

CRR POLICY 1304: NFPA 13 D SPRINKLER SYSTEM REQUIREMENTS



Created: April 18, 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 13D 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 13D and the 2012 edition of the International Fire Code and local regulations.
2. Water meter and water service lines shall be sized to meet the fire sprinkler pressure and flow demands. **Caution:** this information is needed early in the design process so that corrections are not made after the water meter and service lines are installed. Water meter, service tap sizes, and service line length & size shall be shown on the civil and/or construction plans.
3. The building(s) shall have an exterior bell to alert occupants and neighbors of water flows. (Wirsbo systems require a “Wirsbo Regulator” installed in the sprinkler by-pass piping to prevent the false activation of bells).
4. A sprinkler control valve shall be installed, sealed open and labeled.
5. A main drain shall be installed and labeled.
6. An Inspectors Test Valve (ITV) shall be installed at the most hydraulically remote area of the system and be included in the hydraulic calculations as a single head remote area. Inspector’s test valves shall be located in a readily accessible location on an interior wall 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.
7. All sprinkler piping must be protected from freezing conditions. All wet sprinkler piping shall be installed in interior walls. Design limitations which make the installation of wet pipes in interior walls problematic will be evaluated and approved by the Fire Marshal on a case by case basis. Due to our cold winters and periods of extended hard freezing, it is highly desirable to limit the use of wet piping in exterior walls when possible.
8. Sprinkler piping installed in attic spaces above living spaces shall be on the conditioned side of, and insulated with a minimum R value rating as required by city and county building code requirements. When blown in insulation is used, sprinkler piping must be “tented” over with batted insulation or other means to prevent the insulation from settling below the pipe so as to trap rising heat in the void space around the pipe. If the batting has a lesser than required by city and county codes, blown-in insulation can be applied over the batted insulation in order to achieve the minimum R value insulation rating. Note: Blown-in insulation which settles around the pipes, effectively insulates the piping from heat rising from below and allows sprinkler pipes to freeze.
9. Wet sprinkler piping installed in unheated areas shall not be allowed. Anti-freeze may be used to protect small areas only and not entire buildings.
10. Anti-freeze systems: (Anti-freeze “mixed” solution protected to –20 degrees F.) A reduced pressure back flow device and an expansion chamber are required. CPVC pipe – (glycerin only).
11. 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.
12. Attached garages are required to have sprinkler protection. This is a local Sedona Fire District requirement. The purpose of providing sprinkler coverage to attached garages is to provide early notification to occupants of the structure, delay

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flashover in the garage should a fire occur, and provide a minimum level of protection to openings in the common wall separating the garage from living spaces. Acceptable methods for providing coverage include:

- a. Standard sprinkler coverage and spacing in the garage via wet pipe pendants sprinkler heads. This method requires that the garage be maintained above 40 degrees Fahrenheit and all pipes be insulated with a minimum R value insulation as required by city and/or county building codes for conditioned space to protect from freezing.
- b. Sidewall sprinklers installed in the common wall separating the dwelling unit and the attached garage with appropriate freeze protection.

EXCEPTION: Garages with living space above shall require standard sprinkler coverage and spacing and wet sprinkler piping shall be protected from freezing.

13. A permit is required from the Sedona Fire District for fire sprinkler systems.
14. 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) and cut sheets for all equipment and hardware including the backflow prevention device. The review submittal package shall be electronically submitted. Plan review will not begin until this office receives all components of the submittal package. The hydraulics calculations must show a 10% pressure cushion and shall be based on a flow date of not more than 2 years old. **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.**
15. 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.
16. A fire inspector must witness all phases of the sprinkler system installation, which includes but is not limited to the aboveground piping, rough-in piping, hydrostatic testing, insulation inspection and system final inspection and test. Call this office at least 24 hours in advance for all on-site inspections.
17. 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.
18. All inspections will require the sprinkler contractor or fitter to be on site and have on site an approved set of plans.
19. The sprinkler contractor is encouraged to contact the Fire Inspector for specific information before, and during the sprinkler system installation.

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

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