



**HOUSTON FIRE DEPARTMENT
LIFE SAFETY BUREAU (LSB)**



**LSB STANDARD 18, REV. 03
HIGH-RISE FIRE SAFETY PLAN APPROVAL**

SUPERCEDES:

LSB STANDARD 18, REV. 02

Effective Date: November 1, 2009



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LSB Standard 18, Rev. 03
High-Rise Fire Safety Plan Approval

SECTION 18.1 --- GENERAL

18.1.1 Scope.

This standard shall apply to all persons seeking to provide high-rise fire safety training and high-rise fire safety plan approvals within the City of Houston in accordance with the *Fire Code*.

18.1.2 Purpose.

This standard shall provide minimum guidelines for high-rise training, as permitted by LSB Standard 07, "High-Rise Fire Safety Plans", toward a fire-safety plan approval by the Fire Marshal.

SECTION 18.2 --- DEFINITIONS

18.2.1 Building Emergency Response Personnel (BERP).

Representatives of the building owner or management who are trained to investigate the cause of a fire alarm. In the event of a fire or other emergency, BERP are available to assist in evacuation of occupants and assist the Fire Safety Director with building fire safety systems and equipment, in accordance with the building's fire safety plan.

18.2.2 Fire Safety Director.

Representative of the owner of a high-rise building and who is mandated by the Fire Marshal, to implement the Fire Safety Plan by providing information and properly training building staff, tenants, residents and guest, as defined herein. The Fire Safety Director is responsible for directing the Fire Safety Plan during and after a fire emergency.

18.2.3 Fire Safety Team.

Building personnel selected and trained to utilize the emergency plans and procedures in promoting general fire and life-safety in high-rise buildings. A Fire Safety team shall include the Fire Safety Director, Assistant Directors, the Building Emergency Response Personnel (BERP), Fire Wardens and such other persons specified in the approved safety plan. The members of the Fire Safety Team shall possess a certificate signed by the Fire Marshal or an approved instructor as per Section 18.3.

18.2.4 High-rise Certification Classes.

Training provided to Fire Wardens and property management employees, staff and/or contract personnel by an instructor approved by the Fire Marshal to certify that they have been trained in accordance with the requirements of the City of Houston Fire Code and this standard.

18.2.5 Supervised Fire Drill.

A planned fire drill performed under the supervision of an approved training instructor.

18.2.6 Approved Training Instructor.

A qualified individual approved in accordance with Section 18.3.1 to instruct high-rise safety for fire safety plan approval by the Code Official.

18.2.7 Fire Warden.

A Fire Warden is a dependable and responsible tenant representative in a high-rise office building who will, when safe to do so, help direct the evacuation of occupants according to the approved fire safety plan.

SECTION 18.3 --- QUALIFICATIONS TO INSTRUCT

18.3.1 Qualifications.

Qualifications of individuals to instruct high-rise fire safety in accordance with the requirements of the City of Houston *Fire Code* shall meet all of the following requirements as set forth below, and be acceptable to the Code Official:

1. Background in the Fire Service or related Fire Safety field:
 - 1.1 Certified Firefighter, Fire Protection Engineer, or combination thereof, for a minimum of 10 years, *or*
 - 1.2 Fire/Life Safety Director, with a minimum of 10 years experience in high-rise occupancies, *or*
 - 1.3 Building manager or engineer with a minimum of 15 years experience in high-rise occupancies.
2. Possess at minimum a Level I (Basic) Instructor or Teaching Certification issued by:
 - 2.1 Accredited educational institution, *or*
 - 2.2 Certified Fire Training Academy, *or*
 - 2.3 Texas Instructor Certificate, or equivalent credentials.
3. Demonstrate a working knowledge of applicable City of Houston Codes and Ordinances.

Exception: Required training of building Fire Wardens only may be performed by persons who meet qualifications 1 and 3 above. Those individuals shall submit a letter to the Fire Marshal requesting approval to train along with proof of their qualifications.

SECTION 18.4 ---- COMPONENTS OF FIRE SAFETY PLAN APPROVAL

18.4.1 High-rise Fire Safety Plan approvals.

High-rise fire safety plan approval by the Code Official is dependent upon successful completion of the following three essential training elements:

1. Consultation with property management and BERP personnel,
2. Fire Warden high-rise certification class, and
3. Completion of a supervised fire drill.

SECTION 18.5 --- PROPERTY MANAGEMENT CONSULTATION

18.5.1 Consultations with Management.

The following elements shall be covered during the consultation with property management personnel:

1. Explain that all high-rise buildings within the City of Houston must have a Code Official approved High-rise Fire Safety Plan.
2. Explain what is required to receive and maintain a Code Official approved Fire Safety Plan.
3. Provide copies of and explain HFD Life Safety Bureau (LSB) Standard 07, "High-rise Fire Safety Plan".
4. Provide a sample copy of the Houston Fire Department's standard fire safety plan specific to the applicable occupancy. (i.e. High-rise Office Plan, High-rise Condominium and Apartment Plan, or High-rise Hotel Plan). Explain how the plan should be completed and how to provide necessary information concerning how the building's fire and life-safety systems operate.
5. Explain that property management is responsible for disseminating appropriate information regarding the High-rise Fire Safety Plan to the people within their building.
6. Provide copy of and discuss the Code Official's letter, "Burning Issues."
7. Explain that certification training is required for all high-rise property management staff, employees, contract personnel and all Fire Wardens.
8. Discuss the responsibilities of and train the Fire Safety Director(s) to manage and direct the execution of the approved emergency plans and procedures, including the following:
 - 8.1 That the Fire Safety Director will notify the fire department and BERP of alarms and any known existing conditions without delay.
 - 8.2 Explain how and when to direct the activation of all applicable building fire safety equipment and systems to minimize the emergency's effect on the occupants, the building, and responding fire department personnel.
 - 8.3 Convey to the Fire Safety Director the administration of appropriate public address announcements.
 - 8.4 Instruct the Fire Safety Director to:
 - 8.4.1 Ensure that the fire department has been called (911),
 - 8.4.2 Monitor the fire panel,
 - 8.4.3 Recall the elevators,
 - 8.4.4 Communicate over the PA system as per the approved plan,
 - 8.4.5 Meet and assist the arriving fire department personnel.
9. Train the Fire Safety Director(s) and BERP in the elevator car selection process and the automatic and manual activation of the Phase-I Fire Service Elevator Recall. Train Fire Safety Director(s) and BERP on the activation and operation of Phase-II Fire Service and appropriate conditions and procedures to follow in using

elevators to investigate fire alarms in accordance with procedures found in “**Building Emergency Response Personnel – Elevators and the Use of Elevators to Investigate Fire Alarms**”.

10. Discuss responsibilities of and train the BERP in the proper investigation of fire alarms, methods of vertical travel, procedures for assisting in the evacuation of building occupants, and to assist the Fire Safety Director with the building fire safety systems and equipment.
11. Discuss notification of Answering Service as to the requirements for reporting of automatic fire alarms in accordance with the City of Houston Fire Code.
12. Provide a sample copy of and discuss the Code Official’s approved fire alarm recording messages.
13. Provide a sample copy of and discuss the Building Information Sheet.
14. Provide a copy of the Code Official’s letter, “Fire Alarm System Maintenance During Construction In High-rise Buildings”, and discuss “false” fire alarms due to construction work being performed within buildings.
15. Discuss the provisions of the City of Houston’s *False Alarm Ordinance* as applicable to the particular occupancy in question.
16. Discuss fire drill procedures and the importance of tenants’ notifications in advance of any planned fire drill.
17. Provide sample letters for fire drill and fire warden certification participation.
18. Discuss the number of fire wardens required per code, fire warden duties, and set a date for the Fire Warden training if possible.

SECTION 18.6 --- HIGH-RISE CERTIFICATION CLASS

18.6.1 High-rise Certification Class.

Attendance at a High-rise Certification Class is required for all high-rise Fire Wardens and appropriate property management employees, staff and contract personnel.

18.6.1.1 Elements of High-rise Fire Warden Certification training.

High-rise Fire Warden Certification training shall include, at a minimum, the following elements:

1. Explain the building’s fire safety features; fire alarm system automatic and manual operation, audible and visual alarms, public address system operations, emergency generator and lighting, etc.
2. Explain Elevator functions including elevator recall and “alternate floor” response.
3. Explain the dangers of fire fighting and how it is best to close the door to confine the fire, notify everyone, and “*Get Out, Never Go Back In.*” *Leave firefighting to the professionals.*
4. Discuss the role of the Fire Safety Director in the event of a fire or fire alarm.

5. Discuss the role of the BERP team in the event of a fire or fire alarm.
6. Discuss the role of the Fire Wardens in the event of a fire or fire alarm. (See Section 18.6.1.2.)
7. Discuss the details of the fire plans' "Procedures for Reporting Fires and Fire Alarms".
8. Discuss the danger of delaying fire alarms.
9. Discuss the need for calm during fire or suspected fire incidents.
10. Discuss the planned fire drill to be conducted within the high-rise building and what it may involve.
11. Explain the "Three Phases of Evacuation", and the simultaneous multi-phase to determine which Phase applies to whom and when initiation of each Phase should take place. Explain:
 - 11.1 Phase #1 - Horizontal evacuation to the 1st Staging location on your floor adjacent to the exit stairway door. (This is generally as safe for mobility impaired occupants)
 - 11.2 Phase #2 – Vertical evacuation to the 2nd Staging location which is down the exit stairway to three or more floors below the lowest fire affected floor.
 - 11.3 Phase # 3 – Vertical evacuation is through the exit stairway, if not on the exit egress floor, to the exterior of and away from the building to a place of safe refuge.

EMERGENCY PROCEDURE PRIORITIES

A. If the following is reported to you, or if you see smoke or fire, or smell something burning:

Evacuate – Using the exit / stairs to a safe area. Relocation and reentry into the building at least 3 levels below the fire floor is generally adequate.

B. Emergency procedure in the event of an alarm only:

Minimum Procedure: Prepare to evacuate by moving to the nearest exit / stair door. If there is any evidence of fire then evacuate the floor to a safe area.

Evacuation from other floors shall be initiated when conditions indicate such action, or when instructed to do so by the fire department or the Fire Safety Director. Evacuation should be via uncontaminated exit / stairs.

18.6.1.2 Fire Warden Duties.

1. Each floor of a building.

Each floor of a building shall be under the direction of the Fire Wardens.

2. Familiar with Fire Safety Plan and systems.

Each Fire Warden shall be familiar with the Fire Safety Plan, the location of exits, and how to activate the fire alarm.

3. Duties in the event of a fire or fire alarm.

In the event of a fire or fire alarm the Fire Warden, **when it is safe to do so**, shall:

3.1 Notify the fire department and the Fire Safety Director as specified in the approved Fire Safety Plan.

3.2 Attempt to ensure that all occupants are notified of the fire or fire alarm, and shall instruct occupants in accordance with the Fire Safety Plan.

3.3 Direct evacuation in accordance with directions received from the fire department or the Fire Safety Director and the following guidelines:

3.3.1 The Fire Warden shall select the nearest fire exit stairwell to use for evacuation on the basis of the location of the fire and any information received. If it is affected by smoke then an alternate fire exit stairwell shall be selected.

3.3.2 The priority floors for immediate evacuation are the fire floor, one floor above and one floor below the fire. In the event of a fire alarm, the minimum response is to prepare to evacuate by relocating occupants to the nearest fire exit stairwell door. Evacuation from other floors shall be instituted when conditions indicate such action or when instructed by the fire department or the Fire Safety Director. Evacuation should be via uncontaminated stairwells.

3.3.3 Relocation to three (3) or more levels below the fire floor is generally adequate.

3.3.4 Fire Wardens on the fire floor shall, as soon as practical, notify the fire department or the Fire Safety Director of the conditions.

3.3.5 Fire Wardens shall notify the Fire Safety Director of all mobility-impaired occupants that may require special assistance. Occupants not requiring assistance should evacuate first. If there is evidence of fire then the person(s) having mobility impairment should be positioned near the fire exit stairwell that is located farthest away from the fire. If fire conditions pose a personal threat then the Fire Warden or person assisting should enter into the fire exit stairwell with the person(s) needing special assistance and wait for the Fire Department. If fire conditions pose a personal threat in the stairwell then the mobility-impaired person(s) should be evacuated to some other safe location.

3.3.6 Fire Wardens shall ensure that the fire department has been notified of the location of all mobility-impaired occupants that have required special assistance in evacuating the affected areas.

SECTION 18.7 --- FIRE DRILL

18.7.1 Fire Drill as the final step in plan approval.

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

18.7.2 Prepare for and Conduct a Drill.

It is recommended that the following steps be taken in preparation for and conducting of the fire drill.

18.7.2.1 Pre-drill preparations.

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

18.7.2.2 Day of Drill preparations.

1. It is recommended that property management again provide means for the notification of tenants and visitors to the building of the specific time of the planned fire drill.
2. Property management shall notify their fire alarm monitoring service (where applicable) and the fire department emergency communication center in advance of the planned fire drill. The UL monitoring station shall be told to NOT call the fire department during the time of the fire drill.

18.7.2.3 Conducting the Drill.

1. At the previously announced start time the building or the selected floors within the building should be put into alarm.
2. All elevators should be placed in Fire Service Recall (Phase-I Fire Service) to call them to their designated floor(s).
3. Design the fire drill to spot check building systems operation to ensure that they function properly.

18.7.2.4 Post-drill.

1. At the conclusion of the drill property management shall immediately notify their fire alarm monitoring service (where applicable) and the fire department emergency communication center that the fire drill has concluded and that the building is to be placed back in normal fire alarm monitoring status.
2. A post fire drill review should be conducted to analyze the effectiveness of the fire drill and resolve any problems encountered.
3. Recommendations should be made as to how additional training can improve performance.

SECTION 18.8 --- FIRE SAFETY PLAN APPROVAL

18.8.1 Conditions of approval.

Approval of a fire safety plan by the Code Official is contingent upon successful completion of the following:

1. All three phases of training in accordance with Section 18.4.
2. Submission of a completed standard fire safety plan with an adequate number of trained Fire Wardens.
3. Building management and personnel demonstrating adequate knowledge and performance of emergency procedures and basic operation of the building's emergency systems.

SECTION 18.9 --- CERTIFICATES OF APPROVAL

18.9.1 Code Official Approval letters.

Once building management has completed all of the requirements covered within this standard, letters requesting approval shall be prepared and submitted to the Code Official for approval by the individual(s) approved to provide such training. Upon receipt of the request letters, and approval by the Code Official, the Code Official will issue a letter or certificate of approval for that building.

18.9.2 Certificates of Completion of Fire Warden training.

A certificate of satisfactory course completion shall be issued by individuals providing Code Official approved Fire Warden training. Provision and distribution of certificates are solely the responsibility of those individuals providing the class instruction. A copy of such certificate shall be submitted to the Code Official for prior approval. 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 date of the class, written or printed legibly, and shall be considered valid for a period of 5 years from the class date.

18.9.3 Maintaining an approved fire safety plan.

Fire Safety Plan approvals are maintained for a period of 2 years unless any of the following conditions occur:

1. A change of the Fire Safety Director, unless site certified within less than 30 days of the change, *or*
2. The minimum required number of Fire Wardens lack certification, *or*
3. A change of the building's occupancy classification, *or*
4. Building employees are not properly trained or training is not maintained as required by the *Fire Code* and this standard, *or*
5. The Plan becomes outdated due to age or changes in City of Houston codes, ordinances, or standards.

REFERENCES

1. City of Houston *Fire Code*, International Fire Code, 2006 edition, as amended
2. Life Safety-Bureau (LSB) Standard 06, “Fire Depository Boxes”
3. Life Safety-Bureau (LSB) Standard 07, “High-rise Fire Safety Plans”
4. Life Safety Bureau (LSB) Standard 08, “Fire Drills”
5. Fire Marshal’s Letter, “***Burning Issues***”, Tyrone G. Freeman
6. Fire Marshal’s Letter, “Fire Alarm System Maintenance During Construction In High-rise Buildings”, Tyrone G. Freeman
7. “**Building Emergency Response Personnel – Elevators and the Use of Elevators to Investigate Fire Alarms**” Procedures, LSB Rev. 7/23/08
8. Houston Fire Department LSB, HIGH-RISE APARTMENT / CONDOMINIUM FIRE SAFETY PLAN, Rev. 7/23/08
9. Houston Fire Department LSB, HIGH-RISE HOTEL FIRE SAFETY PLAN, Rev 7/23/08
10. Houston Fire Department LSB, HIGH-RISE OFFICE BUILDING FIRE SAFETY PLAN, Rev. 07/23/08



BURNING ISSUES

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PROCEDURES FOR TRANSMITTING AUTOMATIC FIRE ALARMS

It has come to my attention that there is some confusion as to the proper procedure for transmitting automatic fire alarms to this department. Let me clarify this procedure by referring to Chapter 4, Section 401.3 of the City of Houston Fire Code and National Fire Protection Association (NFPA) Standard 72, "National Fire Alarm Code", Section 5-2.6.1.1 which clearly states that any transmission of an alarm shall be relayed without delay.

Simply stated, the first action taken by building personnel responsible for safety evacuation is to call 9-1-1 immediately upon receipt or knowledge of an alarm or any suspicion of fire. This shall be the first step in your evacuation plan. UL Listed central receiving stations and second-party monitoring companies shall also immediately relay any signal they receive from a subscriber building without delay to this department.

After the initial transmission of the alarm to this department, any secondary qualifying information such as a determination of a false alarm may be relayed to our emergency communication center. We will make the determination as to the proper emergency equipment response at that time.

Any occupancy or receiving station found guilty of delaying or otherwise suppressing the immediate relay of alarms or reports in their facility will not only subject themselves to the full liability of any unnecessary damage or loss of life resulting from that delay, but will also receive a citation issued by a Fire Inspector. Fines range from \$500 to \$2000 for each violation of the aforementioned City Ordinance.

Also remember that alarm systems are required to be in proper working order at all times. Repeated alarms due to malfunction or inoperative alarm systems must be corrected by responsible parties.

I know that you are as concerned as we are here at the Houston Fire Department with the safety of personnel and guests at your facility. Working together we can make a difference through quicker response, which is imperative in any emergency where human life and property are at risk.

Tyrone G. Freeman
Fire Marshal



CITY OF HOUSTON

Fire Department

Tyrone G. Freeman

Fire Marshal

Fire Alarm System Maintenance During Construction in Buildings

“The fire and life-safety systems required by City of Houston Codes are to be maintained in an operative condition at all times.” Houston Fire Code Section 901.6

If the nature of construction warrants, the following options are approved by the Houston Fire Department, in accordance with Chapter 9, Section 901 of the City of Houston *Fire Code*, 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.

If cups or bags are installed, a written process shall be established by the Building Management and included in all Building Construction Rules and Regulations to ensure:

- a. Proper installation of cups/bags.
- b. Proper removal of cups/bags whenever the area is unoccupied and following up to verify removal.
- c. Maintenance of daily documentation of involved locations, including contact names.
- d. Designation of appropriate person(s) in the construction area to activate the fire alarm and call the Houston Fire Department and building management in the event of an actual smoke / fire situation.

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

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.

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

1. Notify the Houston Fire Department Office of Emergency Communications by telephone at (713) 884-3143.
2. Check with an alarm company for temporary alternatives.
3. Minimum requirements are a temporary standpipe and two exits from the building.

Violation of the above requirements may subject the building management to Fire Code citations and fines of \$500 - \$2000 for each violation, and fines for violation of the City of Houston False Fire Alarm Ordinance.

Tyrone G. Freeman
Fire Marshal