

Fire Safety

All new structures and significantly remodeled structures are required to be protected by an Automatic Fire Suppression System.

- A. For any project modifying, altering, or installing a fire sprinkler system, all submissions must include or be accompanied by, design calculations and evidence of licensure by the State of Connecticut as an automatic fire sprinkler system layout technician or licensure by the State of Connecticut as a professional engineer.

- B. The University's Insurer and University of Connecticut's Code Compliance Officer will review all drawings and calculations when they are approximately 50% complete for major topics of concern such as sprinkler system density/area specification, standpipe systems, most recent water supply information and major construction aspects such as type of roofing system, live load roof design and drainage.

- C. Complete drawings, calculations and specifications will again be provided at 100% completion for a more detailed review and approval, to the University's Insurer, The University of Connecticut's Code Compliance Officer, and on "threshold building: projects, the Office of the State Fire Marshal.

- D. All fire protection systems shall be approved by the University Insurer's and shall conform to the Standards of the University and the University Insurer. All equipment shall bear Factory Mutual or UL Label where appropriate.

- E. Reference Standards: Installation of automatic sprinkler systems for fire protection shall comply with the following standards; all latest editions as referenced by the Connecticut State Fire Safety and Building Codes:
 - 1. NFPA 10, Portable Fire Extinguishers
 - 2. NFPA 13, Installation of Sprinkler Systems
 - 3. NFPA 14, Installation of Standpipe and Hose Systems
 - 4. NFPA 20, Installation of Centrifugal Fire Pumps
 - 5. NFPA 22, Water Tanks for Private Fire Protection
 - 6. NFPA 24, Installation of Private Fire Service Mains and their Appurtenances
 - 7. NFPA 214, Cooling Towers
 - 8. NFPA 231, General Storage
 - 9. NFPA 231C, Rack Storage
 - 10. Connecticut Building Code, the Connecticut Fire Safety Code

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F. Design Density

1. Design densities for hydraulically calculated sprinkler systems shall comply with the referenced standards, except Light Hazard shall not be used. Minimum density if ordinary Hazard Group 1.
2. Hose stream allowances shall be provided for each system in accordance with the referenced standards.

F. Alarm Valves

Alarm valves with full trim and water motor gong are required. Shotgun type valves alone are not acceptable.

1. Supervision: Provide tamper, flows and pressure switches to be wired under Division 16, Electrical.

G. Equipment Type Acceptance

All sprinkler heads, valves, fittings and appurtenances shall be Factory Mutual approved types and shall bear the Factory Mutual acceptance or UL Label. All main control valves shall be provided with tamper contacts to connection to the building fire alarm system.

H. Hydraulic Design Submittal

In addition to the distribution of drawings specified in General Conditions, the University's University Code Compliance Officer shall be provided with (4) four sets of shop drawings depicting the complete automatic sprinkler system. Shop drawings shall clearly identify the hydraulically remote area, and all reference nodes shall be included from the supply to an including the remote area. In addition, (4) four complete sets of hydraulic calculations, including detail and summary sheets, shall also be submitted for retention by the University Code Compliance Officer.

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I. Inspection and Tests:

1. All new systems shall be hydrostatically tested at not less than 200 psi pressure for 2 hours. The test pressure shall be read from a gauge located at the low elevation point of the individual system being tested. The inside sprinkler piping shall be installed in such a manner that there will be no visible leakage when the system is subjected to the hydrostatic pressure test.
 2. All sprinkler heads, valves, fittings and other appurtenances shall be installed prior to conducting the final hydrostatic test which shall be witnessed by the University's Code Compliance Officer, the University's Insurer and the Project Coordinator.
 3. A Contractor's Material and Test Certificate for Aboveground Piping shall be completed and submitted, by the Contractor, to the University's Code Compliance Officer, the University's Insurer and the Project Coordinator.
- J. Hydraulic calculations shall be based on approved flow tests, which will be performed by the University of Connecticut upon A/E's request. The Owner and the University's Insurer shall review all hydraulic calculations.
- K. Standpipes shall be automatic wet type or combination type. Provide 2 ½" valved, capped connection at each floor. Parking garages and other unheated structures shall utilize automatic dry type standpipes.
- L. Where dry or preaction systems are required, use standard wall galvanized pipe as approved by Factory Mutual.
- M. Do not provide fire hoses. Fire extinguishers shall be provided. Nominally at 4A60BC Dry Chemical Type.
- N. Plain end pipe couplings shall be used.
- O. To facilitate flushing of the sprinkler system, the ends of all cross mains should be provided with a threaded flushing connection no more than 2" in diameter.
- P. A permanent placard should be provided at the base of each riser stating the design criteria of the system for hydraulically designed systems.