

# **Houston Amendments to the 2021 International Energy Conservation Code Residential Provisions**



**Adopted by Ord. No. XXXX-XXXX**

**Passed XX/XX/XXXX**

**Effective XX/XX/XXXX**

# ***IECC—RESIDENTIAL PROVISIONS***

## **CHAPTER 1 (RE) SCOPE AND ADMINISTRATION**

**R101.1 Title.** This code shall be known as the ~~International City of Houston Residential Energy Conservation Code~~, of **[NAME OF JURISDICTION]**, and shall ~~may~~ be cited as such, and shall ~~be~~. It is referred to herein as “this 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 to the Adopting Ordinance, City of Houston Ordinance No.2015-1108.

**R101.6 Appendices.** Provisions in the appendices shall not apply unless specifically adopted. Appendix RB, including any amendments thereto adopted by this jurisdiction, is hereby adopted and shall be incorporated into and made part of this code.

N1101.4 (R102.1.1) Above code programs. The code official or other authority having jurisdiction shall be permitted to deem a national, state or local energy-efficiency program to exceed the energy efficiency required by this code. Buildings approved in writing by such an energy-efficiency program shall be considered to be in compliance with this code. The requirements identified in Table N1105.2, as applicable, shall be met.

The United States Environmental Protection Agency’s Energy STAR Program certification of energy code compliance shall be considered in compliance. Regardless of the program or path to compliance, each 1 and 2 family dwellings shall be tested for air and duct leakage as prescribed in Section R402.4.1.2 and R403.3.5 respectively.

**R103.5 Retention of construction documents.** One set of *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.

**R107.1 Fees.** Fees shall be as set forth in the *Building Code*. A permit shall not be issued until the fees prescribed in Section R107.2 have been paid, nor shall an amendment to a permit be released until the additional fee, if any, has been paid.

**R107.3 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* 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 the *Building Code*.

**R108.2 Issuance.** The stop work order shall be in writing and shall be given to the owner of the property involved, to 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 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 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*.

**R109.1 General.** The General Appeals Board, in accordance with the provisions of the *Building Code*, shall ~~In order to~~ hear and decide appeals of orders, decisions or determinations made by the *code official* relative to the application and interpretation of this code., there shall be and is hereby created a board of appeals. The *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 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 all decisions and findings in writing to the appellant with a duplicate copy to the *code official*.

**R109.2 [Deleted] 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.

**R109.3 [Deleted] Qualifications.** The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.

## **SECTION R110-R111** **HEARING PROCEDURES**

**R110.1 R111.1 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 delivery or by certified mail, return receipt requested.

If notice is being given to a building owner or to a tenant therein and the *code official* is unable to determine the name or address of such person after checking the building and the applicable records of the jurisdiction's Department Houston of Public Works and Engineering, 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 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.

**R110.2 R111.2 Hearings.** Except where otherwise specifically provided, all hearings held pursuant to this code shall be conducted by the jurisdiction's Director of Public Works and Engineering 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 a right to a hearing.

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## CHAPTER 2 (RE) DEFINITIONS

**R201.3 Terms defined in other codes.** Terms that are not defined in this code but are defined in the *International Building Code*, *International Fire Code*, *International Fuel Gas Code*, *Electrical Code*, *International Mechanical Code*, *International Plumbing Code* or the *International Residential Code* shall have the meanings ascribed to them in those codes.

### \*SECTION R202 GENERAL DEFINITIONS

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

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

**CODE OFFICIAL.** The jurisdiction's Director of Public Works and Engineering, or a duly authorized representative; also known as the building official.

**CONSTRUCTION CODE.** The City of Houston Construction Code, consisting of the Building Code, Electrical Code, Mechanical Code, Plumbing Code, Residential Code, Commercial Energy Conservation Code, and Residential Energy Conservation Code. Has meaning Ascribed in Section 1-2 of the city code

**ELECTRICAL CODE.** The National Electrical Code promulgated by the National Fire Protection Association, as adopted by this jurisdiction, and the City of Houston Electrical Code.

**ELECTRIC VEHICLE (EV).** An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, and electric motorcycles, primarily powered by an electric motor that draws current from a building electrical service, EVSE, a rechargeable storage battery, a fuel cell, a photovoltaic array, or another source of electric current.

**ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE).** Equipment for plug-in power transfer including the ungrounded, grounded and equipment grounding conductors, and the electric vehicle connectors, attached plugs, personal protection system and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

**ELECTRIC VEHICLE READY SPACE (EV READY SPACE).** An automobile parking space that is provided with a branch circuit and either an outlet, junction box or receptacle, that will support an installed EVSE.

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

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

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

**INTERNATIONAL FUEL GAS CODE.** The *City of Houston Plumbing Code*, as adopted by this jurisdiction.

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

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

**INTERNATIONAL PROPERTY MAINTENANCE CODE.** Chapter 10 of the *City Code*, which includes the *Houston Building Standards Code*.

**INTERNATIONAL RESIDENTIAL CODE.** The *City of Houston Residential Code*, based on the *International Residential Code for One- and Two-Family Dwellings*, as adopted by the State of Texas in Subchapter G of Chapter 214 of the Texas Local Government Code, with amendments adopted by this jurisdiction.

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

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

**RESIDENTIAL CODE.** The *City of Houston Residential Code*, based on the *International Residential Code for One- and Two-Family Dwellings*, as adopted by the State of Texas in Subchapter G of Chapter 214 of the Texas Local Government Code, including amendments adopted by this jurisdiction.

**\*{EDITORIAL NOTE: ALL OTHER PORTIONS OF SECTION 202 REMAIN AS SET FORTH IN THE 2021 INTERNATIONAL ENERGY CONSERVATION CODE.}**

## CHAPTER 3 (RE)

### GENERAL REQUIREMENTS

**R302.2 Exterior design conditions.** When using the total building performance or ERI method of compliance, the criteria shall be as set forth in Table R302.2.

**TABLE R302.2**  
**EXTERIOR DESIGN CONDITIONS**

<u>CONDITION</u>	<u>VALUE</u>
<u>Winter, design dry-bulb (<math>E_F</math>)</u>	<u>28° F</u>
<u>Summer, design dry-bulb</u>	<u>96° F</u>
<u>Summer, design wet-bulb</u>	<u>80.5° F</u>
<u>Degree days heating (base 65)</u>	<u>1371</u>
<u>Degree days cooling (base 50)</u>	<u>7357</u>
<u>Climate zone</u>	<u>2A</u>



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## CHAPTER 4 (RE)

### RESIDENTIAL ENERGY EFFICIENCY

**R402.2.14 Air barrier requirement.** Insulation (including but not limited to loose fill, spray applied cellular fiber insulation as well as other blanket and batts insulation) installed in assemblies 60 degrees or more from the horizontal must be in substantial contact with an air barrier on all sides.

**Exception:** Air impermeable insulation. *Air impermeable insulation* is defined as: A material having an air permeance equal to or less than 0.02 L/s-m<sup>2</sup> at 75 Pa pressure differential tested according to ASTM E2178 or E283.

**R402.4.1.4 Sampling options for R2 multifamily dwelling units.** For buildings with eight or more testing units that must be tested as required by R402.4.1.2 or R402.4.1.3, the greater of seven units or 20 percent of the testing units in the building shall be tested, including a top floor unit, a ground floor unit, a middle floor unit, and a unit with the largest testing unit enclosure area. For each tested unit that exceeds the maximum air leakage rate, an additional three units shall be tested, including a mixture of testing unit types and locations. Where buildings have fewer than eight testing units, each testing unit shall be tested.

**R403.3.8 Sampling options for R2 multifamily dwelling units.** Sample Testing must follow Chapter 6 of the Mortgage Industry National Home Energy Rating Systems Standards For buildings with eight or more testing units that must be tested as required by R403.3.5, the greater of seven units or 20 percent of the testing units in the building shall be tested, including a top floor unit, a ground floor unit, a middle floor unit, and a unit with the largest testing unit floor area. For each tested unit that exceeds the maximum duct leakage rate, an additional three units shall be tested, including a mixture of testing unit types and locations. Where buildings have fewer than eight testing units, each testing unit shall be tested.

**R403.6.4 Sampling options for R2 multifamily dwelling units.** Sample Testing must follow Chapter 6 of the Mortgage Industry National Home Energy Rating Systems Standards. For buildings with eight or more testing units that must be tested as required by R403.6.3, the greater of seven units or 20 percent of the testing units in the building shall be tested, including a top floor unit, a ground floor unit, a middle floor unit, and a unit with the largest testing unit floor area. For each tested unit that does not meet the minimum ventilation rate, an additional three units shall be tested, including a mixture of testing unit types and locations.

Where buildings have fewer than eight testing units, each testing unit shall be tested.

**R404.7 Electric Vehicle Power Transfer Infrastructure.** New automobile parking spaces for one- and two-family dwellings and townhouses shall be provided in accordance with this section. All other new residential parking facilities shall be provided with electric vehicle power transfer infrastructure in accordance with Section C405.16.

**R404.7.1 Quantity.** Each dwelling unit with a designated attached or detached garage or other onsite private parking provided adjacent to the dwelling unit shall be provided with one EV ready space.

**R404.7.2 EV Ready Spaces.** Each branch circuit serving EV ready spaces used to comply with Section R404.7.1 shall comply with all of the following:

1. Terminate at an outlet or enclosure located within 3 feet (914 mm) of each EV ready space it serves.

2. Have a minimum circuit capacity of 9.6 kVA (or 40A at 240V).
3. The panelboard or other electrical distribution equipment directory shall designate the branch circuit as "For electric vehicle supply equipment (EVSE)" and the outlet or enclosure shall be marked "For electric vehicle supply equipment (EVSE)."
4. Where a circuit is shared or managed, it shall be in accordance with NFPA 70.

**TABLE R406.5  
MAXIMUM ENERGY RATING INDEX**

<u>Climate Zone</u>	<u>Energy Rating Index</u>
<u>1</u>	<u>52</u>
<u>2</u>	<u>5259</u>
<u>3</u>	<u>51</u>
<u>4</u>	<u>54</u>
<u>5</u>	<u>55</u>
<u>6</u>	<u>54</u>
<u>7</u>	<u>53</u>
<u>8</u>	<u>53</u>

Effective until August 31,2025

<u>Climate Zone</u>	<u>Energy Rating Index</u>
<u>1</u>	<u>52</u>
<u>2</u>	<u>5257</u>
<u>3</u>	<u>51</u>
<u>4</u>	<u>54</u>
<u>5</u>	<u>55</u>
<u>6</u>	<u>54</u>
<u>7</u>	<u>53</u>
<u>8</u>	<u>53</u>

Effective from September 1,2025 to August 31,2028

<u>Climate Zone</u>	<u>Energy Rating Index</u>
<u>1</u>	<u>52</u>
<u>2</u>	<u>5255</u>
<u>3</u>	<u>51</u>
<u>4</u>	<u>54</u>
<u>5</u>	<u>55</u>
<u>6</u>	<u>54</u>
<u>7</u>	<u>53</u>
<u>8</u>	<u>53</u>

Effective from September 1,2028 to September 1,2031

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## CHAPTER 5 (RE)

### EXISTING BUILDINGS

**R501.6 Historic buildings.** No provision of this code relating to the construction, *repair*, *alteration*, restoration and movement of structures, and *change of occupancy* shall be mandatory for *historic buildings* provided a report has been submitted to the code official and signed by the owner, ~~a registered design professional~~, or and a representative of the State Historic Preservation Office or the historic preservation authority having jurisdiction, demonstrating that compliance with that provision would threaten, degrade or destroy the historic form, fabric or function of the *building*.

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## APPENDIX RB

### SOLAR-READY PROVISIONS—DETACHED ONE- AND TWO-FAMILY DWELLINGS, MULTIPLE SINGLE-FAMILY DWELLINGS (TOWNHOUSES)

#### SECTION RB101 SCOPE

**RB101.1 General.** These provisions shall be applicable for new construction where solar-ready provisions are required.

**Exceptions:**

1. New residential dwellings installed with 90% or greater high efficacy lamps;
2. New residential dwellings that participate and/or certify for energy compliance by one of the following above code programs: ENERGY STAR, ICC-700 Green Building Standard, LEED for Homes, and/or local utility energy rebate programs.

**RB103.6 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 shall be installed to provide a concealed pathway from the electric panel to the underside of the roof sufficient to allow future installation of solar equipment.~~

**Exception:** New single family homes less than 1800 square feet subject to 50% discount in the Building Code based on valuation.

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# **APPENDIX RD**

## **ELECTRIC VEHICLE “EV” READY**

### **RESIDENTIAL PROVISIONS**

**{EDITORIAL NOTE: THE PROVISIONS LOCATED IN THIS APPENDIX ARE OPTIONAL AND ARE NOT MANDATORY.}**

#### **SECTION RD101**

##### **DEFINITIONS**

**ELECTRIC VEHICLE (EV).** An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, and electric motorcycles, primarily powered by an electric motor that draws current from a building electrical service, EVSE, a rechargeable storage battery, a fuel cell, a photovoltaic array, or another source of electric current.

**ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE).** Equipment for plug-in power transfer including the ungrounded, grounded and equipment grounding conductors, and the *electric vehicle* connectors, attached plugs, personal protection system and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the *electric vehicle*.

**ELECTRIC VEHICLE READY SPACE (EV READY SPACE).** An *automobile parking space* that is provided with a branch circuit and either an outlet, junction box or receptacle, that will support an installed *EVSE*.

#### **SECTION RD102**

##### **RESIDENTIAL EV-READY REQUIREMENTS**

**RD102.1 Electric Vehicle Power Transfer Infrastructure.** New *automobile parking spaces* for one- and two-family dwellings and townhouses shall be provided in accordance with this section. All other new *residential* parking facilities shall be provided with electric vehicle power transfer infrastructure in accordance with Appendix CD.

**RD102.2 Quantity.** Each *dwelling unit* with a designated attached or detached garage or other onsite private parking provided adjacent to the *dwelling unit* shall be provided with one *EV ready space*.

**RD102.3 EV Ready Spaces.** Each branch circuit serving *EV ready spaces* used to comply with Section RD102.2 shall comply with all of the following:

- 1. Terminate at an outlet or enclosure located within 3 feet (914 mm) of each *EV ready space* it serves.**
- 2. Have a minimum circuit capacity of 9.6 kVA (or 40A at 240V).**
- 3. The panelboard or other electrical distribution equipment directory shall designate the branch circuit as “For electric vehicle supply equipment (EVSE)” and the outlet or enclosure shall be marked “For electric vehicle supply equipment (EVSE).”**
- 4. Where a circuit is shared or managed, it shall be in accordance with NFPA 70.**