

CRR POLICY 1306: NFPA 13 R SPRINKLER SYSTEM REQUIREMENTS



Created: May 9, 2019 Revised: November 15, 2023 Effective Date: Immediate
Community Risk Reduction Division – 928-204-8926

This policy is promulgated in accordance with Section 104.1 of the 2012 International Fire Code (IFC).

1. Building(s) meeting the NFPA 13R fire sprinkler requirements of the adopted Fire Code shall be protected throughout with an approved automatic sprinkler system designed and installed in accordance with the 2010 edition of NFPA 13R and the 2012 edition of the International Fire Code and local regulations.
2. A permit is required from Sedona Fire District for fire sprinkler systems and the FACP monitoring equipment installations.
3. Sectional control valves, and all valves controlling water supply, shall be indicating type valves listed for use with sprinkler systems. When supplying more than twenty (20) sprinkler heads, these valves shall be monitored with an electronic tamper switch.
4. Flow switches shall be of the type with retard capability.
5. Inspector's test valves shall be located in conspicuous readily accessible locations and plumbed to the building exterior. A sprinkler orifice of the smallest size used in the building shall be installed in the test pipe outlet.
6. A reduced pressure back-flow prevention device is required (not required in dry systems). Show friction loss for such a device in the hydraulic calculations. The contractor is responsible for contacting the appropriate water purveyor for their requirements.
7. The backflow prevention device shall be installed and tested prior to the introduction of any water into the sprinkler system. This includes water used for hydrostatic testing. Backflow assembly's valves must be electronically monitored.
8. Penetrations through walls shall be caulked with an approved fire caulking, when required by the building code.
9. Wet sprinkler piping in the attic spaces shall be insulated with batted insulation with a minimum R-38 rating or, tented over with batted insulation and blown-in insulation with a combination minimum rating of R-38.
10. Sprinkler piping installed in unheated areas shall be protected with approved freeze protection such as: batted insulation (tented), dry sprinkler heads, anti-freeze.
11. Anti-freeze systems are intended to protect small areas only. Ex: small unheated room, porte cochere, etc.
12. Due to extreme cold weather and past problems with freezing sprinkler piping in our fire district, wet sprinkler piping is not required/allowed in areas subject to freezing such as in: the porte cochere, outside store rooms and closets, open balconies and patios.
13. Anti-freeze systems are required to be flow tested and without wasting the antifreeze solution. One method to accomplish this is with the installation of an U.L. approved flow switch tester.
14. Anti-freeze system(s) must be completely drained and tested at regular intervals in accordance with its listing and NFPA requirements. This is the property owner's responsibility.

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15. Ample horn/strobe devices connected to the water flow devices shall be installed so as to alert all occupants of the building should the sprinkler system be activated. All horn/strobe devices will be located in the breezeway(s) on the exterior of the building only. A bell or exterior horn/strobe shall be located on the portion of the building nearest the FDC. Location of devices may not be changed without approval of the Fire Marshal.
16. Each building shall have its own, separate fire sprinkler riser. More than one (1) building may share the same underground water supply as long as the water tap for the combined systems can meet the sprinkler system supply and pressure needs, with a minimum 10% pressure cushion.
17. The sprinkler riser shall be accessible only via an exterior door immediately adjacent to the control valves. NFPA 13R 4.6 (2013) requires that sprinkler risers serving multiple units be located outside of the dwelling units or in a common area.
18. Building mounted FDC's are allowed for NFPA 13R fire sprinkler systems. Remote fire department connections (FDC) shall be located in the area outside of the building collapse zone (a distance of not less than 150% the height of the building) and within 150 feet of, and on the same side of the street as a fire hydrant. The size of the FDC shall be 2 ½", or sized for the system, with National Standard threads and fitted with approved, locking FDC caps. FDC placement shall be approved by this office.
19. Remote FDC's may serve more than one sprinkler riser.
20. A KNOX BOX is required to be mounted immediately to the left of the of the riser room access door, six feet above finished grade. Occupant shall provide a key for placement inside of the box(s). An additional Knox Box is required at the main entrance to the building if the main entrance is greater than 300-foot travel distance from the riser room as measured around the outside of the building. You may order KNOX BOX key boxes at www.knoxbox.com.
21. The sprinkler system shall be monitored by a U.L. listed Central Monitoring Company when there are 20 or more heads. The fire alarm system shall be capable of receiving and identifying alarm and/or trouble signals from the exact zone of origin. The approved company shall then be able to relay that same information, in plain language, to the Cottonwood Dispatch Center at 928-649-1397. Final zoning descriptions will be approved by the Fire Inspector at the time of the final acceptance testing.
22. A full set of sprinkler "as-built" plans are required to be placed in an approved storage receptacle in the sprinkler riser room. The preferred method for this is an appropriately sized PVC pipe with end caps mounted to the wall near the sprinkler riser. The fire sprinkler system will not receive final approval until this condition has been met.
23. The plans review submittal package shall include a completed permit application, all associated fees, one (1) set of plans (NICET III or IV stamped), one (1) set of hydraulic calculations (each remote area included), flow data for hydraulic calculations shall be no more than two (2) years old, and cut sheets for all equipment and hardware including the backflow prevention device. Plan review will not begin until this office has received all components of the submittal package. The hydraulics calculations must show a 10% pressure cushion. **Note: The permit submittal plans for the fire protection system(s) shall be separate from any other plans and is to be sent directly to this office for review.**

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24. Drawings shall include but are not limited to, pipe hangar locations, riser location, riser detail, nodes, pipe sizes and location, sprinklers, water meter size, architect's scale. Plans must also be drawn at a scale that is clear and readable.
25. A fire inspector must witness all phases of the sprinkler system installation, which includes but is not limited to the underground and aboveground piping, hydrostatic testing, insulation inspection and system final inspection and test. Call this office a minimum of 1 business day in advance for all on-site inspections. Sedona Fire District is committed to providing on-site inspections for all commercial contractors in a timely manner, however the more lead-time you can give us the better we can serve you and other contractors.
26. For the final acceptance testing, the contractor must coordinate with the fire sprinkler contractor and the fire alarm contractor to ensure that both have a representative onsite for the duration of the final acceptance testing. It is preferable to schedule both the fire sprinkler final and the fire alarm final to run concurrently.
27. Wet sprinkler piping freeze protection is vital. The fire inspector must visually inspect all sprinkler system piping insulation before sheet rock, or any other covering is installed.
28. We strongly encourage the sprinkler contractor to work closely with the general contractor in preventing the premature hanging of sheet rock and other building materials that would hide sprinkler piping before hydrostatic testing is completed.
29. All inspections will require the sprinkler contractor to be on site and have an approved set of plans in their possession.
30. The sprinkler contractors are encouraged to contact the Fire Inspector for specific information before design, and during the sprinkler system installation, if there are questions.
31. A sign indicating the location of FDC is required. Consult with the general contractor as to who will be responsible for providing and installing the signs and required KNOX locking FDC caps. You may purchase KNOX locking at www.knoxbox.com.

Any comments or questions regarding the above information may be submitted to:

Community Risk Reduction Division
Sedona Fire District
2860 Southwest Drive
Sedona, AZ 86336