CITY OF VICTORVILLE
FIRE PREVENTION DIVISION
14345 Civic Center Drive
Victorville, CA 92392
(760) 955-5233

Standard Number

F-1

Revision Date:
11-5-2025

FIRE PREVENTION STANDARD

F-1 FIRE SPRINKLER SYSTEMS IN COMMERCIAL AND INDUSTRIAL BUILDINGS

AUTHORITY

California Fire Code Sections 102.9, 103, and section 104.1.1 as amended in section 8.08.04(5) of the City of Victorville Municipal Code provides that the fire code official of the City of shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to specify requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 903 et. seq. of the California Fire Code. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide minimum requirements for the design and installation of fire sprinkler systems in commercial and industrial use buildings, in order to aid in the detection and control of fires and thus provide improved protection against injury, life loss, and property damage.

SCOPE

This standard, in conjunction with the current edition of NFPA 13, shall apply to the design and installation of, and the modification to, all fire sprinkler systems in commercial and industrial occupancies. This standard and its interpretation is not intended to be applied or enforced where there is any conflict with NFPA 13 or the California Fire Code.

DISCLAIMER

These standards may change without notice. Whenever applicable statutes, regulations, and standards are updated and adopted, the latest shall apply. Please contact the Victorville Fire Prevention Division at (760) 955-5227 to determine if these standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and standards.

SUBMITTALS

The following shall be submitted to the Fire Prevention Division for approval and permit prior to performing any work on any fire sprinkler system:

1) A completed City of Victorville Fire permit application.
2) Detailed plans describing the work to be done. (For information on what must be included on plans, see sections below in this Standard and the City of Victorville Plan Submittal Checklist.)
3) A set of hydraulic calculations for all design areas.
4) Manufacturer's specifications sheets (cut sheets) for all proposed materials and equipment.

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5) A water flow test report from the water purveyor dated within one (1) year of submittal.
6) A set of approved drawings showing private underground water supply lines, labeled.
7) Provide riser location and calculation plate information (if pre-*existing).*
8) Any other important details and information as required by this Standard.
9) Payment of all appropriate fees.

GENERAL

1) All automatic fire sprinkler systems for commercial/industrial projects shall be designed to the requirements of the current edition of NFPA 13 and other recognized standards as they apply to the hazard being protected. No deviations from these recognized standards will be made without approval from the Fire Code Official.

2) All installers of automatic fire sprinkler systems shall be qualified as listed below. Failure to show proper credentials will result in a failed inspection. All installers shall possess:
   a. A State of California C-16 contractor's license (or be employed by the C-16 contractor), OR
   b. A State of California A Contractor's license, AND
   c. An Office of the State Fire Marshal issued Sprinkler Fitter card: Certified; Apprentice; or Trainee. If an Apprentice or Trainee card is possessed, someone with a Certified Sprinkler Fitter card IS required to be on site per California Code of Regulations Title 19.

SYSTEM RISERS

1) All system risers shall be installed inside of buildings to be protected, or in an approved weather-resistant exterior enclosure, and in a location acceptable to the Fire Code Official.

2) Risers shall be accessible to fire department personnel and shall have a minimum of eighteen inches (18") clearance from obstructions and around all components and equipment and shall be accessible for operation, inspection, test and maintenance. Risers located in an interior enclosure shall have a doorway or opening for access a minimum of thirty inches (30") in width and eighty inches (80") in height for access. **(See DIAGRAM F-1.1)**

3) When fire sprinkler systems are installed in buildings constructed for multiple tenants or residents and these systems protect multiple tenant spaces or dwellings, system risers shall be co-located with the Fire Alarm Control Panel inside a minimum 4' X 4' room, and accessible by means of at least one (1) exterior access door of not less than thirty-six inches (36") in width and eighty inches (80") in height. Signage for the room shall be in accordance with the 'Signage' section of this standard. Fire Dept Knox Box shall be installed outside of this door. **(See DIAGRAM F-1.2)**

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DRAINS AND VALVES

1) All drains and test valves shall be piped to the exterior of the building. Outlets of test valves and drains shall discharge preferably into landscaped areas, such as planters or basins, but in no case shall the installation allow water to flow into the public street or storm drain system.
   a. As an alternate to exterior outlets, test valves and drains may have outlets that discharge into interior floor drains connected to the sewer system, or another suitable location approved by the Fire Code Official. Floor drains are to be adequately sized for the flow and pressure of the water being drained from the system.
   b. Such outlets for systems with anti-freeze solutions shall not be allowed to drain onto the site. All anti-freeze systems shall have drain and test valve connections that allow for the safe collection of anti-freeze solutions.
2) Each sprinkler system shall have a Test Valve installed in an approved location.

SYSTEM MONITORING AND ALARMS

1) All valves controlling the fire sprinkler system(s), including any above-ground detector check valves, Post Indicator Valves, and sectional control valves, shall be monitored for tamper by an approved supervising station alarm system meeting the requirements of the current edition of NFPA 72 and City of Victorville Fire Prevention Standard F-5. This system shall be installed and in operation prior to final approval to occupy the building.
2) Each system containing more than twenty (20) sprinkler heads shall be provided with a separate local water-flow alarm bell, installed at the exterior of the protected building closest to the sprinkler riser. Water-flow alarm bells shall be a minimum of eight (8) inches in size and bear a sign stating "WHEN BELL RINGS CALL FIRE DEPT" in minimum one-inch (1") letters on a contrasting background.
3) Other local alarm devices may be provided with the approval of the Fire Code Official. See City of Victorville Fire Prevention Standard F-5 for fire alarm interior water-flow notification requirements.

SPECULATIVE WAREHOUSE BUILDINGS

Newly constructed warehouse buildings without an end user ("speculative") shall have the sprinkler system designed in accordance with NFPA 13 for a density of 0.6 gallons per minute / per square foot with a minimum operating area of 3,000 square feet.

1) When approved by the Fire Code Official, speculative warehouse buildings shall be allowed to have an Early Suppression Fast Response (ESFR) sprinkler system(s) designed and installed in

accordance with NFPA 13.

2) When approved by the Fire Code Official, speculative warehouse buildings having interior roof deck maximum heights of twenty-five (25') feet or less shall be allowed to have the sprinkler system designed in accordance with NFPA 13 for a density of 0.45 gallons per minute / per square foot with a minimum operating area of 3,000 square feet. When approved by the Fire Code Official, speculative warehouse buildings having interior roof deck maximum heights of twenty (20) feet or less shall be allowed to have the sprinkler system designed in accordance with NFPA 13 for a density of 0.33 gallons per minute / per square foot with a minimum operating area of 3,000 square feet.

HYDRAULIC CALCULATIONS

1) All hydraulic calculations shall be designed for the system demand not to exceed 90% of the available water supply, or at least ten (10) p.s.i. below the available water supply, whichever is greater. This demand is to include the sprinkler system flow and the combined inside and outside hose allowance requirements, but shall not be required to include fire-flow per Appendix B of the California Fire Code.
2) Hydraulic calculations shall be designed using data either from official flow tests performed by the water purveyor or performed by a licensed contractor and witnessed by the City of Victorville Fire Prevention Division. All water flow tests used in the design of sprinkler systems shall be less than one (1) year old.

TESTING AND MAINTENANCE

All sprinkler systems shall be tested in accordance with the current CCR Title 19 and NFPA 25 CA edition standards. All testing and maintenance reports and documentation shall be submitted to the Victorville Fire Prevention Division via The Compliance Engine website https://thecomplianceengine.com, using an approved automatic extinguishing systems form available on the CA State Fire Marshal website, http://osfm.fire.ca.gov/strucfireengineer/ strucfireengineer_aes.

INSPECTIONS

All sprinkler systems are required to be inspected by the Fire Code Official prior to final approval. The C-16 contractor of record shall contact the appropriate City of Victorville office at least forty-eight (48) hours prior to requesting an inspection and shall notify the City of Victorville office a minimum of twenty-four (24) hours for any cancellation of inspections.
The following inspections shall be required for all fire sprinkler systems in commercial and industrial buildings:

1) "OVERHEAD ROUGH INSPECTION":

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2) All piping and components are required to be in place and shall be exposed and visible, including fire department connection, sprinkler heads, valves, gauges, and flow switches. Installation shall be per the approved plans.
3) All seismic bracing, hangers, and other restraints shall be in place and installed per the approved plans.
4) "OVERHEAD HYDRO INSPECTION":
5) The system piping and all components shall be tested in accordance with NFPA 13.
6) Modifications to existing systems that do not add new branch lines or mains shall not be required to have this inspection per NFPA 13. Modifications to existing systems that include new branch lines or mains shall be subject to a hydro test of the new portion only if more than twenty (20) sprinkler heads are affected.
7) "FINAL INSPECTION":
   a. A thorough flush of the underground supply piping shall be completed prior to connecting to the riser, witnessed by the Fire Prevention Division Inspector (See City of Victorville Standard W-2.)
   b. Water motor gong bell, or electric water-flow alarm bell, and flow switch shall be functional, and all identification signs, system hydraulic data plates shall be installed. Spare head box, including additional sprinklers and sprinkler head wrench, shall be installed.
   c. All sprinkler heads and escutcheons shall be in place. All sprinkler heads shall be free of protective caps, paint, texturing, or any other obstruction. Protective guards shall be installed on all heads in garage and storage areas. Any other protective coatings and plastic bags shall be in place on sprinkler heads installed in locations susceptible to corrosion or overspray.
   d. A flow test shall be performed using the approved Inspector's Test Valve. If electrically operated, the water-flow alarm bell shall be connected to an energized source. Flow of water shall result in an audible alarm on the premises within 5 minutes after such flow begins and until such flow stops.
   e. Contractor will provide a finalized Contractor's Material and Test Certification for aboveground Piping form to the Fire Prevention Division Inspector.

PROTECTION FROM FREEZING

1) All piping for new systems in areas subject to freezing temperatures and not maintained above 40°F shall be approved dry pipe, insulated wet pipe, or antifreeze systems in accordance with NFPA 13.
2) The need for freeze protection shall be as determined by the Fire Code Official and based on the California Energy Commission "Climate Zones" and Part 6 of CCR Title 24, the California Energy Code. Systems located in Climate Zone 16 shall not be protected solely by the use of insulation.

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Detailed maps of Climate Zones may be found on the Internet at http://www.energy.ca.gov.

3) The use of heat tape or other similar products shall be permitted in Climate Zone 14 when installed in accordance with NFPA 13.

4) All antifreeze solutions shall be factory premixed and approved in accordance with NFPA 13, and the California Fire Code. A metal placard shall be placed on all systems using antifreeze solutions at the main riser and at all ITV's. The placard shall contain the necessary information permanently stamped or engraved as shown in **DIAGRAM F-1.3**.

SIGNAGE

1) All signs for drains and test valves required on sprinkler systems shall be made of metal, no less than 10-gauge thickness, colored red and engraved with permanent white letters.

2) Hydraulic calculation plates required on risers shall be made of metal, unpainted, and the information permanently stamped or engraved, and attached to the riser with a metal "U- bolt" or chain.

3) All doors or other building materials enclosing or concealing sprinkler risers shall have a durable metal sign with a minimum of three-inch (3") red block letters on a contrasting background stating "FIRE RISER INSIDE," per **DIAGRAM F-1.4.** Signs shall be installed at five feet (5') above the finished floor on the outside of fire sprinkler riser access doors.

SPECIAL SITUATIONS

1) Sprinkler heads shall not be located within smoke vents or skylights.

2) Special uses, high-rise buildings, and other hazards may require special design or installation considerations. The contractor is encouraged to contact the Fire Prevention Division regarding these areas not covered in this standard.

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DIAGRAM F-1.1: INTERIOR ACCESS TO SPRINKLER RISE

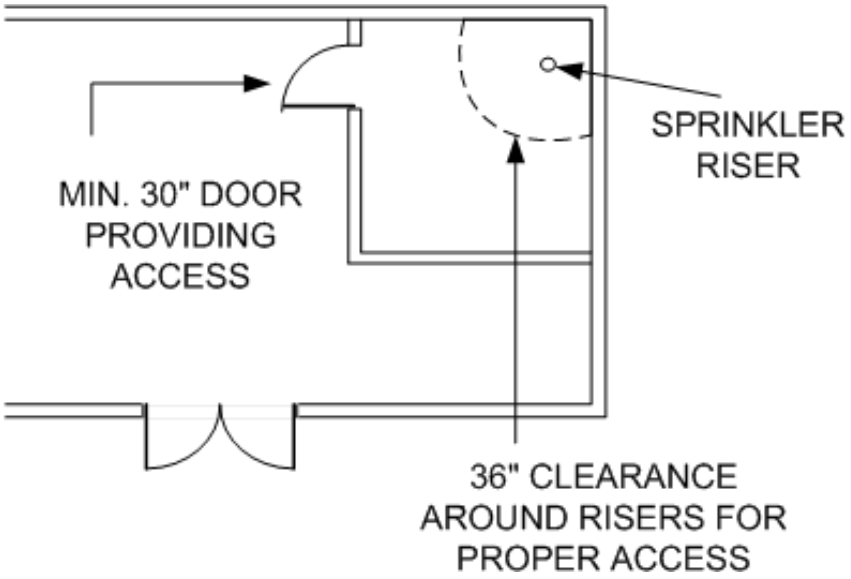

DIAGRAM F-1.2: EXTERIOR ACCESS TO SPRINKLER RISERS

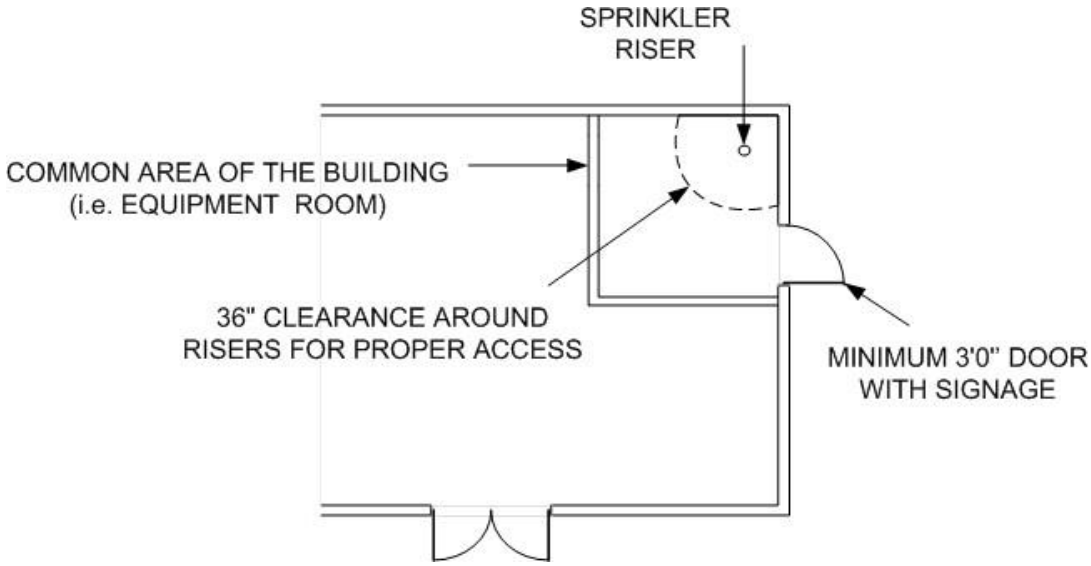

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DIAGRAM F-1.3: SAMPLE PLACARD FOR ANTIFREEZE SYSTEMS

ANTI-FREEZE SYSTEM

The fire sprinkler system in this building contains an anti-freeze solution for protection against freezing.

Type of anti-freeze: _____

Manufacturer: _____

Trade name & brand: _____

Solution concentration: _____ %

System volume: _____ gallons

Protected to: _____ degrees (°F/°C)

Location: _____

Date tested: _____

DIAGRAM F-1.4: DETAIL OF "FIRE RISER INSIDE" SIGN