,392.6221631 square feet	118.2.1, 602.3, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 8: BASE CHARGE	118.2.1, 602.3, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or	118.2.1, 602.3, Table 601	\$1.77

Name	Description	Statutory Authority	Amount
	fraction thereof after the first 36,963.1108154 square feet		
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 9: BASE CHARGE	118.2.1, 602.3, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IIIB Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.3926222 square feet or fraction thereof after the first 369,631.1081540 square feet	118.2.1, 602.3, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 1: BASE CHARGE	118.2.1, 602.4, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 2: BASE CHARGE	118.2.1, 602.4, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 49.3931696 square feet	118.2.1, 602.4, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 3: BASE CHARGE	118.2.1, 602.4, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 1,058.4250635 square feet	118.2.1, 602.4, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 4: BASE CHARGE	118.2.1, 602.4, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 1,411.2334180 square feet	118.2.1, 602.4, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 5: BASE CHARGE	118.2.1, 602.4, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 2,116.8501270 square feet	118.2.1, 602.4, Table 601	\$3.86

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 6: BASE CHARGE	118.2.1, 602.4, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 3,528.0835450 square feet	118.2.1, 602.4, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 7: BASE CHARGE	118.2.1, 602.4, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 7,056.1670900 square feet	118.2.1, 602.4, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 8: BASE CHARGE	118.2.1, 602.4, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 35,280.8354502 square feet	118.2.1, 602.4, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 9: BASE CHARGE	118.2.1, 602.4, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type IV (HT) Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.0561671 square feet or fraction thereof after the first 352,808.3545018 square feet	118.2.1, 602.4, Table 601	\$1.19
Building Code - Structural	Structural Building Permit Type VA Construction Tier 1: BASE CHARGE	118.2.1, 602.5, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type VA Construction Tier 2: BASE CHARGE	118.2.1, 602.5, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type VA Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 53.8295909 square feet	118.2.1, 602.5, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type VA Construction Tier 3: BASE CHARGE	118.2.1, 602.5, Table 601	\$721.75

Name	Description	Statutory Authority	Amount
Building Code - Structural	Structural Building Permit Type VA Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 1,153.4912334 square feet	118.2.1, 602.5, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type VA Construction Tier 4: BASE CHARGE	118.2.1, 602.5, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type VA Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 1,537.9883113 square feet	118.2.1, 602.5, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type VA Construction Tier 5: BASE CHARGE	118.2.1, 602.5, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type VA Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 2,306.9824669 square feet	118.2.1, 602.5, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type VA Construction Tier 6: BASE CHARGE	118.2.1, 602.5, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type VA Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 3,844.9707782 square feet	118.2.1, 602.5, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type VA Construction Tier 7: BASE CHARGE	118.2.1, 602.5, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type VA Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 7,689.9415564 square feet	118.2.1, 602.5, Table 601	\$3.26
Building Code - Structural	Structural Building Permit Type VA Construction Tier 8: BASE CHARGE	118.2.1, 602.5, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type VA Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or fraction thereof after the first 38,449.7077823 square feet	118.2.1, 602.5, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type VA Construction Tier 9: BASE CHARGE	118.2.1, 602.5, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type VA Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 7.6899416 square feet or	118.2.1, 602.5, Table 601	\$1.19

Name	Description	Statutory Authority	Amount
	fraction thereof after the first 384,497.0778222 square feet		
Building Code - Structural	Structural Building Permit Type VB Construction Tier 1: BASE CHARGE	118.2.1, 602.5, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type VB Construction Tier 2: BASE CHARGE	118.2.1, 602.5, Table 601	\$41.62
Building Code - Structural	Structural Building Permit Type VB Construction Tier 2: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 57.1615221 square feet	118.2.1, 602.5, Table 601	\$4.75
Building Code - Structural	Structural Building Permit Type VB Construction Tier 3: BASE CHARGE	118.2.1, 602.5, Table 601	\$721.75
Building Code - Structural	Structural Building Permit Type VB Construction Tier 3: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 1,224.8897599 square feet	118.2.1, 602.5, Table 601	\$4.46
Building Code - Structural	Structural Building Permit Type VB Construction Tier 4: BASE CHARGE	118.2.1, 602.5, Table 601	\$944.71
Building Code - Structural	Structural Building Permit Type VB Construction Tier 4: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 1,633.1863466 square feet	118.2.1, 602.5, Table 601	\$4.16
Building Code - Structural	Structural Building Permit Type VB Construction Tier 5: BASE CHARGE	118.2.1, 602.5, Table 601	\$1,360.87
Building Code - Structural	Structural Building Permit Type VB Construction Tier 5: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 2,449.7795198 square feet	118.2.1, 602.5, Table 601	\$3.86
Building Code - Structural	Structural Building Permit Type VB Construction Tier 6: BASE CHARGE	118.2.1, 602.5, Table 601	\$2,133.77
Building Code - Structural	Structural Building Permit Type VB Construction Tier 6: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 4,082.9658664 square feet	118.2.1, 602.5, Table 601	\$3.56
Building Code - Structural	Structural Building Permit Type VB Construction Tier 7: BASE CHARGE	118.2.1, 602.5, Table 601	\$3,917.36
Building Code - Structural	Structural Building Permit Type VB Construction Tier 7: In addition to BASE CHARGE, an INCREMENTAL	118.2.1, 602.5, Table 601	\$3.26

Name	Description	Statutory Authority	Amount
	CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 8,165.9317328 square feet		
Building Code - Structural	Structural Building Permit Type VB Construction Tier 8: BASE CHARGE	118.2.1, 602.5, Table 601	\$16,997.04
Building Code - Structural	Structural Building Permit Type VB Construction Tier 8: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 40,829.6586641 square feet	118.2.1, 602.5, Table 601	\$1.77
Building Code - Structural	Structural Building Permit Type VB Construction Tier 9: BASE CHARGE	118.2.1, 602.5, Table 601	\$97,258.73
Building Code - Structural	Structural Building Permit Type VB Construction Tier 9: In addition to BASE CHARGE, an INCREMENTAL CHARGE for each additional 8.1659317 square feet or fraction thereof after the first 408,296.5866405 square feet	118.2.1, 602.5, Table 601	\$1.19