



Houston Fire Department Life Safety Bureau (LSB)



LSB Standard No. 23, Rev. 03

Mid-Rise Atrium Fire Safety Plan Approval

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LSB Standards are established in accordance with provisions of the City of Houston *Fire Code*. They are subject to the administrative sections covering alternative materials and methods, modifications, and the Board of Appeals.

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Mid-Rise Atrium Fire Safety Plan Approval

Section 23.1 – General

23.1.1 Scope.

The provisions of this standard shall apply to all persons submitting a request for approval of Mid-Rise Atrium Fire Safety Training and Mid-Rise Atrium Fire Safety Plans within the City of Houston in accordance with the City of Houston *Fire Code*.

23.1.2 Purpose.

The purpose of this standard is to provide minimum guidelines for approval by the Fire Marshal of Mid-Rise Evacuation Training (MET) as mandated by LSB Standard No. 24, “Mid-Rise Atrium Fire Safety Plans.”

23.1.3 General.

All mid-rise atrium buildings shall comply with applicable fire and building codes and city ordinances that require alarm or sprinkler retrofit. (See Appendix I of the City of Houston *Fire Code*.)

During construction in or on any portion of an occupied mid-rise atrium building that may interfere with the operation of the fire alarm system, property management of the building shall provide Fire Wardens with temporary and acceptable measures of signaling a fire alarm within the building. Acceptable measures include whistles, public address systems, bullhorns, air horn noise emitting canisters, or other measures approved by the Fire Marshal. Property management shall ensure that these temporary measures are universally applied within the building and that all building occupants are familiar with the temporary alarm signal.

The use of any such temporary device shall be introduced in training and included in the written fire safety plan. This plan shall also include details of the planned transition into compliance with the alarm/sprinkler retrofit ordinance. Training in the temporary and alarm/sprinkler retrofit methods will be deemed satisfactory upon successful completion of a supervised fire drill by an approved training instructor.

Section 23.2 – Definitions

23.2.1 Approved Training Instructor.

A qualified individual approved to instruct Mid-Rise Atrium Fire Safety in accordance with Section 23.3.1 of this standard.

23.2.2 Fire Safety Coordinator.

Representative of the owner of or management company associated with a mid-rise atrium building who is mandated by the Fire Marshal to implement and manage all requirements of the Fire Safety Plan. The Fire Safety Coordinator is not required to be a tenant of the building and may manage more than one mid-rise atrium building, provided that all the Fire Safety Plan requirements are successfully implemented at each location.

23.2.3 Fire Safety Team.

The Fire Safety Team consists of the Fire Safety Coordinator and Fire Wardens that are specified in the approved Fire Safety Plan.

23.2.4 MET Certification Classes.

Classes for MET certification training provided to the Fire Safety Coordinator, tenant-designated Fire Wardens, and all property management employees, staff, and/or contract personnel. Classes must be led by an approved training instructor who has been approved by the Fire Marshal. Upon completion of the training program, the approved training instructor shall certify that the participants have been trained in accordance with the requirements of the City of Houston *Fire Code* and this standard.

23.2.5 Property Management.

The owner of a building or the authorized agent of the owner.

23.2.6 Supervised Fire Drill.

A supervised fire drill is a planned fire drill that has been performed under the supervision of an approved training instructor.

23.2.7 Duty to Assist the Fire Marshal.

Fire Safety Coordinators have a duty to provide facilities and assistance as needed by the Fire Marshal to obtain approval for a Fire Safety Plan.

Section 23.3 – Qualifications to Instruct

23.3.1 Qualifications.

Individuals seeking qualification from the Houston Fire Department Life Safety Bureau as approved training instructors for Mid-Rise Fire Safety Training in accordance with the requirements of the City of Houston *Fire Code* shall meet all of the following requirements:

1. Have a background in the fire service or a related fire safety field as follows:
 - a. Certified firefighter by the Texas Commission on Fire Protection, fire protection engineer, or a combination thereof, for a minimum of 10 years; or
 - b. Fire/Life-safety direction, with a minimum of 10 years of experience in high-rise occupancies; or
 - c. Building manager or engineer with a minimum of 15 years of experience in high-rise occupancies.
2. Possess a Level 1 (Basic) Instructor or Teaching Certification, at minimum, issued by:
 - a. An accredited educational institution; or
 - b. A certified fire training academy; or
 - c. The State of Texas (instructor certificate or equivalent credentials).

3. Have working knowledge of applicable City of Houston codes and ordinances.
4. Obtain written authorization to conduct such Mid-rise Fire Safety Training from the Fire Marshal.

Exception: Individuals seeking qualification to train Fire Wardens need only meet qualifications 1 and 3 above. To obtain approval to train per this exception, the individual shall submit proof of qualifications and a letter requesting approval to the Fire Marshal.

Section 23.4 Fire Safety Consultation and Training

23.4.1 Components of Mid-Rise Fire Safety Plan Consultation.

The Consultation and Training required as part of the process of obtaining approval of a Fire Safety Plan consists of three essential elements to be conducted by persons, institutions, or companies approved by the Fire Marshal in accordance with established regulations. These elements are:

23.4.1.1 Consultation.

One or more property management representatives shall attend a consultation meeting with an approved training instructor prior to the submittal of an approved Fire Safety plan. (See Section 23.5 for more information.)

23.4.1.2 Certification Training.

The property management and members of the property's Fire Safety Team shall be required to attend Mid-Rise Evacuation Training (MET) by an approved training instructor and become certified in emergency evacuation procedures. The training shall include, but not be limited to: basic fire safety, instruction in the organization of fire drills, fire drill procedure, and similar activities. MET training shall be approved by the Fire Marshal and shall be conducted by persons, institutions, or companies approved by the Fire Marshal. Comprehension of training objectives may be established by achievement of a passing score on written examination, or by demonstrations of individual proficiency. MET certificates, issued upon successful completion of training, shall be valid for a period of five (5) years from the date of issuance.

23.4.1.3 Fire Drill.

A fire drill that is supervised by an approved training instructor shall be conducted.

Section 23.5 – Mid-Rise Fire Safety Plan Property Management Consultation

23.5.1 Property Management Consultation.

The approved training instructor shall complete the following tasks during the consultation with property management personnel:

1. Discuss the necessity for all mid-rise atrium buildings within the City of Houston to have a Fire Marshal approved Mid-Rise Atrium Fire-Safety Plan.

2. Discuss the requirements to receive and maintain a Fire Marshal approved Mid-Rise Atrium Safety Plan.
3. Discuss the contents of LSB Standard No. 24 “Mid-Rise Atrium Fire Safety Plans” and provide a copy of the standard to applicant.
4. Review a sample copy of the LSB Standard Fire Safety Plan specific to the applicable occupancy. (Examples: Atrium Office Plan, Mid-Rise Atrium Condominium and Apartment Plan, or Mid-Rise Atrium Hotel Plan.) Explain in detail the proper implementation of the plan and how to provide necessary information concerning operation of the building’s fire and life-safety systems to the fire code official.
5. Advise property management of their responsibility for disseminating appropriate information regarding the Mid-Rise Fire Safety Plan to the people within their building.
6. Provide the applicant with a copy of the Fire Marshal’s letter entitled “Burning Issues” and discuss the letter with the applicant.
7. Discuss the certification requirement for all mid-rise atrium property management staff, employees, contract personnel, and all tenant Fire Wardens.
8. Discuss the responsibilities of the Fire Safety Coordinator and train them to manage the approved emergency plans and procedures. Fire Safety Coordinators must be aware of their responsibility to:
 - a. Train Fire Wardens under their supervision to notify the fire department of alarms and any known existing conditions without delay.
 - b. Instruct the Fire Wardens to meet the arriving fire department personnel if they have pertinent information to communicate to the fire department.
 - c. Maintain all applicable building fire safety equipment and systems to minimize the emergency’s effect on the occupants, building, and responding fire department personnel.
 - d. Administer appropriate public-address announcements when necessary.
9. Discuss answering services and their role in reporting automatic fire alarms in accordance with the City of Houston *Fire Code*. Discuss notifying an answering service of relevant plans and procedures.
10. Provide a sample copy of and discuss the Fire Marshal’s approved fire alarm recorded messages, if applicable.
11. Provide a sample copy of the Building Information Sheet and discuss.
12. Provide a sample copy of the Fire Marshal’s letter entitled “Fire Alarm System Maintenance During Construction in High-Rise Building’s.” Discuss “false” alarms that may occur during construction work within a building.
13. Discuss the provisions of the City of Houston Fire Alarm Ordinance and their applicability to the occupancy in question.

14. Discuss fire drill procedures and the importance of advance notification to tenants in the case of planned fire drills.
15. Provide sample letters for fire drill and Fire Warden certification participation.
16. Discuss the number of Fire Wardens required per code and set a date for Fire Warden training, if possible.

Section 23.6 – Mid-Rise Evacuation Training Certification

23.6.1 Mid-Rise Evacuation Training Class.

Attendance at a Mid-Rise Evacuation Training Certification Class is required for all mid-rise atrium Fire Wardens and all applicable property management employees, staff, and/or contract personnel.

23.6.2 Elements of Mid-Rise Evacuation Training.

Mid-Rise Atrium Fire Warden certification training shall take place within an adequate facility that is large enough to train all the required Fire Wardens for each building. Such training shall include, at a minimum, the following elements:

1. Discuss the necessity for all mid-rise atrium buildings within the City of Houston to have a Fire Marshal approved Mid-Rise Atrium Fire Safety Plan.
2. Explain that the Fire Safety Coordinator for the building is responsible for disseminating appropriate information regarding the Mid-Rise Atrium Fire Safety Plan to the people within the building.
3. Explain the building's fire safety features including, but not limited to: fire alarm systems (both automatic and manually operated), audible and visual alarms, public address system operations, emergency generators, and/or lighting.
4. Explain elevator features and dangers including, but not limited to: shunt trips, elevator recall, "alternate floor" response, and service elevators.
5. Explain automatic fire sprinkler systems and their effectiveness.
6. Explain the dangers of firefighting and discuss effective life-safety tactics to assist in minimizing the dangers of a fire. Tactics to be discussed include but are not limited to: proper notification of building inhabitants, "Get Out, Never Go Back In"; confinement of fire by closing the door on the fire, and the necessity of leaving the firefighting to the professionals.
7. Discuss the uses and hazards of portable fire extinguishers and tenant fire hoses. When possible, provide demonstration and practice on the safe and effective use of portable fire extinguishers.
8. Discuss the role of the Fire Safety Coordinator.
9. Discuss the role of the Fire Wardens in the event of a fire or fire alarm.
10. Discuss, in detail, the Mid-Rise Atrium Fire Safety Plan's "Procedures for Reporting Fires and Fire Alarms."

11. Discuss the mechanics of a fire including rapid flame spread and effect of fire and smoke on the human body.
12. Explain how smoke spreads in an atrium building and emphasize the need to get down and stay down low in a fire situation. Discuss the limits and feasibility of areas of refuge within a building and the need for immediate evacuation.
13. Discuss the “Delay of Alarm” and present examples in history.
14. Discuss the cause and effect of panic in a fire situation.
15. Discuss proper smoke detector use and their function and location in relation to early or delayed detection.
16. Discuss fire prevention, safety, and pre-fire planning on the job.
17. Discuss the planned fire drill to be conducted within the mid-rise atrium building and what such a drill may entail.
18. Discuss fire department responses and the need to notify the department of any change in conditions.
19. Discuss compartmentalization (floor and ceiling assemblies, inside doors, hallway walls and doors, stair doors, stair rating, and stair pressurization).
20. Discuss general fire safety and pre-fire planning on the job and in the home using “E.D.I.T.H.” or similar fire safety programs.

Section 23.7 – Fire Drill

23.7.1 Fire Drill as a Final Training Element.

The final step in the plan approval process shall be a supervised fire drill.

23.7.2 General Preparation and Drill Procedure.

The following steps shall be taken to prepare for, conduct, and review the effectiveness of a fire drill:

23.7.2.1 Pre-Drill Preparations.

1. In advance of the date chosen by property management for the drill, the Fire Safety Coordinator shall provide all of the tenants on every floor with written notification of the intent to conduct a fire drill on that date.
2. It is recommended that property management arrange for representatives from the fire alarm and elevator service companies to be present at the building at the time of the fire drill when possible.

23.7.2.2 Day of Drill Preparations.

1. It is recommended that property management again provide notification to tenants and visitors to the building as to the specific time of the planned fire drill.

2. Property management shall provide notification to the fire alarm monitoring service (if applicable) and the Fire Department Emergency Communication Center in advance of the planned fire drill. Property management shall instruct the UL monitoring station NOT to call the fire department during the time of the fire drill.

23.7.2.3 Conducting the Drill.

1. The building or selected floors within the building should be put into alarm at the previously announced start time.
2. All elevators shall be placed in Fire Service Recall (Phase I of Fire Service) to recall to their designated floors.
3. During the fire drill, which has been designed to spot check building systems operation to ensure proper functioning, members of the Fire Safety Team should take notice of an report any issues to the Fire Safety Coordinator.

23.7.2.4 Post Drill.

At the conclusion of the drill, property management shall:

1. Immediately notify their fire alarm monitoring services (if applicable) and the Fire Department Emergency Communication Center that the building is to be placed back onto fire alarm monitoring status.
2. Conduct a post drill review to analyze the effectiveness of the fire drill and resolve any problems that were encountered.
3. Make recommendations for any additional training that is necessary to improve performance.

Section 23.8 – Fire Safety Plan Approval

23.8.1 Conditions of Fire Safety Plan Approval.

For a Fire Safety Plan to be approved by the Fire Marshal, the following must take place:

1. Completion of all required training elements.
2. Completion of a standard Fire Safety Plan with an adequate number of trained Fire Wardens.
3. Property management and personnel must demonstrate an adequate knowledge and performance of emergency procedures, including basic operation of the building's emergency systems.

Section 23.9 – Certificates of Approval

23.9.1 Fire Marshal Approval Letters.

Upon completion of all of the requirements covered within this standard, the approved training instructor shall prepare and submit a letter to the Fire Marshal requesting

approval of the Fire Safety Plan. If approval is granted, the Fire Marshal shall issue a letter or certificate of approval for that building.

23.9.2 Certificates of Completion of Fire Warden Training.

A certificate of satisfactory course completion shall be issued by the approved training instructor providing a Fire Marshal approved course of Fire Warden training. Provision and distribution of certificates are solely the responsibility of the approved training instructor. The design of the certificate shall be sufficiently different so as not to be confused with those issued by the Houston Fire Department. Each certificate shall include the recipient's name, the instructor's name, and the date of the class written or printed legibly. A copy of the certificate shall be submitted to the Fire Marshal for approval before distribution to Fire Wardens. Upon distribution, the certificate shall be considered valid for a period of five (5) years from the class date.

23.9.3 Length of Fire Safety Plan Approval.

Fire Safety Plan approvals are maintained for a period of not more than two (2) years, or until the occurrence of any of the following:

1. Change of Fire Safety Coordinator, unless the site was certified within 30 days of the change; or
2. The lack of certification of the required minimum number of Fire Wardens; or
3. A change in the building's occupancy classification; or
4. The approved plan becomes outdated due to age of the City of Houston codes, ordinances, or standards.

Section 23.10 – Procedures for Transmitting Automatic Fire Alarms

23.10.1 General.

The procedures for transmitting automatic fire alarms will be in accordance with Chapter 4 of the City of Houston *Fire Code*.

23.10.2 Scope.

In the event an unexpected fire occurs or upon the discovery of a fire, smoke, or unauthorized release of flammable or hazardous materials on any property, the owner or occupant shall immediately report such condition to the fire department. Building employees and tenants shall implement the appropriate emergency plans and procedures and notify the fire department as soon as notice can safely be given. No person shall, by verbal or written directive, require any delay in the reporting of a fire to the fire department.

23.10.3 Violations.

Fire inspectors are authorized to issue written citations to any persons in any occupancy or receiving station who delays or otherwise suppresses the immediate relay of alarms or reports from their facility to the fire department. Fines range from \$500 to \$2,000 for each violation.

Section 23.11 – Fire Alarm System Maintenance During Construction

23.11.1 General.

Fire detection, alarm, and extinguishing systems shall be maintained in an operative condition at all times and shall be replaced or repaired where defective, per Section 901.6 of the City of Houston *Fire Code*. Nonrequired fire protection systems and equipment shall be inspected, tested, and maintained or removed.

23.11.2 During Construction.

In accordance with the City of Houston *Fire Code*, if the nature of construction warrants, the following options are approved by the Houston Fire Department during the full or partial construction of floor(s) within a building:

1. Installation of molded plastic cups over smoke detectors.
2. Installation of bags over smoke detectors.
3. Replacement of smoke detectors with rate-of-rise heat detectors.

23.11.3 Cups or Bags Installation.

If cups or bags are installed, a written process shall be established by the property management and included in the building's Construction Rules and Regulations to ensure:

1. Proper installation of cups/bags.
2. Proper removal of cups/bags whenever an involved area is unoccupied and follow-up verification of such removal.
3. Maintenance of daily documentation of involved locations, including contact names.
4. Designation of appropriate person(s) in construction area to activate the fire alarm and notify the Houston Fire Department and property management in the event of an actual smoke/fire situation.

23.11.4 Heat Detectors in Elevator Lobbies.

Heat detectors are not acceptable in elevator lobbies. Lobbies must have cups/bags installed on smoke detectors.

23.11.5 Alarm System Disabling.

The Houston Fire Department does not allow the disabling of an alarm system by device, zone, or floor, nor the complete deactivation of the fire alarm system.

23.11.6 Alarm System Removal.

In the event of demolition of a floor(s), including the removal of the fire alarm system, property management shall:

1. Notify the Houston Fire Department Emergency Communications Center by telephone: (713) 884-3143; or fax: (713) 884-4237.

2. Check with an alarm company for temporary alternatives for fire detection and notification to the fire department.
3. At minimum during the demolition, provide the following: **(a)** a temporary standpipe at a location approved by the fire code official, and **(b)** two exits from the building.

23.11.7 Violations.

Violation of any of the provisions of Section 23.11 of this Standard may subject the property management to City of Houston *Fire Code* citations (fines \$500 - \$2,000 for each violation), and/or fines for violation of False Fire Alarm Ordinance.

References

1. City of Houston *Fire Code*.
2. Fire Marshal's letter "Burning Issues."
3. Fire Marshal's letter "Fire Alarm System Maintenance During Construction in Mid-Rise Atrium Buildings."
4. Life Safety Bureau (LSB) Standard No. 08, "Fire Drills."
5. Life Safety Bureau (LSB) Standard No. 24, "Mid-Rise Atrium Fire Safety Plans."

All reference materials used under this Life Safety Bureau standard shall be in accordance with the most current adopted City of Houston *Construction Code*.