



Design of Sprinkler Systems in Shell Buildings

TECHNICAL BULLETIN
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City of San Diego
Development Services Department

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The purpose of this Technical Bulletin is to provide the design criteria and requirements to the applicant for providing sprinkler systems in shell buildings without a specific tenant and/or use.

I. GENERAL

All new shell buildings and structures that require fire sprinkler systems must be provided with sprinkler protection prior to receiving a final inspection. For existing sprinkler-protected buildings, where the building or a portion of the building is returned back to a shell condition, sprinkler protection needs to be intact but may not need to comply with all requirements in NFPA 13 until occupancy occurs. When a specific tenant or use is not known at the time of building permit, sprinkler protection must still be provided.

II. NEW SHELL BUILDING WITH FLOOR TO CEILING HEIGHTS 14 FEET OR LESS

When a fire sprinkler system is required or provided in a shell building or a portion of a shell building with a clear height from floor to ceiling of 14 feet or less, the following design criteria must be incorporated in the sprinkler design when the specific tenant or use is unknown.

A. Design Criteria

At a minimum, the sprinkler system for the shell portion must be designed to Ordinary Hazard, Group 2 (OH-2) occupancy criteria, as defined by NFPA 13, with a minimum design area of 3,000 square feet. The maximum area of protection per sprinkler shall be 130 square feet.

B. Outlet Sizing

The minimum sprinkler outlet size permitted is 1 inch.

C. Sprinkler Type

Extended coverage sprinklers are not permitted.

III. NEW SHELL BUILDING WITH FLOOR TO CEILING HEIGHTS GREATER THAN 14 FEET

When a fire sprinkler system is required or provided in a shell building or a portion of a shell building with a clear height from floor to ceiling of greater than 14 feet, the following design criteria must be incorporated in the sprinkler design when the specific tenant or use is unknown.

A. Design Criteria

At a minimum, the sprinkler system for the shell portion shall be designed assuming Class IV, Non-encapsulated, high-piled storage utilizing single and double row racks, as defined by NFPA 13. The storage height must be based upon the maximum possible storage height for the building. The height of the storage must be determined by using the elevation to the bottom of the highest structural joist, beam, or girder. The use of ESFR sprinklers is permissible.

B. Underground Fire Service

The underground fire service main must be sized to accommodate required fire sprinkler system flow(s) including interior hose streams. Plan submittals for overhead systems shall include working underground drawings. Underground drawings "By Others" shall be submitted for review and permit prior to approval of the overhead plans.

IV. EXISTING BUILDINGS RETURNING TO A SHELL CONFIGURATION

When an existing, sprinkler-protected building is proposed to be brought back to a shell condition, these situations will be reviewed on a case-by-case basis by the fire and life safety section of the Development Services Department. Specific design criteria will be determined based upon the existing to remain or proposed future use(s).

Documents Referenced in this Technical Bulletin

- **California Building Code (CBC)**
- **California Fire Code (CFC)**
- **National Fire Protection Association (NFPA) 13, Standard for the Installation of Sprinkler Systems**