	Presidio Trust **Fire Marshal's Office** *1750 Lincoln Blvd. San Francisco, California 94129*	**Date**: February 16, 2024 **Revision**: Sept 28, 2026 **Standard**: ***FES-001***
Title: **Commercial Water-Based Fire Suppression Systems**	**Approved By**: *Randy Amores*	

SCOPE:

The Presidio Trust Area B is establishing this standard for the submittal of commercial water-based fire suppression systems. This standard shall meet the following code requirements:

- National Fire Protection Association, NFPA 13, Standard for Installation of Sprinkler Systems
- National Fire Protection Association, NFPA 24, Standard for Installation of Private Fire Service Maintenance and their Appurtenances

1. NEW STRUCTURES

1.1. An automatic sprinkler system shall be installed and maintained in all new structures or occupancies which require a building permit issued by the Presidio Trust Permitting Office, regardless of type of construction, use, or size. Any occupancy not specifically mentioned shall be included in the group, which it most nearly resembles, based on the proposed fire and life safety hazard.

2. COMMERCIAL SPRINKLER INSTALLATIONS

2.1. Title Block information shall be submitted to the Presidio Trust Permitting Office (building location, owner, installing contractor, etc.).

2.1.1. Electronic/digital 100% CD plan, calculations, and supporting documentation shall be sent to the Permitting Office via email in PDF format.

2.1.2. Once electronic plans have been approved, the contractor will need to submit one (1) hard copy with wet stamp to the Presidio Trust Permitting Office.

Note: Fire sprinkler design and Installation shall require that the contractor hold a C-16 Fire Protection Contractor License for Fire Sprinkler Installation, and a C-36 Plumbing Contractor License for Underground (commercial) Fire Service Lines as issued by the State of California, State Contractors Licensing Board. All vendors must be on the Presidio Trust Qualified Vendor List.

3. REQUIREMENTS:

3.1. A minimum of three (3) spare sprinklers of each type, temperature rating, and orifice size plus appropriate wrench shall be provided in a box located 5 – 6 feet above the floor next to the system riser. Instructions on maintenance shall be provided to the building owner.

3.2. The following areas will be reviewed and evaluated on all submitted plans:

3.2.1. Water Supply:

3.2.1.1. Minimum water supply

3.2.1.2. Detail about connection to water supply

3.2.1.3. Detail about transition from underground to overhead system

3.2.1.3.1. Materials, details about penetrations, and clearances

3.2.1.4. Hydrant test information:

3.2.1.4.1. Flow location

3.2.1.4.2. Location and elevation of static and residual pressure in relation to the base of system riser

3.2.1.4.3. Static pressure (include low static of record)

3.2.1.4.4. Residual pressure

3.2.1.4.5. Computed flow (in gallons per minute)

3.2.1.4.6. Date of test

3.2.1.4.7. Time of test

3.2.1.5. Test conducted by or information supplied by:

3.2.1.5.1. Circulating dead-end main

3.2.1.5.2. Pipe diameters and type of material

3.2.1.6. System use limited to 90% of available water supply in calculated systems (established by policy).

3.2.2. Design Criteria:

3.2.2.1. Plans submitted to the Permitting Office shall include a plan of each floor, and shall show those items listed in NFPA 13, 2025, Section 27.1.3 that pertain to the design of the system:

3.2.3. Specialized Hazard Classification:

3.2.3.1. High pile storage of materials:

3.2.3.1.1. Commodity classification

3.2.3.1.2. Storage arrangements

3.2.3.1.3. Density and area of sprinkler operation

3.2.3.2. Rack storage of materials:

3.2.3.2.1. Commodity classification

3.2.3.2.2. Storage arrangements

3.2.3.2.3. Density and area of sprinkler operation.

3.2.4. Underground:

3.2.4.1. Installation of underground piping for water-based fire protection systems shall meet the requirements of NFPA 13, 2025 Standard for the Installation of Fire Sprinkler Systems and NFPA 24, 2025 Standard for the Installation of Private Fire Service Mains and Their Appurtenances.

3.2.4.2. Valves (including manufacturer, model number, listing as necessary):

3.2.4.2.1. Provisions for securing from tampering.

3.2.4.3. Hydrants (including manufacturer, model number, listing, number and size of outlets).

3.2.4.4. Piping material (including size, type, and manufacturer).

3.2.4.5. Fittings (include type, manufacturer, and corrosion protection if required).

3.2.4.6. Installation:

3.2.4.6.1. Joining methods

3.2.4.6.2. Thrust blocking or rodding details

4. SYSTEM COMPONENTS (DETAILS):

4.1. Fire Alarm Panels:

4.1.1. Water based fire suppression systems shall be monitored via fire alarm panels approved for type and installation by the Physical Security Department, Presidio Trust, Area B. A listing of approved panels and system components is available from the Physical Security Department.

4.2. Piping:

4.2.1. Materials (include type, manufacturer, and listings if required)

4.2.2. Sizes (include wall thickness or nominal internal diameter)

4.3. Fittings:

4.3.1. Materials (include type, size, and listings if required)

4.3.2. Locations for required fittings

4.3.3. Details about joining methods (specify if threaded, grooved, welded, etc.)

4.4. Hangers:

4.4.1. Materials and configuration (include manufacturer and listing)

4.4.2. Locations (include special conditions for high pressures, wrap around, etc.)

4.4.3. Fastener details (include type, size, etc.)

4.5. Earthquake Bracing:

4.5.1. Materials (include manufacturer, model numbers, sizes, and engineering)

4.5.2. Locations (include lateral, longitudinal, swing joint locations, flexible coupling locations, etc.)

4.6. Drainage:

4.6.1. Main drain (include size, specific location of valve, and specific location of discharge outside of building)

4.6.2. Inspectors test connection (include specific location of valve, and specific location of discharge outside of building)

4.6.3. Auxiliary drains and flushing connections (include size, location, and type of drain fitting involved)

4.7. Valves:

4.7.1. Manufacturer, model number, quantities, and listings

4.7.2. Pressure relief valve(s) on gridded systems

4.8. Sprinklers:

4.8.1. Manufacturer, model number, quantities, and listings for special conditions or devices

4.8.2. Temperature ratings

4.8.3. Special conditions or locations (Exterior – Corrosion protected)

4.9. Alarms:

4.9.1. Local waterflow (include location, type, weatherproof attributes, etc.)

4.9.2. Sprinkler monitoring service (specify if central or remote station, ten heads or more)

4.10. Fire Department Connection:

4.10.1. Location (include size, specific location of connection, and specific location above finished grade)

4.11. Hydraulic Calculations:

4.11.1. Summary sheet

4.11.2. Detailed work sheets

4.11.3. Graph sheet on appropriate semi-log paper

4.11.4. Abbreviations and symbols

4.11.5. Peaking of gridded systems

4.11.6. Most remote (demanding) area

4.11.7. Hydraulic reference points

5. APPROVED PLANS:

5.1. A signed copy of the owner's certificate and the working plan submittal shall include the manufacturer's installation instructions for any specially listed equipment, including descriptions, applications, and limitations for any sprinklers, devices, piping, or fittings. (NFPA 13, 2025 Standard for the Installation of Sprinkler Systems, Section 27.1.4).

6. EXISTING STRUCTURES:

6.1. An automatic sprinkler system shall be provided throughout an existing structure when a building permit is issued to allow additions, alterations, or repairs, within any 12-month period.

6.2. The Fire Marshal may require the installation of fire sprinklers when there is a change in the character or use of any building that increases or may cause an increase in the hazard of fire or threat to life or safety.

6.3. The installation of an automatic fire suppression system may be required when any alteration, addition, or change in the use of a building or portion thereof changes access to the property so as to impede the fire department's ability to control a fire.

7. ADDITIONAL REQUIREMENTS:

7.1. An automatic fire sprinkler system shall protect any usable space below or over a stairway.

7.2. In a basement, attic, or other areas of storage where CPVC pipe is used, the CPVC pipe shall be protected using a product approved by the pipe manufacturer or installed with metallic pipe.

7.2.1. In areas where there is no storage, the CPVC pipe needs to be protected by insulation, (Applicable to Ordinary and Limited Light Hazard Sprinklered Occupancies).

7.3. All aboveground fire sprinkler (or fire hydrant) water supply pipe shall be metallic.

8. PRESSURE TEST:

8.1. Underground: All underground fire sprinkler water supply pipe shall be pressure tested by the installer to not less than 50 psi above the design working pressure for two (2) hours.

8.2. All new underground pipe shall be tested at 200 psi for two hours per NFPA 13, 2025 Standard for the Installation of Sprinkler Systems, Section 6.10.2.1.4. The pressure test shall require verification by the Presidio Trust Fire Marshal's Office.

8.3. The installing contractor shall complete the Contractor's Material and Test Certificate for Underground Piping and present a signed and completed copy to the Presidio Trust Fire Marshal's Office prior to the rough/overhead inspection.

9. UNDERGROUND FLUSH:

9.1. The underground fire sprinkler supply pipe shall be flushed by the installing contractor with water at a full flow until the water runs clear, thus ensuring the line is free of contamination before the underground pipe is connected to the sprinkler riser.

9.2. If the underground piping is not to be connected to the riser immediately, the underground pipe shall be capped to prevent contamination.

9.3. The test shall require verification by Presidio Trust Fire Marshal's Office. The installing contractor shall complete the Contractor's Material and Test Certificate for Underground Piping and present a copy to the Presidio Trust Fire Marshal's Office prior to the rough/overhead inspection.

10. HYDRAULIC DESIGN INFORMATION SIGN (HYDRAULIC DATA NAMEPLATE):

10.1. The installing contractor shall identify a hydraulically designed sprinkler system with a permanently marked weatherproof metal or rigid plastic sign secured with corrosion-resistant wire, chain, or other approved means.

10.1.1. Such signs shall be placed at every system riser, floor control assembly, alarm valve, dry pipe valve, pre-action valve, or deluge valve supplying the corresponding hydraulically designed area unless the Fire Marshal approves an alternate location.

10.2. The sign shall include the following information:

10.2.1. Location of the design area or areas

10.2.2. Size (area) of or number of sprinklers in the design area

10.2.3. Discharge densities over the design area or areas

10.2.4. Required flow and residual pressure demand at the base of the riser or fire pump where applicable

10.2.5. Occupancy classification or commodity classification and maximum permitted storage height and configuration

10.2.6. Hose stream allowance included in addition to the sprinkler demand

10.2.7. Name of the installing contractor