HYDROFLOW™

FIRE PROTECTION SPRINKLER PIPE

Pipe Properties											
NPS (in)	Nominal Wall Thickness (in)	OD (in)	ID (in)	Nominal Weight (lb/ft)	Area (in^2)	Moment of Inertia, I (in^4)	Section Modulus, S (in^3)	Radius of Gyration, r (in)	Filled Weight (lb/ft)	Max Hanger Span (ft)	Max Trapeze Load (lb)
1 1/4	0.073	1.660	1.514	1.24	0.36	0.11	0.14	0.56	2.02	12	274
1 1/2	0.078	1.900	1.744	1.52	0.45	0.19	0.20	0.64	2.55	15	288
2	0.084	2.375	2.207	2.05	0.60	0.40	0.33	0.81	3.71	15	306
2 1/2	0.086	2.875	2.703	2.56	0.75	0.73	0.51	0.99	5.05	15	326
3	0.093	3.500	3.314	3.38	1.00	1.45	0.83	1.21	7.12	15	357
4	0.098	4.500	4.304	4.60	1.36	3.28	1.46	1.56	10.91	15	414

Section Modulus Required for Trapeze Members (in^3)						
Span of Trapeze 'a'	Nominal Diameter of HYDROFLOW™ Pipe Being Supported					
	1 1/4	1 1/2	2	2 1/2	3	4
1′-6″	0.08	0.09	0.09	0.10	0.11	0.12
2′-0″	0.11	0.12	0.12	0.13	0.14	0.17
2′-6″	0.14	0.14	0.15	0.16	0.18	0.21
3′-0″	0.17	0.17	0.18	0.20	0.21	0.25
4′-0″	0.22	0.23	0.24	0.26	0.29	0.33
5′-0″	0.28	0.29	0.31	0.33	0.36	0.41
6′-0″	0.34	0.35	0.37	0.39	0.43	0.50
7′-0″	0.39	0.40	0.43	0.46	0.50	0.58
8′-0″	0.45	0.46	0.49	0.52	0.57	0.66
9′-0″	0.50	0.52	0.55	0.59	0.64	0.74
10′-0″	0.56	0.58	0.61	0.65	0.71	0.83

Note:
Assumes 15 ksi maximum bending stress in trapeze member

Maximum Load (F_{pw}) in Zone of Influence (lb)					
Nominal Diameter of Pipe Being Braced (in)	Lateral Sway Brace Spacing (ft)				
	20[a]	25[a]	30[b]	35[b]	40[c]
1 1/4	128	103	84	72	60
1 1/2	181	145	119	102	85
2	311	248	204	174	146
2 1/2	474	379	310	266	223
3	767	614	503	431	361
4	1355	1084	888	761	638

Notes:
[a] Assumes branches at mid-span and near sway brace
[b] Assumes branches at third-points and near sway brace
[c] Assumes branches at quarter-points and near sway brace

NUCOR®
TUBULAR PRODUCTS

2000 COOPERAGE WAY
TRINITY, ALABAMA 35673
256.301.5560

HYDROFLOW™

Sway Brace Capacity (kl/r = 100)							
NPS (in)	Area (in^2)	Radius of Gyration, r (in)	Maximum Length (ft)	F_a, Allowable Compressive Stress (psi)	Maximum Horizontal Load (lb)		
					Angle from **30 to 44** degrees	Angle from **45 to 59** degrees	Angle from **60 to 90** degrees
1 1/4	0.36	0.56	4.7	11,584	2,108	2,981	3,651
1 1/2	0.45	0.64	5.4	11,584	2,586	3,657	4,479
2	0.60	0.81	6.8	11,584	3,502	4,952	6,065
2 1/2	0.75	0.99	8.2	11,584	4,365	6,172	7,560
3	1.00	1.21	10.0	11,584	5,766	8,154	9,986
4	1.36	1.56	13.0	11,584	7,850	11,102	13,597

Note: Allowable compressive stress per AISC 360-16 Chapter E

Sway Brace Capacity (kl/r = 200)							
NPS (in)	Area (in^2)	Radius of Gyration, r (in)	Maximum Length (ft)	F_a, Allowable Compressive Stress (psi)	Maximum Horizontal Load (lb)		
					Angle from **30 to 44** degrees	Angle from **45 to 59** degrees	Angle from **60 to 90** degrees
1 1/4	0.36	0.56	9.4	3,757	684	967	1,184
1 1/2	0.45	0.64	10.7	3,757	839	1,186	1,453
2	0.60	0.81	13.5	3,757	1,136	1,606	1,967
2 1/2	0.75	0.99	16.4	3,757	1,416	2,002	2,452
3	1.00	1.21	20.1	3,757	1,870	2,645	3,239
4	1.36	1.56	25.9	3,757	2,546	3,601	4,410

Note: Allowable compressive stress per AISC 360-16 Chapter E

Sway Brace Capacity (kl/r = 300)							
NPS (in)	Area (in^2)	Radius of Gyration, r (in)	Maximum Length (ft)	F_a, Allowable Compressive Stress (psi)	Maximum Horizontal Load (lb)		
					Angle from **30 to 44** degrees	Angle from **45 to 59** degrees	Angle from **60 to 90** degrees
1 1/4	0.36	0.56	14.0	1670	304	430	526
1 1/2	0.45	0.64	16.1	1670	373	527	646
2	0.60	0.81	20.3	1670	505	714	874
2 1/2	0.75	0.99	24.7	1670	629	890	1,090
3	1.00	1.21	30.1	1670	831	1,175	1,440
4	1.36	1.56	38.9	1670	1,132	1,600	1,960

Note: Allowable compressive stress per AISC 360-16 Chapter E

NUCOR®
TUBULAR PRODUCTS

2000 COOPERAGE WAY
TRINITY, ALABAMA 35673
256.301.5560