13R Residential Sprinkler System Plan Review Checklist 2014 OFC and 2013 NFPA 13R (Updated 07/18/2016)

2011 01 0 414 2010 1411	71 Tota (Opudiod 07/10/2010)
Date of Review:	_Permit Number:
Business/Building Name:	_Address of Project:
Designer Name:	_Designer's Phone:
	_Contractor's Phone:
No. of Sprinklers:	
No. or Sprinklers.	_Occupancy classification.
Reference numbers following checklist statements repre	sent an NFPA code section unless otherwise specified.
Checklist Legend: $\sqrt{\text{or OK}} = \text{acceptable}$ $N = \text{ne}$	ed to provide, NA = not applicable
1 Three sets of drawings are provided.	
	se and compatible with the system, and specification data
product sheets are provided.	
<u>Drawings shall detail the following and items listed in the shall detail the following and items listed in the shall detail the following and items listed in the shall detail the following and items listed in the shall detail the following and items listed in the shall detail the following and items listed in the shall detail </u>	<u>n 8.1.7.</u> :
General	and the second s
3 The type of system is noted: wet, dry, _	antifreeze, preaction, dry and type of sprinklers
are noted:pendent,upright,s 4 Scale: a common scale shall be used and pla	
5 Plot plan showing supply piping and pipe size	
6 Plans provide building dimensions, location of	of partitions, and fire walls, 8.1.7(6) and (7)
7. Room dimensions, labeled rooms, occupance	y class of each room. If the room label is not descriptive
provide the room's type of use, 8.1.7(8).	
8Full 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, a	and component spacing, 8.1.7.
11 Equipment symbol legend and the compass	
12 A water flow alarm test connection is provide	
13 All water supply valves and flow switches are	
	type identified, if electric, it is listed for outdoor use, OFC
903.4.2., and it is connected to the building fi	
15 Backflow prevention device, when required b	y state or local regulations, is shown in the pipe schematic,
16 Antifreeze systems are detailed and designed	·
17 Water supply provides the system demand for	
18 If a fire pump is required it is designed and de	
	nd detailed for supply and system pressure, 6.12.
20 Riser coverage does not exceed 52,000 sq. f	
21 Aboveground water supply pipe is protected	against freezing conditions, 6.7.2.1.
Sprinklers	
22 Total number of each type of sprinkler is note	ed and the number of sprinklers per floor are noted,
8.1.7(14). 23 Sprinkler location is correct, ceiling and roof s	postionals are provided for election 9.1.7(5)
24 Type of sprinklers: sprinkler K factors, tempe	return rating and orifice size 8.1.7
25 Residential sprinklers are limited for use for v	vet nine automatic sprinkler systems unless specifically
listed for another use, 6.2.1.2.	ver pipe automatic sprinkler systems unless specifically
26 When listed quick-response sprinklers are us	ed in dwelling units, refer to 6.2.1.34 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	
temperature sprinklers (175°F-225°F), 6.2.3.2	
29 Distance of sprinklers from heat sources com	
30 Sprinklers outside the dwelling unit are quick	-response, 6.2.2.2.

	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 6.4.6.3.3.12.
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.
	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	
	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.
	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	
	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.
	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.
	A ½ in. drain is provided for each trapped portion of a dry system subject to freezing, 6.9.4.
	At least a 1 in. test connection with a valve is detailed, 6.10.2.
	d Valves
52	One control valve is provided for both the domestic water and sprinkler, unless a separate control valve
D: 0	is provided for the sprinkler system and it is electronically supervised or locked open, 6.8.1.
	pport and Hangers are in Accordance with NFPA 13, Chapter 9. (Following references are NFPA13)
	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
EE	supported, angle and pipe used, and section modulus are provided and comply with section, 9.1.1.7. — Pipe hanger spacing by 9.2.2, Table 9.2.2.1(a), and the pipe listing information.
	Branch lines show one hanger for each section of pipe, 9.2.3.2 Cross mains show one hanger between each branch lines or in compliance with Table 9.2.2.1, and for
37	additional spacing variations refer to section 9.2.4.
50	Supports can be on the horizontal pipe section if within 24 in. of the vertical pipe centerline, 9.2.5.1.
	Supports can be on the horizontal pipe section if within 24 in. of the vertical pipe centerine, 9.2.5.1 Risers in multi-story buildings show supports at the lowest level, each alternate level, below offsets, and
J9	at the top, 9.2.5.4.
60	Risers have a distance between supports of not greater than 25 ft., 9.2.5.5.
	Protection in Accordance with NFPA 13, 13R 6.13 (Following references are NFPA13)
61	
J I	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.
	Proper pipe clearance is noted on the plans for pipe penetrations, 9.3.4.
	— 1 11 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

64	Lateral sway bracing is required at a maximum spacing of 40 ft. for all mains, cross mains, and branch
CE	lines 2½ in. and larger, 9.3.5.5.2.2 Lateral sway bracing is designed not to exceed the maximum zone of influence loading in Tables
oo	_ Lateral sway bracing is designed not to exceed the maximum zone of influence loading in Tables 9.3.5.5.2(a-e) for its spacing, 9.3.5.5.2.3.
66	Lateral sway bracing is provided for the last length of pipe but within 20 ft. of the end of a feed or cross
00	main, 9.3.5.5.7.
67	Lateral sway bracing is required unless all pipe is supported by rods less than 6 in. or by 30° wrap-
· · ·	around U-hooks for any size pipe, 9.3.5.5.10 and .11.
68.	Longitudinal sway bracing is a maximum of 80 ft. for mains and cross mains and within 40 ft. of the end
	of the line, 9.3.5.6.1 and .3.
69	
	exceeds 3 ft. in length, 9.3.5.8.1 and .4.
70	Seismic bracing calculations and the zones of influence are detailed and provided for each brace to be
	used as shown in NFPA Figure A.9.3.5(b) and the design should be in compliance with OSSC Chapter
	16 and ASCE 7, 9.3.5.6 to .10.
/1	Longitudinal and lateral bracing is provided for each run of pipe between the change of direction unless
70	the run is less than 12 ft. and supported by adjacent pipe run bracing, 9.3.5.11. Branch lines are restrained at the end sprinkler of each line and restrained against vertical and lateral
12	_ branch lines are restrained at the end sprinkler of each line and restrained against vertical and lateral movement, 9.3.6.3.
73	Branch line method of restraint is in accordance with section 9.3.6.1.
	Restraints for branch lines shall be at intervals not greater than specified in Table 9.3.6.4 and
	justification for selection of the seismic coefficient is provided, 9.3.6.4.
75	Restraints are detailed for sprigs 4 ft. long or greater against lateral movement, 9.3.6.6.
	irtment Connection
	Detail local water flow alarm location is shown above the FDC, 6.16.1.
77	An FDC is provided for a building exceeding 2,000 sq. ft. or more than 1 story, 6.11.1.
	_FDC is at least a 1½ in. connection and 18 in. to 48 in. above grade, 6.11.2.
	riteria and Hydraulic Calculations
	Reference points match with plans.
	_ Pipe size references match the plans. _ Sprinkler information matches the plans.
	Water flow information is provided; static psi, residual psi, gpm at 20 psi residual with graphed results,
02	9.2 and NFPA13 23.2.1.1.
83.	Calculations are correct: static psi, pipe length, gpm, K for drops or branch, elevation data, hose
	allowance, friction loss, and equivalent pipe length. Minimum sprinkler pressure is that specified by the
	listing or 7 psi, whichever is greater and at least a density of 0.05 gpm/sq. ft. are provided, 7.1.
84	_ Domestic demand calculation are provided and added to the sprinkler system demand where both
	systems share a common water supply main, 9.6.
85	The system provides at least the flow required for multiple and single sprinkler operation as specified by
	the listing, and at the flow must produce a minimum density of .05 gpm/ft ² to the design sprinklers,
06	7.1.1.1.
80	Sprinkler design for flat, smooth ceilings consists of up to 4 sprinklers within the same compartment with the largest flow and pressure demand, 7.1.1.3.1.
87	A legend for calculation abbreviations is provided.
O7	_// logoria for odiodiction abbreviations to provided.
Additional	Comments: