



PROSPER FIRE RESCUE

FIRE MARSHAL'S OFFICE

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Top Reasons Sprinkler System Installations Fail Inspection

1. Failing to comply with the manufacturer's instructions for sprinkler head installation practices [NFPA 13-16.2.5](#)

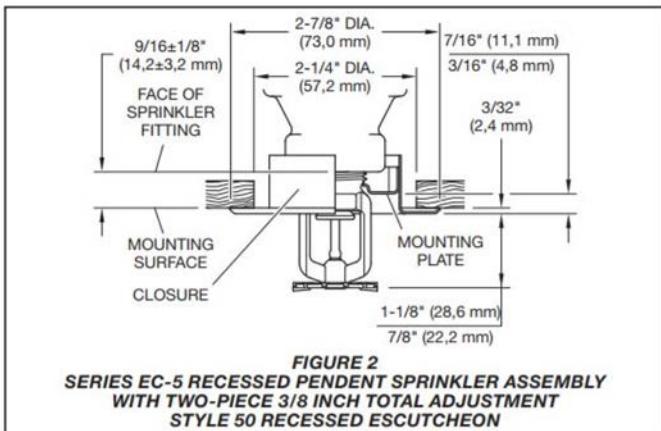


FIGURE 2
SERIES EC-5 RECESSED PENDENT SPRINKLER ASSEMBLY
WITH TWO-PIECE 3/8 INCH TOTAL ADJUSTMENT
STYLE 50 RECESSED ESCUTCHEON

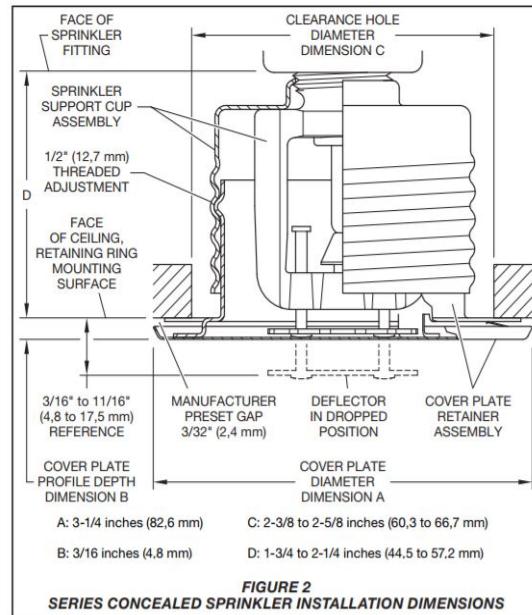


FIGURE 2
SERIES CONCEALED SPRINKLER INSTALLATION DIMENSIONS

Sprinkler head installations remain by far the number one reason these installations fail the final acceptance inspection. Every manufacturer has installation tolerance that is often overlooked. This is also the number one contractor contested enforcement violation cited. The following are typical installations:



Semi-recessed head with less than 1/2" clearance
below the ceiling surface



Concealed head with no clearance below the
ceiling surface

2. Failing to comply with the manufacturers instructions for Flexible Sprinkler Drops [NFPA 13-9.2.1.3.3.1](#)

Length (in.)	Outlet Connection	K-Factor	Max. Number of 90° Bends	Equivalent Length of 1 in. Schedule 40 Pipe, ft.
24"	1/2"	5.6	1	18
	3/4"	8.0	1	18
36"	1/2"	5.6	2	31
	3/4"	8.0	2	34
48"	1/2"	5.6	3	48
	3/4"	8.0	3	51
60"	1/2"	5.6	4	60
	3/4"	8.0	4	65
72"	1/2"	5.6	4	71
	3/4"	8.0	4	72

* UL: 4" minimum bend radius, where C=120



Failing to maintain the 4" minimum radius & number of bends allowed for 2' hose in violation of the U. L. Listing



Crimped the hose during installation to achieve center tile

3. Failing to comply with the proper installation of dry pendent heads [NFPA 13-15.3](#). This environment was a non-climate controlled, non-insulated concealed space.



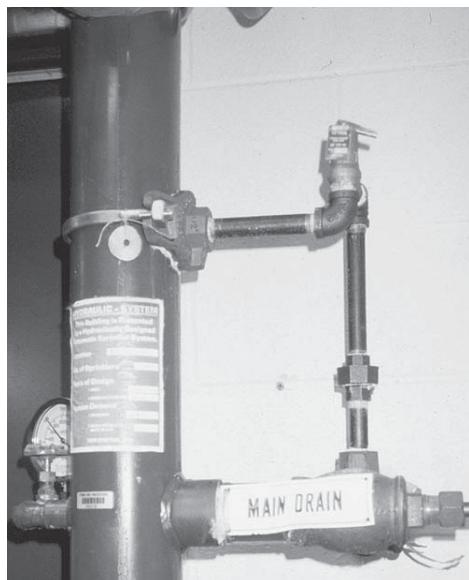
4. Failing to comply with Ordinance/Amendments - **511.4 Fire Department Connection** shall be a 5 inch (5") Storz connection with a 30 degree downward turn, and locking cap. One Storz key shall be furnished to the Fire Department for new installations.



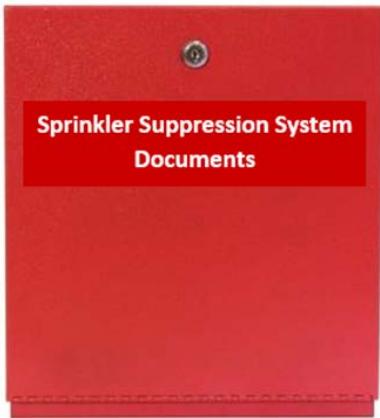
5. Failing to ensure the compliance of the Riser Room

- Hydraulic nameplate installed at riser per section **NFPA 13-28.5.1**
- Spare headbox, sprinkler heads, wrench and sprinkler head label per **NFPA 13-16.2.7**
- Proper space around riser(s) for service per mfg. (Three (3') min.) **IFC 2012 - 901.4.6**
- Ordinance/Amendments – **903.4** Sprinkler system supervision & monitoring I. D. Point reporting
- All riser trim and valves labeled per **NFPA 13-16.9.12.1**
- Sign @ each control valve with the area of building protected **NFPA 13-16.9.12.3**
- Ordinance/Amendments – **509.1 Fire Protection Equipment Rooms.** Rooms containing fire sprinkler riser assemblies and control equipment shall be identified with a 12 in. x 12 in. sign that reads "RISER ROOM."
- Riser room hard-wired for heat & emergency lighting **NFPA 13-7.2.5.2.1**

6. Failing to install a pressure relief valve on all wet pipe sprinkler systems - **NFPA 13-8.1.2.1**



7. Failing to identify inspector's test valve and auxiliary drain valves [NFPA 13-16.9.12.1](#)
8. Failing to install a sprinkler suppression system documents cabinet per Prosper ordinance.



The minimum cabinet specifications shall be:

- 12" X 13" X 2.25"
- 16 gauge steel construction
- Textured, baked-on enamel finish
- Stainless steel piano hinge with CAT 30 keyed door lock

9. Failing to pre-test installations and record the results on the [SF-041 Contractor's Material and Test Certificate for Aboveground Piping](#) in the presence of the owner or the owner's representative [NFPA 13-28.1](#)
10. Failing to pre-test and certify the backflow prevention device & affix the test results on the device [NFPA 13 - 28.1](#)
11. Failing to affix the proper Installation and/or Blue ITM tags in compliance with state regulations:
 - [Texas Insurance Code Chapter 6003](#) (formerly Article 5.43-3) Fire Protection Sprinkler System Service and Installation and 28 TAC §§ 34.700 The Fire Sprinkler Rules – Current publication
 - On completion of the installation, the licensed RME type G, D, or U (as applicable) must have affixed a contractor's material and test certificate for aboveground or underground piping on or near the system riser.
 - An RME must perform the inspection, test, and maintenance (ITM) operation as defined in the rules and NFPA 25

Speaking with a representative of the State Fire Marshal's Office, it was stated: "How can the RME-G sign off on the installation having never visited the site?"