

## MAXIMUM ALLOWABLE RESTRAINT SPACING – FIRE PROTECTION PIPING

Table A6.2-1; Maximum Allowable Seismic Restraint Spacing for Steel Water-Filled Pipe – Threaded or Cut Grooves {Includes 1.15 Factor Required by NFPA 13 Section 9.3.5.6.1}

Seismic Coefficient $C_p$					0.43	0.60	0.73	0.99	1.33	2.00
Pipe Size (in)	Pipe Schedule	Pipe O. D. (in)	Pipe I. D. (in)	Pipe Weight $w_p$ (lb/ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)
1	40	1.315	1.049	2.4	40	30	30	30	20	20
1 1/4	40	1.660	1.380	3.4	40	40	40	30	30	20
1 1/2	40	1.900	1.610	4.1	40	40	40	30	30	30
2	40	2.375	2.067	5.9	40	40	40	40	40	30
2 1/2	40	2.875	2.469	9.0	40	40	40	40	40	40
3	40	3.500	3.068	12.4	40	40	40	40	40	40
3 1/2	40	4.000	3.548	15.4	40	40	40	40	40	40
4	40	4.500	4.026	18.7	40	40	40	40	40	40
5	40	5.563	5.047	26.8	40	40	40	40	40	40
6	40	6.625	6.065	36.2	40	40	40	40	40	40
8	30	8.625	8.071	53.9	40	40	40	40	40	40
10	30	10.75	10.14	79.5	40	40	40	40	40	40
12	STD	12.75	12.00	113.3	40	40	40	40	40	40

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**Table A6.2-2; Maximum Allowable Seismic Restraint Spacing for Steel Water-Filled Pipe – Welded or Rolled Grooves {Includes 1.15 Factor Required by NFPA 13 Section 9.3.5.6.1}**

Seismic Coefficient $C_p$					0.43	0.60	0.73	0.99	1.33	2.00
Pipe Size (in)	Pipe Schedule	Pipe O. D. (in)	Pipe I. D. (in)	Pipe Weight $w_p$ (lb/ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)
1	10	1.315	1.097	2.1	40	30	30	30	20	20
1 1/4	10	1.660	1.442	2.9	40	40	30	30	30	20
1 1/2	10	1.900	1.682	3.5	40	40	40	30	30	30
2	10	2.375	2.157	4.9	40	40	40	40	30	30
2 1/2	10	2.875	2.635	6.8	40	40	40	40	40	30
3	10	3.500	3.260	9.1	40	40	40	40	40	40
3 1/2	10	4.000	3.760	11.2	40	40	40	40	40	40
4	10	4.500	4.026	18.7	40	40	40	40	40	40
5	10	5.563	5.295	19.9	40	40	40	40	40	40
6	10	6.625	6.357	26.5	40	40	40	40	40	40
8	---	8.625	8.249	46.1	40	40	40	40	40	40
10	---	10.75	10.37	66.5	40	40	40	40	40	40
12	30	12.75	12.09	107.5	40	40	40	40	40	40

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**Table A6.2-3; Maximum Allowable Seismic Restraint Spacing for TYPE K Water-Filled Copper Tubing – ASTM B88 {Includes 1.15 Factor Required by NFPA 13 Section 9.3.5.6.1}**

Seismic Coefficient $C_p$				0.43	0.60	0.73	0.99	1.33	2.00
Tube Size (in)	Tube O. D. (in)	Tube Wall Thickness (in)	Tube Weight $w_p$ (lb/ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)
1	1.125	0.065	1.3	20	20	20	20	15	15
1 1/4	1.375	0.065	1.8	30	20	20	20	20	15
1 1/2	1.625	0.072	2.4	30	30	30	20	20	20
2	2.125	0.083	3.9	40	30	30	30	20	20
2 1/2	2.625	0.095	5.7	40	40	40	30	30	20
3	3.125	0.109	7.9	40	40	40	40	30	30
3 1/2	3.625	0.120	10.4	40	40	40	40	40	30
4	4.125	0.134	13.3	40	40	40	40	40	30
5	5.125	0.160	20.1	40	40	40	40	40	40
6	6.125	0.192	28.8	40	40	40	40	40	40

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**Table A6.2-4; Maximum Allowable Seismic Restraint Spacing for TYPE L Water-Filled Copper Tubing – ASTM B88 {Includes 1.15 Factor Required by NFPA 13 Section 9.3.5.6.1}**

Seismic Coefficient $C_p$				0.43	0.60	0.73	0.99	1.33	2.00
Tube Size (in)	Tube O. D. (in)	Tube Wall Thickness (in)	Tube Weight $w_p$ (lb/ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)
1	1.125	0.050	1.2	20	20	20	20	15	15
1 1/4	1.375	0.055	1.6	30	20	20	20	20	15
1 1/2	1.625	0.060	2.2	30	30	20	20	20	20
2	2.125	0.070	3.6	40	30	30	30	20	20
2 1/2	2.625	0.080	5.2	40	40	30	30	30	20
3	3.125	0.090	7.2	40	40	40	40	30	30
3 1/2	3.625	0.100	9.5	40	40	40	40	30	30
4	4.125	0.114	12.3	40	40	40	40	40	30
5	5.125	0.125	18.0	40	40	40	40	40	40
6	6.125	0.140	25.1	40	40	40	40	40	40

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**Table A6.2-5; Maximum Allowable Seismic Restraint Spacing for TYPE M Water-Filled Copper Tubing – ASTM B88 {Includes 1.15 Factor Required by NFPA 13 Section 9.3.5.6.1}**

Seismic Coefficient $C_p$				0.43	0.60	0.73	0.99	1.33	2.00
Tube Size (in)	Tube O. D. (in)	Tube Wall Thickness (in)	Tube Weight $w_p$ (lb/ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)
1	1.125	0.035	1.0	20	20	20	20	15	15
1 1/4	1.375	0.042	1.4	30	20	20	20	20	15
1 1/2	1.625	0.049	2.0	30	30	20	20	20	20
2	2.125	0.058	3.3	40	30	30	30	20	20
2 1/2	2.625	0.065	4.8	40	40	30	30	30	20
3	3.125	0.072	6.5	40	40	40	30	30	30
3 1/2	3.625	0.083	8.8	40	40	40	40	30	30
4	4.125	0.095	11.4	40	40	40	40	40	30
5	5.125	0.109	17.1	40	40	40	40	40	40
6	6.125	0.122	23.8	40	40	40	40	40	40

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**Table A6.2-6; Maximum Allowable Seismic Restraint Spacing for BlazeMaster® CPVC Water-Filled Sprinkler Pipe Manufactured by HARVEL®**  
 {Includes 1.15 Factor Required by NFPA 13 Section 9.3.5.6.1}

Seismic Coefficient $C_p$				0.43	0.60	0.73	0.99	1.33	2.00
Pipe Size (in)	Pipe O. D. (in)	Pipe I. D. (in)	Pipe Weight $w_p$ (lb/ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)	Actual Maximum Spacing $S_T$ (ft)
3/4	1.050	0.874	0.5	10	10	9	8	8	7
1	1.315	1.101	0.8	10	10	10	10	9	8
1 1/4	1.660	1.394	1.2	15	10	10	10	10	9
1 1/2	1.900	1.598	1.6	15	10	10	10	10	10
2	2.375	2.003	2.5	15	15	15	10	10	10
2 1/2	2.875	2.423	3.7	20	15	15	15	10	10
3	3.500	2.950	5.5	20	20	20	15	15	10

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