

LOS ANGELES FIRE DEPARTMENT



FIRE PREVENTION BUREAU

HIGH-RISE RETROFIT ORDINANCES No. 163836 AND No. 165319

Ordinances No. 163836 and No. 165319 (High-Rise Retrofit Ordinances), effective August 21, 1988 and November, 1989 require all existing high-rise buildings*, for which a building permit was issued prior to July 1, 1974, except Group R Division 1 occupancies, to comply with the requirements of LAMC Section 91.8604. These ordinances establish building, electrical, and fire protection code requirements. In order to insure consistent application of these ordinances, to clarify the requirements and to provide interpretations for the most commonly asked questions, the following information is provided:

- Building Requirements and Information
- Electrical Requirements and Information
- Fire Protection Requirements and Information

The Department of Building and Safety has been granting extensions of time to obtain all necessary permits to petitioners who demonstrate a considerable effort and progress in complying with LAMC Section 91.8604.

Definition: * A high—rise building is a building of any type of construction having floors (as measured from the top of the floor surface) used for human occupancy located more than 75 feet above the lowest floor level having building access.

BUILDING REQUIREMENTS AND INFORMATION

1. All buildings affected by these Ordinances are required to be in compliance with LAMC Section 91.8604 and Title 24, Part 2 Section 2-1733 thru 2-1747.
2. Three sets of building plans, indicating compliance with the ordinance, must be submitted to the Building Plan Check Section. These plans shall be approved prior to obtaining a building permit and starting of construction. The building plan shall state that separate plans for electrical and fire sprinkler designs will be submitted

to the Fire Safety Division in compliance with the requirements of LAMC Section 91.8604(f).

The building permit and plan check fees shall be based on the total value of all construction or work for which the permit is issued, including lobby enclosures, replacing fire proofing, patching penetrations in fire rated walls, electrical work, emergency standby electrical power, fire protective signaling systems, emergency exit lighting, fire pumps, automatic fire sprinkler systems, standpipe systems installation and any other permanent equipment installations. (LAMC Sections 91.0102, 91.0103, 91.0304(b)&(c))

3. Elevator Lobbies

All elevators on all levels shall open into elevator lobbies which are separated from the remainder of the building, including corridors and other exits, by walls having a fire-resistive rating of not less than one-hour. All lobby openings other than those for elevator doors, stairway enclosures, and ducts shall be protected with three-fourths-hour automatic-closing fire assemblies with magnetic hold-open devices for door closure actuated by combustion products-type smoke detectors located in the elevator lobbies. All ducts serving the lobbies shall have one-hour fire dampers at penetrations of one-hour fire resistive separations.

EXCEPTION: The main entrance level elevator lobby.

4. Each required stairshaft that extends to the roof or the highest floor of the building shall be provided with a minimum ventilation opening of 20 square feet at the roof level. The 20 square foot opening shall be accessible from the roof and from the inside of the stairshaft. In addition, the opening must be capable of being resealed to permit the Fire Department to pressurize the stairshaft after ventilation is completed.
 - a. The stairshaft ventilation opening shall be identified by a sign posted on the upper landing in the stairshaft.
 - b. The following methods, subject to Fire Department approval, are acceptable for providing stairshaft ventilation:
 1. Roof access door 3'0" X 6'8"
 2. 20 square foot roof hatch
 3. 20 square foot skylight
5. The building plans are to reflect the location of the water storage tank, emergency generator room, fire pump room, elevator lobbies, access for the physically handicapped if required, and the effect on parking, if any.

In order to provide floor space for a water storage tank and/or fire pump(s), existing parking areas may require restriping (use of compact stalls) in accordance with Section 12.21 of the Zoning Code. A reduction of required parking spaces may be allowed as part of the plan review process of the Department of Building and Safety.

6. Sections 2-110(b)11A5, 2-110(b)11B4 of Part 2 of Title 24 of the California Administrative Code specifies the requirements for access by the physically disabled when any alterations, structural repairs or additions are made to existing buildings-see MGD #80, Disabled Access Policy No. 24, for Access Requirements triggered by these ordinances.
7. LAMC Section 91.0303(e) limits the Department in issuing permits to alter historical buildings or structures. Buildings that are listed on the City of Los Angeles' "List of Historic Monuments" must get approval from the Cultural Affairs Department prior to the issuance of any permit. Buildings included in the "National Register of Historic Places" or that have been designated as an Historic Building by the State of California must be reviewed by the Cultural Affairs Department prior to the issuance of any permit. Such review may require an environmental impact report.

ELECTRICAL REQUIREMENTS AND INFORMATION

1. ELEVATOR SYSTEM

a. Smoke Detectors

Each elevator lobby, except main entrance level lobby, shall be provided with an approved smoke detector located on the lobby ceiling. All lobby doors shall close on actuation of any fire alarm initiating devices on that floor, only. The elevator controls shall be designed so that the activation of a lobby smoke detector will cause all elevators serving that lobby to return nonstop to the main entrance level and then be under manual control only. Smoke detectors for elevator lobbies shall be annunciated at the main alarm panel on a per-floor basis.

2. FIRE-PROTECTIVE SIGNALING SYSTEM

- a. When a sprinkler system is installed in an existing high-rise building, the fire alarm system must monitor the sprinkler water flow and valve tampering on a floor-by-floor basis. These functions shall be annunciated at the main fire alarm annunciator panel.

Existing fire alarm control and annunciator panels in many buildings do not have the capacity to handle additional zones and circuits; currently either

underpowered or at maximum power capacity due to tenant improvements over the years.

The annunciation of elevator lobby smoke detectors, sprinkler water flow, and floor control valve tamper on an existing fire alarm annunciator panel will be accepted, provided the panel has adequate space and capacity. If an auxiliary interface panel is intended to be installed, the panel must be fully compatible with the existing fire warning system and must be listed by the California State Fire Marshal and a City recognized electrical testing laboratory for combined use with the existing specific listed unit and model as an auxiliary fire alarm control and annunciator panel.

Existing fire warning systems are acceptable provided all wiring and alarm initiating devices are supervised. The existing system shall have the capability of receiving subsequent alarm initiation after each silencing.

New fire warning control and annunciator panels may be installed provided they are fully compatible with the existing system and all of the aforementioned functions shall be demonstrated in a Fire Department Regulation No. 4 test.

If the building signaling system needs to be replaced, it shall conform to the requirements of the Los Angeles City Fire Code, Division 118 and 122, and Section 1807 of Title 24, California Code of Regulations for new high rise buildings, and the Los Angeles City Electrical Code.

Existing fire warning systems and initiating devices (i.e. smoke detectors and manual pull stations) shall not be taken out of service prior to inspection and final approval of the new system by the Department of Building and Safety and the Fire Department. (LAMC Section 57.122.03)

The Fire Department shall be notified immediately whenever the fire warning system becomes inoperative.

A Fire Watch shall be established using approved Fire Safety officers whenever the fire warning system is inoperative or out of service. Down time shall be limited to non-business hours and a Fire Watch log shall be maintained. (LAMC Section 57.13.03)

Alarm devices shall give the same distinct and uniform audible sound on all floors (bells and speakers shall not be installed in the same system). (LAMC Section 57.122.03) When a new fire warning system and panels are being installed, initiating devices on all floors shall be tied into the new panel within a time period approved by the Fire Department. This will eliminate having a dual system within the building.

- b. Manual pull stations shall be located in the corridor on each building level adjacent to stair shafts, fire escapes and ground floor exits. Sounding devices shall be clearly audible on the floor of actuation with the capability of sounding a general alarm throughout the building by manual means from the building control station, or fire alarm panel location.

(1) Audibility Level

Alarm indicating devices of a fire alarm system intended to alert all occupants shall be so located as to cause a level of audibility of not less than 10 db above ambient noise levels measured four feet above the floor.

(2) Existing Systems

Existing fire protective signaling systems complying with Los Angeles Fire Code will be allowed to remain. Installation, alteration or repair of Fire-protective signaling systems shall be performed under permit issued by the Fire Safety Division of the Department of Building & Safety. If Plan Check is required, plans are to be approved prior to the issuance of the permit. The actuation of any fire alarm initiating device shall cause all audible devices to sound throughout the floor of actuation. Fire alarm initiating devices shall include, but not be limited to, the following:

- a. Manual pull stations
- b. Fire sprinkler flow and tamper switches
- c. Elevator recall smoke detectors
- d. Area smoke and/or heat detectors
- e. Building air-handling duct smoke detectors
- f. Special fire extinguishing systems

3. EMERGENCY POWER SYSTEMS

a. Emergency Power

(1) Generation System

A permanently installed on site emergency power generation system consisting of one or more generators, including the prime mover, shall be provided. In the event of failure of the normal source of electrical service, the emergency power generation system shall provide an alternate source of electrical energy to serve at least the designated power loads set forth in Subdivision 2 of this subsection.

2. Power Loads

The power load requirements for sizing the emergency power generation system shall include, but not necessarily be limited to, the following:

- a. Exit and directional signs
 - b. Emergency exit lighting
 - c. Fire alarm systems
 - d. Fire-detection systems
 - e. Sprinkler alarm systems
 - f. Electrically driven fire pumps
3. Emergency lighting shall be provided in elevator lobbies, building control stations, generator rooms, fire pump rooms, elevator equipment rooms, and ma-in electrical rooms.
 4. The installation of strobe lights as a visual alarm device will be required by the Fire Department as a part of the new fire signaling installation.
 5. Emergency power need not be provided for existing elevator equipment or for elevator car lighting.
 6. All required emergency lighting and exit sign illumination shall be from the emergency generator. The illumination may be internal, or, for existing connections only, external.

7. Transfer Time

The emergency power generation system shall be equipped with suitable means for automatically starting the generator set upon failure of the normal electrical service and shall provide for the automatic transfer and operation of electrical systems and specified equipment at full power within 60 seconds of such normal service failure.

8. Fuel Supplies

On-site fuel supplies for prime movers of emergency generator sets and fire pumps shall be sufficient for at least four hours at full demand operation. Plans for the location and installation of fuel tanks shall be approved by the Fire Department. Permits for tank fill shall be secured from the Fire Department, also.

FIRE SPRINKLER & STANDPIPE SYSTEMS
REQUIREMENTS AND INFORMATION

1. Plans of standpipe and fire sprinkler systems shall be submitted for plan check to the Fire Safety Division (F.S.D.) of the Department of Building and Safety and to the Building Standards Unit of the Fire Department and approval shall be obtained prior to:
 - a. the issuance of the permits by the F.S.D.
 - b. the start of the installation
2. Every building within the scope of this section shall be provided with an automatic fire sprinkler system complying with LAMC Section 94.0701, 94.0702, 94.0703, and 94.0704. The sprinkler system shall cover all areas of the building.
3. LAMC Section 91.8604(f)(5) designates combined sprinkler and standpipe systems volume of tank and number of pumps depending only on building height. Pressure of 65 psi at each 2 1/2" Fire Hose Valve outlet is required. In buildings lower than 150 feet, a water storage tank is not required. In taller buildings, either a 20,000 or 40,000 gallon tank is required. The automatic fire sprinkler systems and 3-way roof standpipe outlets are not required to flow simultaneously when performing the hydraulic calculations for fire pump selection.
4. The following exceptions from the requirements set forth in above mentioned Plumbing Code Sections are available:
 - a. **EXISTING BUILDINGS 75 FEET TO 150 FEET IN HEIGHT**
 1. Single 750 GPM fire pump (on emergency power or diesel driven, with a four hour fuel supply for the diesel motor)
 2. On site water storage NOT required
 3. 750 GPM flow at 65 psi is required at roof.
 4. If pressure reducing type hose valves are used, a 3" test drain shall be provided
 5. Existing or new sprinkler and standpipe risers shall be connected at the base of the riser system, with a minimum of one Fire Department connection
 - b. **EXISTING BUILDINGS OVER 150 TO 275 FEET IN HEIGHT**
 1. Two 750 GPM fire pumps (on emergency power or diesel driven, with a four hour fuel supply for the diesel motors)

2. 20,000 Gallon water storage tank on site
3. 750 GPM flow at 65 psi is required at roof
- 4&5. Same as for buildings 75 ft. to 150 ft. in height

c. EXISTING BUILDING TALLER THAN 275 FEET IN HEIGHT

1. Three 750 GPM fire pumps, with at least one electric pump (on emergency power). The diesel driven pumps shall have a four hour fuel supply for diesel motors
 2. 40,000 Gallon water storage tank on site
 3. 1000 GPM flow at 65 psi is required at roof
 - 4&5. Same as for buildings 75 ft. to 150 ft. in height
5. Existing standpipes and combined systems including the supply piping thereto shall be hydrostatically tested to comply with Los Angeles Municipal Code Section 94.0701.61 and 94.0701.84, UBC Standards Section 38.213, and Section 1—11.2, NFPA 13, 1989 Edition to insure the safety and operational conditions of all risers.
 6. Removal of Class II standpipes will be required by the Fire Department after the installation of the sprinkler systems is completed. A plumbing permit will be required for the capping of the outlets and inspections will be required by both the Fire Department and the Fire Safety Division of the Department of Building and Safety. Capping within existing cabinets is permitted. The cabinets shall be properly labeled.

All 2 1/2" fire hose valve outlets, not located in fire rated stair shafts shall be removed.

EXCEPTION: 2 1/2" fire hose valve outlets located in parking garages may be retained.

7. FIRE PUMPS

When existing pumps which are taking suction from the City main do not meet the High-Rise Retrofit Ordinance flow and pressure requirements the pumps shall be replaced to meet the required roof pressure of 65 psi.

If existing fire pumps are to be retained in the building, pre-pump acceptance shall be conducted to ensure their performance prior to official City testing of the equipment.

A certified pump curve, if available and a pump performance test curve are required to be submitted with the fire protection plans of the building.

Any new unlisted fire pumps must have Los Angeles Mechanical and Electrical Testing Laboratories approval prior to approval of the entire system and shall be designed, manufactured, and tested in compliance with U.L. Standard No. 448.

Horizontal Fire Pumps. The measurement for flooded suction shall be determined to the center of the pump suction flange (top of inside of flange opening), as required in NFPA 20, 1987 ed., Section 2—9.4.

8. GENERATOR AND FIRE PUMP ROOMS

Every fire pump and emergency generator room shall be protected by fire sprinklers and shall be of one-hour fire resistive construction with minimum one-hour self-closing fire assemblies in all openings (except ventilation and combustion air openings).

Ventilation make-up air, exhaust air, and combustion air ducts shall be of metal, shall be enclosed in at least one-hour fire resistive duct enclosures, and shall be terminated at the outside of the building. However, exhaust air from room ventilation may be discharged into a ventilated parking garage provided that exhaust air ducts terminate at a minimum of 20 feet away from any fire pump rooms or emergency generator rooms; and, sprinklers shall be installed within 3 feet from the discharge opening.

Combustion air is required for all diesel motors and shall be provided in accordance with the manufacturer's recommendations.

Electrical and Mechanical Permits will not be issued until proof that a permit application for the diesel engine has been submitted to the South Coast Air Quality Management District.

9. SEISMIC REQUIREMENTS

- a. Sway bracing requirements will be accepted as outlined in LAMC Sect. 94.0701.55 and in NFPA 13, 1989 Ed. Sect. 3.5.3 or calculations performed by a licensed engineer may be submitted.
- b. Horizontal and vertical sway bracing shall be provided on existing standpipe systems.

- c. Seismic calculations designed in accordance with the requirements of Section 91.2312 of the Los Angeles Municipal Code and signed by a licensed engineer are required for all new equipment and new fire pump installations.
- d. Flexible couplings will not be required on existing standpipe piping, including the bottom and the top of the riser.

10. **WELDING PROCEDURES**

- a. Welding of sections of sprinkler piping performed in place inside the building shall be examined by an approved nondestructive method. The inspection of these field welds shall be verified by a Los Angeles City approved Testing Laboratory in compliance with AWS D10.9 Level AR-3 "Standard for Building Service Piping" and NFPA 51.
- b. The piping shall be sway braced as per Section 9(a) and (b).
- c. A person trained in the proper use of a fire extinguisher shall be at the welding site with a fire extinguisher while the welding is being done.
- d. The Department of Building and Safety, Fire Safety Division, shall be notified a minimum of forty-eight (48) hours prior to the commencing of any welding.
- e. The Fire Department shall be notified in writing at least two weeks (14 days) prior to the commencing of any welding. Contact Commander of High Rise Unit at (213) 482-6907.
- f. A Fire Watch shall be in place prior to commencing of any welding and shall remain in place a minimum of four (4) hours after field welding is completed.

11. **SPRINKLER AND STANDPIPE CHANGEOVER**

- a. The Fire Department shall be notified in writing at least two weeks (14 days) in advance of any anticipated shutdowns or alterations of primary fire protection equipment or primary fire warning systems.
- b. Shutdown of standpipe systems shall be done during non-business hours or when the building is least occupied.
- c. Operational standpipe(s) shall be provided during any shutdown, with appropriate Fire Department Connections, hose and fittings to accommodate a water supply. (Other approved methods may be accepted)
- d. A written proposal of methods to implement operation standpipe system(s) shall be submitted to the Fire Department for review at least two weeks (14 days) prior to any changeover.

- e. Fire pumps shall not be shut down during any changeover.

Exception: Partial or temporary shutdown may be allowed under certain conditions with the approval of the Fire Department.

- f. A Fire Watch using approved Fire Safety Officers may be required at building owner's expense during any fire standpipe system shutdown. (57.13.03 LAMC)
- g. Sprinkler heads shall not be installed in any portion of the system until the system is ready to be placed into service.
- h. Sprinkler systems installed on a partial floor shall be engineered for the entire floor.
- i. Partially sprinklered buildings shall have approved signs minimum size 12"x 12" with one-inch high letters on white background posted in the main lobby and at the fire control station or Fire Department key box location stating (57.138.13):

"BUILDING IS BEING RETROFITTED WITH AN AUTOMATIC FIRE
SPRINKLER SYSTEM. SPRINKLER SYSTEM IS NOT
OPERATIONAL ON ALL FLOORS."

- j. An additional sign shall be posted in each stair shaft at the sprinklered floor(s) only stating:

"FLOOR PARTIALLY SPRINKLERED"
or
"FLOOR FULLY SPRINKLERED"

Additional Information Regarding High-Rise Retrofit Ordinances

An ordinance amending Sections 91.8604 and 98.0403.2 of the Los Angeles Municipal Code relating to the time for compliance with the requirements to retrofit non-residential high-rise buildings with sprinkler systems.

THE PEOPLE OF THE CITY OF LOS ANGELES DO ORDAIN AS FOLLOWS:

Section 1. Paragraph B of Subdivision 2 of Subsection (a) of Section 91.8604 of the Los Angeles Municipal Code is hereby amended to read:

- B. Whenever the Department of Building and Safety serves a Fire/Life Safety Order pursuant to Paragraph 1(B) above, the owner of a building shall: (1) submit main system plans, which include plans for any required water storage tank, fire

pump(s), riser(s), Fire Department connection(s) and all sprinkler riser valves for sprinkler connections on each floor; (2) obtain necessary main system permits as required in that order not later than one year after service of the order; (3) complete necessary corrections required by the Fire/Life Safety Order not later than three years after service of the order for work required under Subsection (f) of this Section.

EXCEPTIONS FOR WORK REQUIRED UNDER SUBSECTION (f) OF SECTION 91.8604:

1. **ELEVATOR LOBBIES.** The owner of a building may request an extension of time to submit plans and obtain permits for work required by Paragraph 6 of Subsection (f) where strict compliance with the time requirements is not practical. Such extension of time may be granted for a two year period and may be renewed for three additional two year time periods provided all permits for work required by Paragraphs 4, 5, and 7 of Subsection (f) are obtained prior to the granting of this exception and all necessary permits for work required by Paragraph 6 of Subsection (f) are obtained not later than nine years after service of the Fire/Life Safety Order and all required corrections are completed not later than 11 years after service of the order.
2. **VACANT BUILDINGS.** If a building is vacant and secured from unauthorized entry, then the owner of the building may apply to the Department of Building and Safety for an extension of time to comply with the requirements of Subsection (f). Such an extension of time may be granted for a two year period and may be renewed for three additional two year time periods, unless to do so poses a threat to health or safety, provided all necessary permits for compliance with Subsection (f) are obtained not later than nine years after service of the Fire/Life Safety Order and all required corrections are completed not later than 11 years after service of the order.
3. **PARTIALLY OCCUPIED BUILDINGS.** If a building is only occupied below the second floor and all floors from the second floor and above are vacant and secured from unauthorized entry, then, the owner(s) of that building may apply to the Department of Building and Safety for an extension of time to comply with the requirements of Subsection (f), provided sprinklers are installed on the occupied floor(s) and a two-hour fire-rated separation is provided between the vacant and occupied floors. Such an extension of time may be granted for a two year period and may be renewed for three additional two year time periods, unless to do so poses a threat to health or safety, provided all necessary permits for compliance with Subsection (f) are obtained not later than nine years after service of the Fire/Life Safety Order and all required corrections are completed not later than 11 years after service of the order. No vacant portion of the building may be reoccupied until the requirements of Subsection (f) are satisfied.

4. **ASBESTOS.** If an owner of a building commits to a program of abatement of asbestos, then the Department of Building and Safety may grant an extension of time to complete the work required under Subsection (f) provided that all necessary permits are obtained and the required water storage tank, fire pumps, riser and all sprinkler riser valves for sprinkler connections on each floor are installed and operational prior to the grant of any extension.

5. **OTHER GROUNDS FOR EXTENSION.** The owner of a building cited for a violation of Subsection (f) of Section 91.8604 may request an extension of time to comply with those requirements. This extension shall not be granted in addition to those extensions granted pursuant to Exceptions 1-4 above. The owner shall submit to the Department a plan of action for compliance and specify why strict compliance is not practical at the time of application. Extensions of time may be granted for a period of one year from the date of application and may be renewed for three additional one year periods. The above referenced plan of action shall include but is not limited to the following.
 - (i) a date for the submittal of plans;
 - (ii) a date to obtain plan approval no later than nine months from the extension approval date;
 - (iii) a date to obtain a permit for the work no more than one year from the extension approval date;
 - (iv) a reporting system designed to provide both the Fire and Building and Safety Departments with the status of job progress by the owner of the building; and
 - (v) a copy to the Department of Building and Safety of an affidavit filed by the owner with the Office of the County Recorder agreeing to comply with the conditions of any granted approvals.

Subsequent extension approvals beyond the initial approval shall also be conditioned on progress of work to install sprinklers in conformance with the plan of work submitted with the approved extension of time.

Request for an extension of time under EXCEPTIONS 1-5 above shall be filed on an application form provided by the Department of Building and Safety and signed by the owner of the building. Applications are subject to review and action by the Department of Building and Safety with concurrence by the Fire Department. An extension of time may be granted only where a good faith effort to comply can be demonstrated by the applicant. Applications shall be processed according to the guidelines set forth in Section 98.0403.2.

Ordinance No. 163836 and No.165319

Effective Date: 08-88 and 11-89

Reviewed: Sept. 27, 1990

Sec. 2. Subdivision 6 is hereby added to Subsection (a) of Section 98.0403.2 of the Los Angeles Municipal Code to read:

6. Requests for an extension of time under EXCEPTION 5 of Section 91.8604 (a) 2 B must be accompanied by a fee of \$300.00 for the initial appeal. The yearly fee for subsequent extensions is \$200.00. The above fees shall include the processing fee and the site verification fee authorized in Subsection (a) of this Section.