

## 13R Residential Sprinkler System

### Plan Review Checklist

2014 OFC and 2013 NFPA 13R (Updated 07/18/2016)

Date of Review: \_\_\_\_\_ Permit Number: \_\_\_\_\_

Business/Building Name: \_\_\_\_\_ Address of Project: \_\_\_\_\_

Designer Name: \_\_\_\_\_ Designer's Phone: \_\_\_\_\_

Contractor: \_\_\_\_\_ Contractor's Phone: \_\_\_\_\_

No. of Sprinklers: \_\_\_\_\_ Occupancy Classification: \_\_\_\_\_

Reference numbers following checklist statements represent an NFPA code section unless otherwise specified.

**Checklist Legend:**    ✓ or **OK** = acceptable    **N** = need to provide,    **NA** = not applicable

1. \_\_\_\_\_ Three sets of drawings are provided.
2. \_\_\_\_\_ System components are listed for intended use and compatible with the system, and specification data product sheets are provided.

#### **Drawings shall detail the following and items listed in 8.1.7.:**

##### **General**

3. \_\_\_\_\_ The type of system is noted: \_\_\_ wet, \_\_\_ dry, \_\_\_ antifreeze, \_\_\_ preaction, \_\_\_ dry and type of sprinklers are noted: \_\_\_ pendent, \_\_\_ upright, \_\_\_ sidewall, 5.4.
4. \_\_\_\_\_ Scale: a common scale shall be used and plan information is legible, 8.1.3.
5. \_\_\_\_\_ Plot plan showing supply piping and pipe size from the water source to the building, 8.1.7(23).
6. \_\_\_\_\_ Plans provide building dimensions, location of partitions, and fire walls, 8.1.7(6) and (7).
7. \_\_\_\_\_ Room dimensions, labeled rooms, occupancy class of each room. If the room label is not descriptive provide the room's type of use, 8.1.7(8).
8. \_\_\_\_\_ Full height cross elevation views and include ceiling construction, 8.1.7(5).
9. \_\_\_\_\_ Type of protection for nonmetallic pipe, 8.1.7(17).
10. \_\_\_\_\_ Dimensions for system piping, type of pipe, and component spacing, 8.1.7.
11. \_\_\_\_\_ Equipment symbol legend and the compass point, 8.1.7.
12. \_\_\_\_\_ A water flow alarm test connection is provided, 6.16.1.
13. \_\_\_\_\_ All water supply valves and flow switches are supervised, OFC 903.4.
14. \_\_\_\_\_ Exterior flow alarm location is shown and the type identified, if electric, it is listed for outdoor use, OFC 903.4.2., and it is connected to the building fire alarm, if provided, 6.16.2.
15. \_\_\_\_\_ Backflow prevention device, when required by state or local regulations, is shown in the pipe schematic, listed specification sheet and pressure loss data are provided, OFC 903.3.5.
16. \_\_\_\_\_ Antifreeze systems are detailed and designed in accordance with NFPA 13: 5.4.2(4).
17. \_\_\_\_\_ Water supply provides the system demand for at least 30 minutes, 9.2.
18. \_\_\_\_\_ If a fire pump is required it is designed and detailed per NFPA 20 and this book's checklist, 9.4.
19. \_\_\_\_\_ Pressure gauges for the riser are provided and detailed for supply and system pressure, 6.12.
20. \_\_\_\_\_ Riser coverage does not exceed 52,000 sq. ft., 6.1.1.
21. \_\_\_\_\_ Aboveground water supply pipe is protected against freezing conditions, 6.7.2.1.

##### **Sprinklers**

22. \_\_\_\_\_ Total number of each type of sprinkler is noted and the number of sprinklers per floor are noted, 8.1.7(14).
23. \_\_\_\_\_ Sprinkler location is correct, ceiling and roof sectionals are provided for clarification, 8.1.7(5)
24. \_\_\_\_\_ Type of sprinklers: sprinkler K factors, temperature rating, and orifice size, 8.1.7.
25. \_\_\_\_\_ Residential sprinklers are limited for use for wet pipe automatic sprinkler systems unless specifically listed for another use, 6.2.1.2.
26. \_\_\_\_\_ When listed quick-response sprinklers are used in dwelling units, refer to 6.2.1.3 - .4 and 6.3.
27. \_\_\_\_\_ Sprinklers are rated for ordinary temperature (135°F-175°F) when ceiling temperature does not exceed 100°F, 6.2.3.1.
28. \_\_\_\_\_ Sprinklers in areas with a ceiling temperature of 101°F-150°F are equipped with intermediate temperature sprinklers (175°F-225°F), 6.2.3.2.
29. \_\_\_\_\_ Distance of sprinklers from heat sources complies with Table 6.2.3.3.3.
30. \_\_\_\_\_ Sprinklers outside the dwelling unit are quick-response, 6.2.2.2.

31. \_\_\_\_\_ Each sprinkler coverage area is within its listing limitations, 6.2.3.5.
32. \_\_\_\_\_ Sprinkler coverage not required for an architectural area e.g. bay window, etc., up to 18 sq. ft., dimension up to 2 ft. in depth and up to 9 ft. in length and is within sprinkler's spacing distance, 6.4.6.3.3.3.
33. \_\_\_\_\_ Sprinkler coverage is not required for shadowed areas in accordance with 6.4.6.3.3.1 - .2.
34. \_\_\_\_\_ Sloped ceiling spacing is in accordance with Section 6.4.2 and Figure 6.4.2.1.
35. \_\_\_\_\_ Sidewall sprinklers are 4 in. to 6 in. from the ceiling, 6.4.6.2.1.
36. \_\_\_\_\_ Closets and storage areas not exceeding 400 cu. ft. a single sprinkler provides coverage and is located at the highest ceiling level, 6.4.6.3.2.
37. \_\_\_\_\_ Pendent sprinkler are at least 3 ft. from obstructions e.g. light fixtures, ceiling fans, etc. 6.4.6.3. Sprinkler locations for continuous obstructions are in compliance with 6.4.6.3.6.
38. \_\_\_\_\_ Sidewall sprinklers are at least 5 ft. form obstructions e.g. light fixtures, ceiling fans, etc. 6.4.6.3.5.1. Sprinkler locations for continuous obstructions are in compliance with 6.4.6.3.6.
39. \_\_\_\_\_ Soffits and cabinets are provided sprinkler coverage in accordance with 6.4.6.3.6.
40. \_\_\_\_\_ Ceiling pockets are sprinklered unless the pocket volume is 100 sq. ft. or less, its depth is 1 ft. or less, the fall below is protected, it is separated from other pockets by at least 10 ft., and the finish material is non-combustible or limited-combustible, 6.2.3.5.2.2.
41. \_\_\_\_\_ Sprinklers are not required in dwelling unit bathrooms less than 55 sq. ft. 6.6.2.
42. \_\_\_\_\_ Sprinklers are not required in dwelling unit clothes closets, pantries, or linen closets less than 24 sq. ft. with the least dimension being 3 ft. or less, and walls and ceilings have noncombustible or limited-combustible surface materials, 6.6.3.
43. \_\_\_\_\_ Sprinklers are provided in closets containing heating or air-conditioning equipment, 6.6.4.
44. \_\_\_\_\_ Sprinklers are not required for porches, balconies, corridors, and stairs that are open and attached, 6.6.5. If the building construction is of Type V then balconies, decks and ground floor sprinkler coverage is required and sprinkler placement is in accordance with OFC 903.3.1.2.1.
45. \_\_\_\_\_ Sprinklers are not required in attics, penthouse equipment rooms, elevator machine rooms, concealed spaces used exclusively for dwelling unit ventilation equipment, crawl spaces, floor/ceiling spaces, elevator shafts, and other non-used concealed areas, 6.6.6.
46. \_\_\_\_\_ Areas outside dwelling unit are designed in accordance with NFPA13 or NFPA13R 6.2.2.
47. \_\_\_\_\_ Garage separated from the residential building by fire-resistive construction, which qualifies the garage as a separate building is sprinklered in accordance with NFPA 13, 7.3.1.
48. \_\_\_\_\_ Garage accessible by people from more than 1 dwelling unit shall be considered as part of the building and are protected in accordance with 7.2 and are not covered by 7.3.1.

#### **Drains and Test Connection**

49. \_\_\_\_\_ At least a 1 in. nominal diameter drain with a valve is detailed on the system side of the control valve, 6.9.
50. \_\_\_\_\_ A ½ in. drain is provided for each trapped portion of a dry system subject to freezing, 6.9.4.
51. \_\_\_\_\_ At least a 1 in. test connection with a valve is detailed, 6.10.2.

#### **Pipe and Valves**

52. \_\_\_\_\_ 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, 6.8.1.

#### **Pipe Support and Hangers are in Accordance with NFPA 13, Chapter 9. (Following references are NFPA13)**

53. \_\_\_\_\_ Type and locations of hangers, sleeves, and braces are shown. 8.1.7 NFPA13R
54. \_\_\_\_\_ If trapeze hangers are used, the locations are shown, a legend provided to specify span, size of pipe supported, angle and pipe used, and section modulus are provided and comply with section, 9.1.1.7.
55. \_\_\_\_\_ Pipe hanger spacing by 9.2.2, Table 9.2.2.1(a), and the pipe listing information.
56. \_\_\_\_\_ Branch lines show one hanger for each section of pipe, 9.2.3.2.
57. \_\_\_\_\_ Cross mains show one hanger between each branch lines or in compliance with Table 9.2.2.1, and for additional spacing variations refer to section 9.2.4.
58. \_\_\_\_\_ Supports can be on the horizontal pipe section if within 24 in. of the vertical pipe centerline, 9.2.5.1.
59. \_\_\_\_\_ Risers in multi-story buildings show supports at the lowest level, each alternate level, below offsets, and at the top, 9.2.5.4.
60. \_\_\_\_\_ Risers have a distance between supports of not greater than 25 ft., 9.2.5.5.

#### **Seismic Protection in Accordance with NFPA 13, 13R 6.13 (Following references are NFPA13)**

61. \_\_\_\_\_ Flexible couplings may be used for pipe 2½ in. or larger at structural separations or within 2 ft. of expansion joints, within 2 ft. of the top and bottom of all risers, within 1 ft. above and below a floor penetration in multistory buildings, and on both sides of and within 1 ft. of concrete or masonry wall penetrations unless pipe clearance is provided, 9.3.2.
62. \_\_\_\_\_ A seismic separation assembly, for any pipe, is provided at building seismic joints, 9.3.3.
63. \_\_\_\_\_ Proper pipe clearance is noted on the plans for pipe penetrations, 9.3.4.

