

Roseburg Fire Department
774 SE Rose St. Roseburg, OR 97470
(541) 673-4459 email: fireprevention@cityofroseburg.org
Residential Fire Sprinkler System
Plan Review Submittal Checklist
Revised – 06/08

The numbers following checklist comments represent **NFPA code sections** unless otherwise specified.

Checklist Legend: ✓ or **OK** = no problem, **N** = need to provide, **NA** = not applicable

1. ____ A minimum of three sets of drawings are provided.
2. ____ System components are listed for intended use, specification/product sheets are provided, 5.1.2. Nonlisted items can be tanks, pumps, hangers, waterflow detection devices, and waterflow valves, 5.1.3.

Drawings shall show the following:

General

3. ____ Dry systems are not permitted unless all components are approved and listed and it serves unheated areas, 8.3.2.
4. ____ Antifreeze system with a 5' interface drop U-loop and trim is detailed when used, 8.3.3.3.1.1.
5. ____ Scale: a common scale shall be used and information shall be legible.
6. ____ Plot plan showing supply piping and pipe size to the building.
7. ____ Building dimensions, elevation views, and the location of partitions.
8. ____ Type of protection for nonmetallic pipe is provided.
9. ____ Dimensions for system piping, type of pipe, and component spacing.
10. ____ Equipment symbol legend and the compass point.
11. ____ Water supply shall provide the water demand rate for 10 minutes, 7 minutes if dwelling unit is one story and less than 2,000 sq. ft., 6.1.2, and .3. Is the supply riser in a heated environment?
12. ____ For a dry system a pressure gauge for air pressure is detailed, 7.3.

Multipurpose Piping Systems

13. ____ The piping system serving both sprinkler and domestic needs is acceptable if:

1) the common water supply serving more than 1 dwelling unit, 5 gpm is added to the sprinkler demand, 2) smoke detectors are provided, 3) all pipe used is listed, 4) pipe connected to the system serving plumbing fixtures need not be listed, 5) permitted by the plumbing AHJ, 6) a sign adjacent to the main shutoff indicates it serves the fire sprinkler system with verbiage per the code section, 7) devices that restrict the flow shall not be added and water treatment and filtering systems shall be bypassed, 6.3

Sprinklers

14. ____ Total number of each type of sprinkler is noted, as are the number of sprinklers per floor.

15. ____ Sprinkler location is correct, ceiling and roof sectionals are provided for clarification.

16. ____ Only residential sprinklers are specified for wet systems unless listed for other uses, 7.5.2.

17. ____ Dry pendent or sidewall sprinklers are permitted to be extended into unheated areas not used for living purposes, 7.5.3.

18. ____ Sprinklers are ordinary temp (135°F-175°F) when ceiling does not exceed 100°F, 7.5.5.1.

19. ____ Sprinklers in areas 101°F-150°F are intermediate temp (175°F-225°F), 7.5.5.2.

20. ____ Intermediate temp sprinklers are used in skylights exposed to direct sun, in unvented concealed spaces under uninsulated roofs or in unvented attics, and near heat sources, Table 7.5.5.3., 7.5.5.3.

21. ____ Type of sprinklers: sprinkler K factors, temperature rating, coverage area, minimum operating pressure, and orifice size are provided.

22. ____ Each sprinkler coverage area is within its listing limitation.

23. ____ Spacing between sprinklers does not exceed 12', sprinklers are not greater than 6' from a wall, and sprinklers are not within 8' of each other unless listing allows it, 8.1.3.

24. ____ Pendent and upright deflectors are within 1" to 4" from the ceiling unless listing allows otherwise, 8.2.1.

25. ____ Pendent and upright deflectors in closets can be installed within 12" of the ceiling, 8.2.1.3.

26. _____ Sidewall deflectors are 4" to 6" from the ceiling unless listing allows otherwise, 8.2.2.1.
27. _____ Closets and storage areas not exceeding **300 cu. ft.** with the lowest ceiling height being 5', a single sprinkler provides coverage and is located at the highest ceiling level, 8.2.6.
28. _____ Wet pipe system is used when not subject to freezing, 8.3.1.
29. _____ Antifreeze systems are detailed and usually limited to 40 gals, A.8.3.3.1. and 8.3.3.3.1.
30. _____ Type of antifreeze solution and percentage is noted on the plans, 8.3.3.2.
31. _____ Systems in areas subject to freezing shall be well insulated or be a dry pipe or antifreeze system, A.8.3.1.
32. _____ Sprinklers are in all areas except bathrooms 55 sq. ft or less; clothes closets 24 sq. ft or less with noncombustible or limited-combustible surface materials, and the least dimension does not exceed 3 feet; garages, open attached porches, and carports; attics, crawl spaces, and concealed spaces not used; covered unheated projections from buildings at entrances/exits as long as there is another means of egress from the dwelling unit, 8.6.

Pipe Support and Hangers

33. _____ Shall comply with submitted manufacturer's instructions and be verified during the field inspection, 7.4.

Pipe and Valves

34. _____ One control valve is provided for both the domestic water and sprinkler, unless a separate control valve is provided for the sprinkler system and it is electronically supervised or locked open, 7.1.1.
35. _____ A drain and test connection is provided on the system side of the control valve, 7.2.1.
36. _____ A drain is detailed for each trapped portion of dry system that is subject to freezing, 7.2.3.
37. _____ A waterflow test connection is provided if a waterflow alarm is provided, 7.2.4.
38. _____ Type and size of pipe is provided. Pipe to be used complies with the pipe listed in Table 5.2.1 and nonmetal pipe is listed for sprinkler use, 5.2.1.

39. ____ Minimum pipe size is 1" for steel, ¾" for pipe other than steel, 8.4.3.
40. ____ ½" nonmetallic pipe and ½" copper pipe with listed special fittings is permitted in network systems under 10 conditions, 8.4.3.3.
41. ____ Special 4-port fitting for network systems connects 1 port not used to another open port at a sprinkler or to the water supply pipe, A.8.4.3.3(1).

Hydraulic Calculations or Design Discharge

42. ____ Reference points match with plans.
43. ____ Pipe size references match the plans and size is determined by hydraulic calcs, 8.4.4.
44. ____ Hydraulic calcs are required when a system is gridded, looped, or connected to a city main less than 4".
45. ____ Legend for calculation abbreviations are provided.
46. ____ Sprinkler head information matches the plans.
47. ____ Water flow information is provided: static psi, residual psi, and gpm.
48. ____ Calculations are correct: static psi, pipe length, gpm, K for drops or branch, elevation data, hose allowance, friction loss, device friction loss (backflow preventer), and equivalent pipe length.
49. ____ Sprinklers without a listed discharge criteria: a single sprinkler discharge is not less than 18 gpm and a multi-sprinkler discharge design is not less than 13 gpm, 8.1.1.1.1.
50. ____ Sprinkler with a listing discharge criteria: the system provides at least the flow required for multiple and single sprinkler operation as specified by the listing, 8.1.1.2.1, and the flow must produce a minimum density of .05 gpm/ft² to the design sprinklers, 8.1.1.2.2.
51. ____ Sprinkler design for flat, smooth ceilings consists of up to 2 sprinklers within the same compartment with the largest water demand, A.8.1.2.
52. ____ Sprinkler design for sloped, beamed, and pitched ceilings could require special design features such as larger flows or a design of 3 or more sprinklers to operate in the compartment, A.8.1.2.
53. ____ Sprinklers without a listed coverage criteria shall not exceed 144 sq. ft. coverage area, 8.1.3.1.