

STATE UNIVERSITY CONSTRUCTION FUND

PROGRAM DIRECTIVES

DIRECTIVE 15F-1

Issue date: November 2013

FIRE PROTECTION SYSTEMS

1. General

Refer to Directive 1B-1, "Requirements Relating to Building Code", for Fund policies regarding sprinkler systems requirements for spaces being created, modified and/or renovated as part of the project scope.

2. Design

- a. Provide fire protection systems designed and stamped by a NYS licensed professional engineer.
- b. Design the system using the NFPA 13 Hydraulic Calculation Method.
- c. Perform and submit water supply test (per NFPA 13 Annex A) prior to Schematic Design, along with preliminary hydraulic calculations to determine the need for a fire pump. Provide a 10 psi pressure safety factor between the available municipal water supply curve and the total system demand point to account for seasonal fluctuations. Confirm with the Campus and the water supplier if actual data for seasonal fluctuations is available. Exhaust all options in reducing system pressure drop to avoid a fire pump (pipe sizes, device pressure drop, etc.). Confirm system design will not cause the residual pressure in the water supply main to drop below 20 psi.
- d. Submit the documentation listed in NFPA 13 Chapter "*Plans and Calculations*" with the Pre-Bid submission which includes, but is not limited to, the hydraulic calculations and hydrant flow test.

3. General Requirements

- a. Provide all steel pipe, having a minimum of schedule 40 wall thickness.
- b. Provide quick response sprinkler heads for light hazard occupancies.
- c. Confirm and document the location, type, thread of the fire department connection, the post indicator valve and the stairway standpipe hose connection locations (floor landing or intermediate landing) with the responding Fire Department.

STATE UNIVERSITY CONSTRUCTION FUND

PROGRAM DIRECTIVES

- d. Provide electrically supervised post indicator valve in the location prescribed per NFPA 24.
- e. Provide test header in a location with adequate exterior drainage area which will not pose hazard or nuisance.
- f. Provide a double check valve assembly or reduced pressure zone assembly (if within 1,700 feet of an auxiliary water source or system is chemically treated) without strainers installed.

4. Standpipe

- a. When a standpipe is required by the Building Code, provide a Class 1 manual wet standpipe in fully sprinklered buildings where the highest occupied floor is less than 75 feet above the lowest level of fire department vehicle access and the responding fire department can provide the system demand from their pumper per NFPA 14.
- b. Where a Class I or Class III standpipe is installed provide a hose connection at the highest landing of stairways with stairway access to the roof or on roofs with a slope less than 4 in 12, where stairways do not access the roof, provide a dry hose connection on the roof. Only one standpipe is required to serve the roof. Provide an additional hose connection at the top of the most hydraulically remote standpipe for testing purposes.

5. Elevators

- a. Provide sprinkler head at the top and bottom of the hoistway for all passenger, freight and combination passenger/freight elevators per NFPA 13 unless the exceptions below can be met:
 - 1) Omit the sprinkler head at the top of the elevator hoistway for passenger only elevators where the hoistway is non-combustible and the car enclosure is non-combustible per ASME A17.1.
 - 2) Omit the sprinkler head at the bottom of the elevator hoistway for passenger only elevators where the hoistway is non-combustible and it does not contain combustible hydraulic fluids.
- b. Provide sprinkler head at the top and bottom of the elevator hoistway for elevators that utilize polyurethane coated steel belts or other similar combustible materials.

STATE UNIVERSITY CONSTRUCTION FUND

PROGRAM DIRECTIVES

6. Fire Pump / Room

- a. Per NFPA 20, provide a 2-hour rated separation of the fire pump room; unless the building is fully sprinklered then provide a 1 hour rating.
- b. Provide a circulation relief valve which discharges to a drain, per NFPA 20.
- c. Determine if a pressure relief valve is required per NFPA 20, if it is, discharge to exterior location with adequate drainage area which will not pose a hazard or nuisance.
- d. Fire pump rooms containing an engine-driven fire pump shall be equipped with a dry sprinkler system or heads for freeze protection.

7. Electrical Room

- a. Omit sprinklers from the main electrical room when all of the following requirements are met:
 - 1) Only dry type equipment is used.
 - 2) A 2-hour rated enclosure is provided, and
 - 3) The space is not used for combustible storage, per NFPA 13. In addition to the NFPA requirements, include the installation of a smoke and heat detector connected to the building fire alarm system per Directive 16-3 "Fire Alarm and Detection Systems".

8. Generator Room

- a. Provided a dry sprinkler system or heads in the generator room for freeze protection.

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