Tentative Interim Amendment

NFPA 13

Standard for the Installation of Sprinkler Systems

2016 Edition

Reference: Table 9.2.6.3.1, A.9.2.6.3.1 and Table 9.2.6.5.3
TIA 16-5
(SC 15-8-18 / TIA Log #1185)

Note: Text of the TIA was issued and incorporated into the document prior to printing, therefore no separate publication is necessary.

1. Revise Table 9.2.6.3.1 to read as follows:

Table 9.2.6.3.1 Maximum Pipe Stand Heights [a]

System Pipe Diameter [c]	Pipe Stand Diameter [b]					
	1-1/2 in.	**2 in.**	**2-1/2 in.**	**3 in.**	**4 in.**	**6 in.**
1-1/2 in.	6.6 ft	9.4 ft	11.3 ft	13.8 ft	18.0 ft	26.8 ft
2 in.	4.4 ft	9.4 ft	11.3 ft	13.8 ft	18.0 ft	26.8 ft
2-1/2 in.	---	8.1 ft	11.3 ft	13.8 ft	18.0 ft	26.8 ft
3 in.	---	5.2 ft	11.3 ft	13.8 ft	18.0 ft	26.8 ft
4 in. up to and including 8 in.	---	---	---	---	14.7 ft	26.8 ft

a. For SI units, 1 in. = 25.4 mm; 1 ft = 0.305 m.

b. Pipe stands are Schedule 40 pipe.

c. System piping is assumed to be Schedule 40 (8-in. is Schedule 30).

2. Revise section A.9.2.6.3.1 to read as follows:

A.9.2.6.3.1 When a pipe stand does not resist lateral (e.g., earthquake or wind) forces, its maximum height and the weight of pipe it can support are based primarily on a limiting slenderness ratio (Kl/r), and on the axial and bending stresses caused by the vertical load applied at a specified eccentricity.

The pipe stand heights presented in Table 9.2.6.3.1 have been calculated using a “K” of 2.1 (i.e., assuming the pipe stand is an individual cantilever column) and a slenderness ratio limit of 300, except where combined axial and bending stresses caused by the vertical load at an eccentricity of 12 in. (0.30 m) controls the design. In these cases, the pipe stand height is reduced such that the allowable axial stress (Fa) is sufficient to limit the combined axial stress ratio (fa/Fa, i.e., actual axial stress divided by allowable axial stress) plus the bending stress ratio (fb/Fb, i.e., actual bending stress divided by allowable bending stress) to 1.0. Two cases are considered, a vertical load at a 12 in. (0.30 m) eccentricity equal to: a) 5 times the weight of the water-filled pipe plus 250 lb (114 kg) using a bending stress allowable of 28,000 psi (193 MPa), and b) the weight of the water-filled pipe plus 250 lb (114 kg) using a bending stress allowable of 15,000 psi (103 MPa). No drift limit was imposed.

When an engineering analysis is conducted, different pipe stand heights could be calculated if other assumptions are warranted based on actual conditions. For example, K=1.0 can be used if the pipe at the top of the pipe stand is braced in both horizontal directions, or a shorter cantilever column could be used to limit drift.

Pipe stands are intended to be a single piece of pipe. For lengths that require joining pipes they should be welded to ensure the strength is maintained.

3. Revise Table 9.2.6.5.3 and replace the Note to read as follows:

Table 9.2.6.5.3 Required Section Modulus for Pipe Stand Horizontal Support Arms (in^3)

Nominal Diameter of Pipe Being Supported (in.)	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4	5	6	8
Section Modulus – Schedule 10 Steel	0.22	0.23	0.24	0.25	0.30	0.36	0.42	0.49	0.66	0.85	1.40
Section Modulus – Schedule 40 Steel	0.22	0.24	0.24	0.27	0.36	0.45	0.54	0.63	0.86	1.13	1.64

For SI units, 1 in. = 25.4 mm.

Note: The table is based on the controlling section modulus determined for a concentrated load at a 1 ft (0.3 m) cantilever using: a) a maximum bending stress of 15 ksi (103 MPa) and a concentrated load equal to the weight of 15 ft (4.6 m) of water-filled pipe plus 250 lb (114 kg), or 2) a maximum bending stress of 28 ksi (193 MPa) and a concentrated load equal to five times the weight of 15 ft (4.6 m) of water-filled pipe plus 250 lb (114 kg).

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