



Design Standard

Basic Fire Protection System Design

Purpose:

The purpose of this document is to standardize the basic elements of the Fire Protection system design process. This design standard has the purpose of creating a consistent application of Fire Protection system design throughout the South San Francisco Unified School District, thereby achieving a standard of quality for maintenance and reliability throughout all renovation and new building projects.

Design Standard:

Codes and Standards:

- California Fire Code
- NFPA 13, Installation of Sprinkler Systems.
- NFPA 14, Standard for the Installation of Standpipe and Hose Systems
- NFPA, Automatic Sprinkler System Handbook.
- Underwriters Laboratories Fire Protection Equipment Directory.
- Factory Mutual Approval Guide.
- Local Fire Marshal

New buildings within the jurisdiction of the South San Francisco Fire Department will be protected by an approved wet pipe hydraulically calculated automatic fire sprinkler system designed, installed, and tested in accordance with NFPA 13, CCR Title 19, the California Fire Code and local Fire Marshal requirements. The fire sprinkler water connection will be connected to the site fire water service. For new buildings within the jurisdiction of the South San Francisco, Daly City and San Bruno Fire Departments, review with Fire Marshal.

Design and furnish all materials, labor and equipment necessary for installation of the hydraulically designed Automatic Wet Sprinkler System throughout the building as generally outlined herein:

- Service main from connection to water main to building entrance riser valve assembly (with post indicator shut off valve, back flow preventer and fire department hose connection).
- Required zone control valve assemblies, drain valves, pressure gauges and signs to identify all valves.



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- Provide a stock 2 of each type of sprinkler head in a locked box near the main fire riser of each building.
- Water flow and valve supervisory switches with alarm signals to building fire alarm system.
- All piping shall be concealed except in equipment type rooms that have no ceilings. In retrofit project, discuss merits of concealing pipes with the District.

Fire Sprinkler Design to be based on flow and residual water pressure tests and submitted to the local and state Fire Marshal for approval prior to installation.

Sprinkler Head Use:

- Exposed, Upright – Mechanical Rooms without ceilings, Equipment Rooms without ceilings, Utilitarian Mechanical Type Shops, Electrical Rooms without ceiling, Telecom Rooms without ceilings.
- Semi-recessed – All removable tile ceilings and hard lid ceilings.
- Concealed – Only in architecturally sensitive locations to match architectural design intent.
- High Temperature – Utilize in all Mechanical Rooms, Electrical Rooms, Telecom Rooms or other areas where high temperatures may be anticipated to be experienced.
- Sprinkler head Guard - Utilize in all Mechanical Rooms, Electrical Rooms, Telecom Rooms or other areas where damage to heads could easily result.
- In corridors, sprinkler heads are ideally located along the centerline. However priority is given to the location of the light fixtures. The sprinkler head layout should avoid placing heads within 6" of any tee.

Pre-Action Systems:

- Provide in all locations where damage due to water is deemed catastrophic and in conjunction with clean agent systems if required. Determination of rooms requiring such shall be made by SSFUSD as part of a risk mitigation consideration.

Approved Manufacturers:

- Not Applicable

Associated Design Standards

- Division 22 Design Standards

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