

# Trapeze Member Section Modulus

Ref. NFPA 13-2007, Sec. Table 9.1.1.6.1(a) & (b)

Dyna-Flow®					Dyna-Thread®				XL®-BLT®			
Pipe Diameter NPS (In)	Available Section Modulus 'S' In <sup>3</sup>	Hanger Span 'L' Ft	Water-filled Pipe Wt. 'w' Lb./Ft	Design Load w15+250 Lb	Available Section Modulus 'S' In <sup>3</sup>	Hanger Span 'L' Ft	Water-filled Pipe Wt. 'w' Lb./Ft	Design Load w15+250 Lb	Available Section Modulus 'S' In <sup>3</sup>	Hanger Span 'L' Ft	Water-filled Pipe Wt. 'w' Lb./Ft	Design Load w15+250 Lb
1"	0.07	12	1.28	269	0.10	12	1.68	275	0.09	12	1.58	274
1 ¼"	0.11	12	1.82	277	0.19	12	2.48	287	0.15	12	2.23	283
1 ½"	0.21	15	2.63	290	0.27	12	3.18	297	0.22	12	2.70	291
2"	0.33	15	3.69	305	0.45	12	4.40	316	0.37	12	4.02	310
2 ½"	0.49	15	4.97	325	1.01	12	7.58	363	0.73	12	6.09	341
3"	0.80	15	7.03	355	1.60	12	10.34	404	1.10	12	8.18	373
4"	1.38	15	10.67	410	-	-	-	-	-	-	-	-

Trapeze SPAN	Dyna-Flow Sprinkler Pipe Diameter NPS (In)							Dyna-Thread Sprinkler Pipe Diameter NPS (In)						XL/BLT Sprinkler Pipe Diameter NPS (In)					
	1	1 ¼	1 ½	2	2 ½	3	4	1	1 ¼	1 ½	2	2 ½	3	1	1 ¼	1 ½	2	2 ½	3
	Section Modulus Required (In <sup>3</sup> )							Section Modulus Required (In <sup>3</sup> )						Section Modulus Required (In <sup>3</sup> )					
1'-6"	0.08	0.08	0.09	0.09	0.10	0.11	0.12	0.08	0.09	0.09	0.09	0.11	0.12	0.08	0.09	0.09	0.09	0.10	0.11
2'-0"	0.11	0.11	0.12	0.12	0.13	0.14	0.16	0.11	0.11	0.12	0.13	0.15	0.16	0.11	0.11	0.12	0.12	0.14	0.15
2'-6"	0.13	0.14	0.14	0.15	0.16	0.18	0.21	0.14	0.14	0.15	0.16	0.18	0.20	0.14	0.14	0.15	0.16	0.17	0.19
3'-0"	0.16	0.17	0.17	0.18	0.19	0.21	0.25	0.16	0.17	0.18	0.19	0.22	0.24	0.16	0.17	0.17	0.19	0.20	0.22
4'-0"	0.22	0.22	0.23	0.24	0.26	0.28	0.33	0.22	0.23	0.24	0.25	0.29	0.32	0.22	0.23	0.23	0.25	0.27	0.30
5'-0"	0.27	0.28	0.29	0.31	0.32	0.36	0.41	0.27	0.29	0.30	0.32	0.36	0.40	0.27	0.28	0.29	0.31	0.34	0.37
6'-0"	0.32	0.33	0.35	0.37	0.39	0.43	0.49	0.33	0.34	0.36	0.38	0.44	0.48	0.33	0.34	0.35	0.37	0.41	0.45
7'-0"	0.38	0.39	0.41	0.43	0.45	0.50	0.57	0.38	0.40	0.42	0.44	0.51	0.56	0.38	0.40	0.41	0.43	0.48	0.52
8'-0"	0.43	0.44	0.46	0.49	0.52	0.57	0.66	0.44	0.46	0.47	0.51	0.58	0.65	0.44	0.45	0.46	0.50	0.55	0.60
9'-0"	0.48	0.50	0.52	0.55	0.58	0.64	0.74	0.49	0.52	0.53	0.57	0.65	0.73	0.49	0.51	0.52	0.56	0.61	0.67
10'-0"	0.54	0.55	0.58	0.61	0.65	0.71	0.82	0.55	0.57	0.59	0.63	0.73	0.81	0.55	0.57	0.58	0.62	0.68	0.75

These Tables are based on a maximum allowable bending stress of 15 ksi and a mid-span concentrated load from 15 ft span of water-filled pipe, plus 250 lb.

## Guideline on How to Select Trapeze Member (Ref. NFPA 13-2007, Sec. 9.1.1.6):

1. Select the trapeze span. For the given type and size of sprinkler pipe, determine the required minimum section modulus. Select the trapeze member having a section modulus equal to or greater than the required minimum section modulus. e.g., for a 4'-0" trapeze span to be used on a 2" Dynathread sprinkler pipe, the required sec. mod. is 0.24 In<sup>3</sup>. A 1 ½" diameter Dynathread pipe having a sec. mod. 0.27 (see Available Section Modulus Columns above) is suitable.
2. An Equivalent Trapeze span may be determined in accordance with NFPA 13-2007, Sec. A.9.1.1.6



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