

Chapter 27
FIRE CODE

- 27.01 Adoption of Standards by Reference
- 27.01 Additions, Insertions and Amendments

27.01 ADOPTION OF STANDARDS BY REFERENCE

The International Fire Code, 2018 Edition, and subsequent amendments thereto, published by the International Code Council, Inc., shall be and is hereby adopted by reference as the Fire Code for the Village of Lakewood for all buildings and structures. All terms and conditions contained in the International Fire Code, 2018 Edition, and subsequent amendments thereto, published by the International Code Council, Inc., shall be part of the ordinances of the Village of Lakewood the same as if it was adopted verbatim.

27.02 ADDITIONS, INSERTIONS AND AMENDMENTS

The following sections or chapters of the International Fire Code are hereby revised and amended as follows:

- A. Section 101.1, Insert "Village of Lakewood" as the name of jurisdiction.
- B. Section 101.2.1, Appendices, shall be amended as follows:
 - 1. Appendices B, C, E, F, G, H, and I are adopted in their entirety.
 - 2. Appendix D is adopted in its entirety with the following amendments:
 - a. D103.1 Access road width with a hydrant. Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 28 feet (back of curb to back of curb). See Figure D103.1.
 - b. D103.6.1 Roads 20 feet to 24 feet in width. Fire apparatus access roads 20 feet wide up to but less than 24 feet wide (back of curb to back of curb) shall be posted on both sides as a fire lane.
 - c. D103.6.2 Roads 24 feet to 28 feet in width. Fire apparatus access roads 24 feet wide up to but less than 28 feet wide (back of curb to back of curb) shall be posted on one side of the road as a fire lane.
 - d. D103.6.3 Roads more than 28 feet in width. Fire apparatus access roads greater than or equal to 28 feet wide (back of curb to back of curb) shall not be required to post

either side as a fire lane.

3. Appendix N is adopted in its entirety with the following amendment:
 - a. Section N101.1.2, Sprinklered buildings, is deleted in its entirety.

C. Section 102.4, Application of building code, is amended as follows: The design and construction of new structures shall comply with the Village of Lakewood Building Code, and any alterations, additions, changes in use or changes in structures required by this code, which are within the scope of the Lakewood Building Code, shall be made in accordance therewith. References within this code to the International Building Code shall be to the adopted Lakewood Building Code.

D. Section 102.7, Referenced codes and standards, is amended as follows: The codes and standards referenced in this code shall be the most current editions available of those that are listed in Chapter 80, and such codes and standards shall be considered to be part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections 102.7.1 and 102.7.2.

E. Section 109.1, Board of Appeals established, is amended as follows: In order to hear and decide appeals of orders, decisions or determinations made by the Fire Code Official relative to the application and interpretation of this code, all appeals shall be made to the City of Crystal Lake's Administrative Law Judge.

F. Section 109.2, Limitations on authority, is amended as follows: An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equivalent method of protection or safety is proposed. The City's Administrative Law Judge shall have no authority to waive requirements of this code.

G. Section 109.3, Qualifications, is deleted in its entirety.

H. Section 110.4, Violation penalties, is amended as follows: Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the Fire Code Official, or of a permit or certificate used under provisions of this code, shall be fined not less than \$100, nor more than \$500 for each offense. Each day that a violation is permitted to exist shall constitute a separate offense.

I. Section 112.4, Failure to comply, is amended as follows: Any person who shall continue any work after having been served with a stop-work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties by a fine of not less than \$100, nor more than \$500 for each offense. Each day that a violation is permitted to exist shall constitute a separate offense.

J. The definition of "high-rise building" in Section 202, General Definitions, is amended as follows: **HIGH-RISE BUILDING.** A high-rise building shall be a building with an occupied floor located more than 55 feet above the lowest level of Fire Department vehicle access, which may contain any use group classification or combination of use group classifications. (References to 75 feet for high-rise buildings shall refer back to the revised definition of 55 feet.)

K. The exceptions to Section 307.4.3, Portable outdoor fireplaces, are deleted in their entirety.

L. Section 503.4, Obstruction of fire apparatus access roads, is amended to add the following: Any person found guilty of violating the provisions of this subsection shall be fined as set forth in Chapter 1, §1.06 , Penalties

M. The following is inserted as Section 506.2.1: **Exterior access doors.** Where required by the Fire Code Official, exterior doors shall be keyed alike.

N. The following is inserted as Section 506.2.2: **Additional key sets.** For larger buildings, additional keys may be required by the Fire Code Official for the key box.

O. The following is inserted as Section 606.1.1: **Elevator car to accommodate ambulance stretcher.** Where elevators are provided in buildings, at least one elevator shall be provided for Fire Department emergency access to all floors. The elevator car shall be of such a size and arrangement to accommodate a twenty-four-inch by eighty-four-inch (610-mm by 1,930-mm) ambulance stretcher in the horizontal, open position and shall be identified by the international symbol for emergency medical services (star of life). The symbol shall not be less than three inches (76 mm) high and shall be placed inside on both sides of the hoistway doorframe.

Exceptions:

1. Existing buildings requiring installation of an elevator to meet accessibility requirements of

Chapter 19 of the adopted Village of Lakewood Building Code, with travel distance no greater than one floor above or below grade.

2. Single- and two-family detached homes.

P. The following is inserted as Section 901.2.2: **Sprinkler system hydraulic nameplate.** By each hydraulically calculated area, on each drawing, provide a copy of the hydraulic nameplate.

Q. Section 901.4, Installation, is amended as follows: Fire protection systems shall be maintained in accordance with the original installation standards for that system. Required systems shall be extended, altered, or augmented as necessary to maintain and continue protection whenever the building is altered, remodeled or added to. Alterations to fire protection systems shall be done in accordance with applicable standards. All Chapter 9 references to NFPA standards are to be considered part of this code.

R. Section 901.6.3, Records, is amended as follows: Records of all system inspections, tests, and maintenance required by the referenced standards shall be maintained on the premises for a minimum of three years. Contractors performing system inspections, testing, and maintenance shall submit all records to the Village as specified by the Code Official and/or to the City of Crystal Lake if directed to do so.

If the reporting is required to be through an online system, each contractor performing system testing, inspection, and maintenance, and reporting through the online system, will be required to pay a filing fee to the third-party inspection reporting company. The filing fee shall be in such amount as is approved pursuant to the contract entered into between third-party inspection reporting company and the City of Crystal Lake. The filing fee shall be paid directly to the third-party inspection reporting company. The contractor submitting the records may elect to absorb the filing fee for competitive marketing purposes or pass the fee along to the property owner.

S. The following is inserted as Section 901.6.3.2: **Required test certificate submission.** Records of the following tests shall be submitted to the contracted third-party inspection reporting company as stated in Section 901.6.3. Tests shall be completed by a qualified person.

- 901.6.3.2.1 Annual Test of the Fire Sprinkler System (Wet, Dry, Pre-Action/Deluge)
- 901.6.3.2.2 Annual Test of the Fire Alarm System

901.6.3.2.3	Six-Month Test of Kitchen Hood Extinguishing Systems
901.6.3.2.4	Annual Standpipe Inspection
901.6.3.2.5	Annual Test of the Special Suppression (Clean Agent) System
901.6.3.2.6	Annual Test of a Fire Pump
901.6.3.2.7	Annual Test of a Spray Booth Fire Suppression System
901.6.3.2.8	Annual Test of an Emergency Generator
901.6.3.2.9	Annual Active Smoke Control System Test
901.6.3.2.10	Annual Foam System Inspection
901.6.3.2.11	Annual Private Hydrant System Inspection
901.6.3.2.12	5-Year Obstruction/Internal Inspection of the Fire Sprinkler System
901.6.3.2.13	5-Year Standpipe Hydrostatic Test
901.6.3.2.14	5-Year Fire Escape Inspection

T. Section 903.2, Where required, is amended as follows:
Approved automatic sprinkler systems in new buildings and structures shall be provided in all use groups.

Exceptions:

1. Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided that those spaces or areas are equipped throughout with an automatic fire alarm system in accordance with Section 907.2 and are separated from the remainder of the building by not less than one-hour fire barriers constructed in accordance with Section 707 of the International Building Code or not less than two-hour horizontal assemblies constructed in accordance with Section 711 of the International Building Code, or both.
2. Single- and two-family detached homes. (Townhomes and attached single-family homes with three or more units in a structure shall require an automatic sprinkler system.)
3. Normally unoccupied structures such as sheds, garages and cell towers where approved by the Fire Code Official.
4. Buildings approved by the Fire Code Official due to special circumstances, such as available water supply, temporary use, or location.

U. The following is inserted as Section 903.2.13: **Existing buildings.** Automatic sprinkler systems shall be installed in existing buildings in accordance with this section and Section 1103.5, Sprinkler Systems.

Exception: Single- and two-family detached homes, excluding townhomes or multifamily homes with three or more units.

903.2.13.1 **Change of use.** An approved automatic sprinkler system shall be installed in existing buildings with a change of use group or change of division within a use group where required by this code or the Building Code in the locations described in Sections 903.2.1 through 903.2.12.

903.2.13.2 **Additions.** Every existing building, except for one- and two-family detached dwellings, when expanding the total square footage to 5,000 square feet or more, shall have an approved automatic sprinkler system installed as required in Section 903.2, regardless of fire area, fire partitions, or firewalls that are present or proposed.

903.2.13.3 **Remodeling, repairs or alterations.** An existing building or portion thereof greater than 5,000 square feet, which does not comply with the requirements of this code for new construction, shall not be altered or repaired in such a manner that results in the building being less safe than such building is currently. If, in the alteration or repair, the current level of safety is to be reduced, the building altered or repaired shall conform to the requirements for new construction. To determine if the alteration or repair reduces the current level of safety, the evaluation process and scoring in Chapter 4 of the International Existing Building Code shall be utilized.

903.2.13.4 **Buildings with automatic sprinkler systems.** Additions to buildings with an installed automatic sprinkler system shall install an approved automatic sprinkler system into the addition, regardless of fire area, fire partitions, or firewalls that are present or proposed.

903.2.13.5 **Apartment to condominium conversions.** All apartment to condominium conversions shall require an automatic sprinkler system to be installed in accordance with Section 903.3.

V. Section 903.3, Installation requirements, is amended as follows: Automatic sprinkler systems shall be designed and installed in accordance with Sections 903.3.1 through 903.3.8.

W. Section 903.3.5, Water supplies, is amended as follows: Water supplies for automatic sprinkler systems shall comply with this section and the standards referenced in Section 903.3.1. The potable water supply shall be protected against backflow in accordance with the requirements of this section and the Illinois State Plumbing Code. For connections to public waterworks systems, the water supply test used for design of fire protection systems shall be adjusted to account for seasonal and daily pressure fluctuations based on information from the water supply authority and as approved by the Fire Code Official. Hydrant water flow data used for the design of any sprinkler system shall be not more than one year old. Flow testing of the Village of Lakewood's water supply system for this purpose is the responsibility of the property owner. The Village of Lakewood's Public Works Department shall be the sole operators of the Village's fire hydrants during a flow test.

X. The following is inserted as Section 903.3.7.1: **Hydrant for use with Fire Department connection.** Unless approved by the Fire Code Official, a fire hydrant shall be located within a one-hundred-foot distance of the Fire Department connection for use by the Fire Department. The hydrant shall be located no closer than a distance of 1.5 times the building height.

Y. The following is inserted as Section 903.3.9: **Warehouse buildings Use Group S or F.** Provide all spec warehouse buildings (Use Group S or F) with a ceiling roof height of 25 feet or greater to be protected with an ESFR fire sprinkler system or a hydraulically calculated system for Class IV commodities with rack storage calculated to the greatest storage height.

Z. The following is inserted as Section 903.3.9.1: **Hose valves.** In all warehouse storage areas exceeding 30,000 square feet, and where storage exceeds 12 feet high, provide inside 2 1/2-inch fire hose valves. Locate the hose valves at each door entrance to the warehouse and/or storage area. Provide additional 2 1/2-inch fire hose valves so that no portion of the warehouse and/or storage area is more than one-hundred-twenty-foot maximum travel distance to a fire hose valve. Show the location of all obstructions and/or racks on the drawing.

Where hose valves are required, the following shall apply:

- a. A total water allowance of 50 gpm for a single-hose valve station installation shall be added to the sprinkler requirements.
- b. A total water allowance of 100 gpm for a multiple-hose valve station installation shall be added to the sprinkler requirements.
- c. The water allowance shall be added in 50-gpm increments beginning at the most remote hose valve station, with each increment added at the pressure required by the sprinkler system design at that point.

The fire hose valves system piping shall be:

- a. A separate riser piping system.
- b. The 2 1/2-inch valves shall be supplied by a minimum of four-inch pipe with 2 1/2-inch drops to each valve.
- c. Where system pressures exceed 100 psi, provide a reduced pressure field adjustable type valve.

AA. The following is inserted as Section 903.3.10: **Fire sprinkler system inspectors test valves.** Shall be accessible at all times and located no more than six feet above the finished floor. On multiple-riser systems, test valves shall be marked as to which riser and area it tests.

BB. The following is inserted as Section 903.3.11: **Additional fire detection.** Where automatic sprinklers provide protection to an area with an approved flow switch interconnected to the fire alarm system, and the area is easily identifiable as to the location of the activation, additional automatic fire detection is not required. When a building has numerous rooms protected by a zoned sprinkler system, the Fire Code Official may require additional smoke detection for a rapid means to identify the location of smoke or fire.

CC. The following is inserted as Section 903.3.12: **Safety factor.** Provide a minimum 10% or 5 psi safety factor in the fire protection system hydraulic calculation. The system demand shall be 5-psi minimum below the seasonal low water flow test supply.

DD. Section 903.4.1, Monitoring, is amended as follows: Alarm, supervisory, and trouble signals shall be distinctly different and shall be automatically transmitted to an approved remote supervising station as defined in NFPA 72 or, when approved by the Fire Code Official, shall sound an audible signal at a constantly attended location. The remote supervising station shall be the City of Crystal Lake's dispatch center. The method of connection shall be the CLWAN.

Exceptions:

1. Underground key or hub valves in roadway boxes provided by the municipality or public utility are not required to be monitored.
2. Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position. In occupancies required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.

EE. The following is inserted as Section 903.4.2.1: **Alarm.** An outdoor weather-resistant 24-volt audio/visual device (horn/strobe) shall be installed above the Fire Department connection and powered by the fire alarm control panel.

FF. The following is inserted as Section 903.7: **Occupant notification.** Existing buildings with an installed automatic sprinkler system shall meet the minimum requirements for occupant notification as required in NFPA 72 with change of use or occupancy.

GG. Section 907.2, Where required-new buildings and structures, is amended as follows: An approved manual, automatic or manual and automatic fire alarm system shall be

provided in all use groups unless approved by the Fire Code Official. Specific occupancy requirements in Sections 907.2.1 through 907.2.23 shall be applicable. All fire alarm control panels shall be installed in a location approved by the Fire Department. All fire alarm systems shall be of the addressable type and shall be installed per NFPA 72.

Exceptions:

1. As specified in Section 907.2.6 of this code.
2. Single- and two-family homes shall meet the requirements of the International Residential Building Code.

An approved manual fire alarm system shall be installed in all use groups provided with an automatic sprinkler system, and in accordance with NFPA 72. An approved automatic fire detection system shall be installed in all use groups not provided with an automatic sprinkler system, and in accordance with NFPA 72. Devices, combination of devices, appliances, and equipment shall comply with Section 907.1.3. The automatic fire detectors shall be smoke detectors, except that an approved alternative type of detector shall be installed in spaces such as boiler rooms where, during normal operation, products of combustion are present in sufficient quantity to activate a smoke detector. A reduction of requirements is prohibited unless approved by the Fire Code Official.

HH. Section 907.2.12, High-rise buildings, is amended as follows: High-rise buildings with a floor used for human occupancy located more than 55 feet above the lowest level of Fire Department vehicle access shall be provided with an automatic fire alarm system and automatic smoke detection system in accordance with Section 907.2.12.1, a Fire Department communication system in accordance with Section 907.2.12.2, and an emergency voice/alarm communication system in accordance with Section 907.5.2.2.

Exceptions:

1. Airport traffic control towers in accordance with Section 907.2.21 and Section 412 of the International Building Code.
2. Open parking garages in accordance with Section 406.5 of the International Building Code.
3. Buildings with an occupancy in Group A-5 in accordance with Section 303.5 of the International Building Code.
4. Low-hazard special occupancies in accordance with Section 503.1.1 of the International Building Code.
5. Buildings with an occupancy in Group H-1, H-2 or H-3 in accordance with Section 415 of the International Building Code.
6. In Group I-1 and I-2 occupancies, the alarm shall sound at a constantly attended location and occupant notification shall be broadcast by the emergency voice/alarm communication system.

II. Section 907.2.12.3, Multiple-channel voice evacuation, is amended as follows: In buildings with an occupied floor more than 55 feet above the lowest level of Fire Department vehicle access, voice evacuation systems for high-rise buildings shall be multiple-channel systems.

JJ. Section 907.5.2.3, Visible alarms, is amended as follows: Exception #1 is deleted in its entirety.

KK. The exception to Section 907.5.2.3.1, Public use areas and common use areas, is deleted in its entirety.

LL. Section 907.6.4.2, High-rise buildings, is amended as follows: In buildings with a floor used for human occupancy that is located more than 55 feet above the lowest level of Fire Department vehicle access, a separate zone by floor shall be provided for all of the following types of alarm-initiating devices where provided:

1. Smoke detectors.
2. Sprinkler water-flow devices.
3. Manual fire alarm boxes.
4. Other approved types of automatic fire detection devices or suppression systems.

MM. Section 907.6.6, Monitoring, is amended as follows: Fire alarm systems required by this chapter or by the International Building Code or non-required systems shall be automatically transmitted to an approved remote supervising station in accordance with NFPA 72. The remote supervising stations shall be the City of Crystal Lake's dispatch center. The method of connection shall be the CLWAN.

Exception: Monitoring by a remote supervising station is not required for:

1. Single- and multiple-station smoke alarms required by Section 907.2.10.
2. Smoke detectors in Group I-3 occupancies.
3. Automatic sprinkler systems in one- and two-family dwellings.

NN. The following is inserted as Section 918, Fire System Room Requirements:

918.1 Fire equipment room. New buildings or structures with required fire protection or detection equipment shall require a separate room for installed controls of fire protection or detection equipment unless approved by the Fire Code Official.

918.2 Access. An outside access door is required for use by Fire Department personnel into the fire equipment room when required.

918.2.1 Approved walk. An approved walk is required for access to the room.

918.3 Room dimensions. Room dimensions shall not be less than six feet by eight feet. Access aisles of 36 inches shall be maintained to fire protection and detection controls and equipment. All controls shall be accessible to firefighters in full gear.

918.4 Separation. The room shall have a minimum one-hour wall separation from the rest of the building. Where required by other sections of this code, additional separation will be required.

918.5 Document storage. Document storage devices shall be placed near the panel and be placarded or marked "Fire Prevention Documents, Do Not Remove." Storage devices shall meet the minimum requirements unless approved by the Fire Code Official: Cabinet is to be no less than (1) 14 inches high by 14 inches wide by 4 1/2 inches deep; or (2) four-inch-diameter three-foot-long PVC pipe with both ends capped, with one being a screw-off end.

918.5.1 Required documents. The following approved fire protection or detection system documentation is required within the document storage device:

1. Fire alarm systems:
 - a. Approved as-built plans.
 - b. Sequence of operation.
 - c. Battery and circuit calculations.
2. Fire sprinkler systems:
 - a. Approved as-built plans.
 - b. Cut sheets of all sprinkler head types installed in system.
 - c. Hydraulic calculations.
3. Other protection systems:
 - a. Approved as-built plans.
 - b. Flow point chart or diagrams if applicable.
 - c. Other documentation as required by the code official.

918.6 Fire alarm control panel location. The fire alarm control panel top shall not be mounted more than six feet from the floor, and a working space of 30 inches by 36 inches by 78 inches shall be provided in front of panel. The fire alarm control panel shall not be blocked by the sprinkler system. A separate dedicated circuit is required with lockout for fire alarm equipment.

918.7 Room heaters. A heater shall be provided in rooms with sprinkler controls to prevent freezing. Heaters shall be rheostat controlled with all power switches locked out.

918.8 Low temperature supervisory alarm. Rooms with sprinkler controls require a low-temperature warning device to be installed. Devices shall send a supervisory signal to the fire alarm control panel when temperature in the room drops below 40° F. Low-temperature alarm shall be non-latching.

918.9 Sprinkler floor drain. Rooms with sprinkler controls require the main drain to be piped to the appropriate sized floor drain or directly to the exterior with no obstructions.

OO. Section 3106.5.2, Protection, is amended as follows: Cooking equipment using combustible oils or solids shall meet the following:

1. A noncombustible lid shall be immediately available. The lid shall be of sufficient size to cover the cooking well completely.
2. The equipment shall be placed on a noncombustible surface.
3. An approved portable fire extinguisher for protection from cooking grease fires shall be provided at a location approved by the Fire Code Official.
4. Fire extinguishers with a minimum 2A-10BC rating shall be required and accessible for immediate use in all cooking areas in accordance with Section 906 of this code.

PP. The following is inserted as Section 3106.5.4: **Cooking clearance.** A minimum clearance of 30 inches shall be provided between the public and any heat-producing devices to ensure children or adults do not receive severe burns.

QQ. The following is inserted as Section 3107.4.1: **Deep fryers.** Open flame shall be kept a minimum of two feet from the surface of any deep fryers or similar equipment using oils for cooking.