

SUBJECT: AUTOMATIC SPRINKLER AND STANDPIPE SYSTEMS	EFFECTIVE DATE: January 12, 2009
REFERENCES: 2006 SFC Chapter 9 NFPA 13 (2002) NFPA 13R (2002) NFPA 13D (2002) NFPA 14 (2003)	SUPERSEDES: Administrative Rule 9.03.07, October 21 , 2007
	FCAB REVIEW DATE: January 6, 2009
Notice: Administrative Rules are established per 2006 Seattle Fire Code Section 104.1, and they are subject to the Administrative Sections 104.9 Alternate Materials and Methods, Section 104.8 Modifications, and Section 108.1 Appeals.	APPROVED: Signature on File Kenneth Tipler, Fire Marshal

SCOPE: This Administrative Rule provides additional and/or modified requirements for automatic sprinkler and standpipe systems beyond those found in the referenced documents. All of the sprinkler requirements apply to NFPA13 and 13R systems. The only item applicable to NFPA13D systems is item 1.

SPRINKLER REQUIREMENTS:

1. A 10 psi reserve “cushion” between the available water supply pressure and the system design demand pressure is required. Note: The reserve “cushion” is not required for the hose allowance that is added to the demand flow at the sprinkler system point of connection to the water supply.
2. Elevator machine rooms and elevator pits shall be protected in accordance with Seattle Fire Department Administrative Rule 9.08.05 (Department of Planning and Development (DPD) Director's Rule 17-2005).
3. The NFPA 13 and 13R closet exceptions are not allowed when the closet contains a heat-producing appliance.
4. Covered building recesses that are inset 4 feet or more into a building must be sprinklered.

5. All decks shall be sprinklered when they have an eave, canopy, or deck above that is 4 feet or more in width and depth, are recessed 4 feet or more into the building, or if they are enclosed. A deck is "enclosed," if less than 25% of its perimeter is open to the exterior. Solid railings less than 4 ft. in height are not considered enclosures. Please note that the conditions triggering sprinklers on decks apply to both the deck requirements in NFPA standards and section 903.3.1.2.1 of the Seattle Fire Code for NFPA 13R systems titled "Balconies and decks".
6. Storage closets on decks attached to buildings shall be sprinklered.
7. Heat tracing systems for freeze protection shall be UL listed for use with fire protection systems, and be monitored for the following conditions: power failure, current, ground leakage current, and low temperature. The monitoring system shall transmit a supervisory signal to the fire alarm control panel. If no fire alarm is present in the building, the monitoring system shall activate an audible signal in a normally occupied location.
8. All dry pipe systems shall include a high/low air pressure indicator.
9. All dry pipe systems, regardless of size, shall meet a 60 second water to inspector's test outlet trip test time.
10. Stairways in sprinklered buildings require a sprinkler at each floor landing. Sprinklers under intermediate landings are required when the stair shaft walls are combustible.
11. Supply mains for automatic sprinklers may be located under building slabs for a maximum length of 20 ft. when using a single length of pipe.
Exception:
Two inch and smaller combined domestic and fire supplies.
12. Fire department connections (FDC) shall be readily visible and accessible on a street front, preferably on the street on which the building is addressed. Provide signage to identify the system(s) served (basement sprinklers, standpipes, etc.) by each FDC. Fire department connections shall be located at least 10 ft. away from building exits
13. Non-rigid insulation that is not encased in reinforced plastic over sprinklers shall be supported by wire mesh within 2 feet of sprinkler heads.
14. Suspended ceilings that are not continuous between all walls of a room or space (cloud ceilings) are to be treated as obstructions to sprinkler discharge and require sprinklers above and below the obstruction.
15. Sprinklers may be omitted in noncombustible concealed spaces in accordance with NFPA 13 when there are no openings into the concealed spaces. Exception: Openings associated with HVAC systems.
16. Sprinkler systems having a combined domestic/fire supply are acceptable for non-high rise buildings when the concurrent domestic demand is added to the sprinkler system demand at the domestic tee. Use NFPA 13R Table A-2.3.3.1(a) Fixture Load Values with Table A-2-3.3.1(b) Total Estimated Domestic Demand to determine the domestic design demand
Exception: The concurrent domestic demand need not be added when a listed automatic domestic shut-off valve is installed.

17. Provide a contrasting label on the door to the sprinkler control room that reads "SPRINKLER CONTROL ROOM" in minimum 1 inch letters.
18. Existing sprinkler pipe in areas being remodeled is allowed to retain the existing methods of hanging, bracing, and restraint.
Exception: Pipe that is being moved or altered and any pipe within a proximity of two sprinkler heads of the pipe being moved or altered shall use hanging, bracing and restraint methods required by the currently adopted edition of NFPA 13. For the purposes of this requirement, the term pipe is defined as a pipe section between joints or couplings.
19. New sprinkler heads being installed in existing light hazard occupancies are required to be quick response sprinkler heads.
Exception: Remodel projects in light hazard occupancies with existing standard response sprinkler heads that alter less than 30% of the sprinkler heads within a compartment are allowed to use standard response heads throughout the compartment. If any heads within a compartment are changed to quick response heads then all the heads within the compartment are required to be changed to quick response heads. The terms light hazard occupancy and compartment are defined in NFPA 13.
20. Individual tenant storage spaces that do not have full height solid walls are allowed to be without a sprinkler head in the unit providing all of the following conditions are met:
 - 1) The floor area of the unit is within the coverage area of sprinkler heads located outside the unit.
 - 2) The solid portion of the storage unit walls do not violate the obstructions rules of NFPA 13.
 - 3) Wire mesh of a minimum thickness of 11-gage shall be installed horizontally across the top of the unit at least 18 inches below the level of the sprinkler head to restrict the height of storage.
 - 4) No storage is allowed on top or above the wire mesh.
21. Sprinkler systems protecting group R-2 occupancy residential units with the use designated as live/work shall be designed in accordance with NFPA 13 for ordinary hazard group 2 occupancies.
Exception: Live/work units where the non-residential occupancy of the unit is designated as a group B occupancy may be designed in accordance with NFPA 13 for light hazard occupancies.
22. Hydrostatic testing is required for sprinkler system modifications where pipe greater than two inches has been altered.
23. See Chapter 9 of the Seattle Fire Code for sprinkler system requirements in high rise buildings.

STANDPIPE REQUIREMENTS

1. The automatic –dry standpipe (N.F.P.A. 14, Section 3-2.1), is not permitted.
2. Standpipes shall be hydrostatically tested at a minimum of 200 psi for 2 hours at the topmost outlet, or 50 psi above the design pressures in the system whichever is greater.

3. The standpipe flow test is not required during system acceptance or thereafter. However, flow testing of each pressure reducing device is required at acceptance and in accordance with Confidence Testing requirements.
4. The 2-1/2" outlet installed in cabinets shall be turned so that it faces out of the cabinet. Provide a 6 inch clear space around the valve wheel.
5. A fire department connection with a minimum of four 2-1/2 inch ports shall be provided for 6 inch or larger standpipes. Standpipes with two 2 1/2 inch ports are acceptable on standpipes with pipe sizes 4 inch and smaller.
6. Fire Department connections shall be on a street front but do not have to be within 100 feet of a hydrant per N.F.P.A. 14, Section 4-3.5.4.
7. Caps on 2-1/2 inch outlet valves shall have a 1/8 inch hole drilled in them to relieve pressure.
8. See Chapter 9 of the Seattle Fire Code for standpipe system requirements in high rise buildings.

INSPECTION REQUIREMENTS

1. Seattle Fire Department inspection of all overhead sprinkler piping, hangers, sway bracing, etc. prior to cover or concealment is required. Escutcheons or covers for concealed sprinklers must be left off for inspection purposes. Additional inspection after installing the covers is not required.
2. The fire department must inspect all joints, thrust blocks, tie-rods, etc. for new underground pipe prior to cover, and witness the hydrostatic test and flush prior to connection of the sprinkler system to the supply piping. Minimum depth of bury for underground piping shall not be less than 3 feet. The use of existing pipe for new systems shall be subject to inspection to determine the extent of tuberculation within the pipe.
3. The Contractor's Material and Test (CM&T) Certificates for Aboveground Piping and Underground Piping must be provided to the fire department inspector prior to final acceptance of the sprinkler system. An authorized representative of the installing contractor shall sign the CM&T Certificates.
4. Contact the Seattle Public Utilities Water Quality Inspector at (206) 233-2635 at least 48 hours in advance to schedule backflow prevention assembly inspection prior to Fire Department final inspection and sign-off for backflow preventers outside buildings. Call (206) 233-2621 for backflow preventers inside buildings.

PLAN SUBMITTAL REQUIREMENTS:

1. Submit three (3) sets of drawings, one (1) set of catalog cut sheets for all equipment to be installed, and one (1) set hydraulic calculations to the Department of Planning and Development Applicant Services Center. Do not submit drawings directly to the Seattle Fire Department.
2. Submittals shall include all information required by NFPA 13. Plans must include water supply information required by NFPA 13. Plans must include water supply information from a recent (within five years) flow test in close proximity to the project site and in the same pressure zone and on the main to be tapped for sprinkler protection. For existing water supply information, and to schedule a flow test please call Seattle Public Utilities at (206) 684-3333.
3. Submittals are not required for relocation or addition of six (6) devices or less to an existing system.