

Seismic Sway Brace Components

Seismic Sway Braces are used to resist the differential movement between the sprinkler piping systems and the structure to which it is attached during an earthquake. The listings contained within this section are based on testing that was conducted on the building-attached and piping-attached components individually. While included in the certification testing, the component used between the building-attached component and the pipe-attached component was not within the scope of Approval.

Two or more listed components may be required to form a complete seismic sway brace. The specific components required depend upon the type of building construction and the pipe size.

In all cases, the allowable capacities shown within this section have been determined by resolving the load rating (i.e. the load resulting in failure or exceedance of the deformation limits) to the horizontal direction and dividing by a safety factor of 1.5 to allow the values to be used directly for Allowable Stress Design (ASD). For Load Resistance Factor Design (LRFD) capacities, the values in the table shall be multiplied by 1.5

Models 010, 031, 040, 030, 035, 045

Model	Part Description	Run Pipe Nominal Size	Run Pipe Reference	Allowable Horizontal Capacity (F) per Installation Angle, lb (N)				Remarks
				30°-44°	45°-59°	60°-74°	75°-90°	
010	Rod Body	1	LW, 10, 40	340 (1510)	480 (2130)	590 (2620)	660 (2930)	a, c, d
010	Rod Body	1 ¼	LW, 10, 40	350 (1550)	500 (2220)	610 (2710)	680 (3020)	a, c, d
010	Rod Body	1 ½	LW, 10, 40	290 (1280)	420 (1860)	510 (2260)	570 (2530)	a, c, d
010	Rod Body	2	LW, 10, 40	390 (1730)	550 (2440)	670 (2980)	750 (3330)	a, c, d
010	Rod Body	2 ½	LW, 10, 40	440 (1950)	620 (2750)	760 (3380)	850 (3780)	a, c, d
010	Rod Body	3	LW, 10, 40	470 (2090)	660 (2930)	810 (3330)	910 (4040)	a, c, d
010	Rod Body	4	LW, 10, 40	430 (1910)	610 (2710)	750 (3330)	840 (3730)	a, c, d
010	Rod Body	6	LW, 10, 40	250 (1110)	350 (1550)	430 (1910)	480 (2130)	c, d, g
031	Pipe attached (lateral)	2, 2 ½, 3, 3 ½, 4, 5, 6, 8	LW, 10, 40	1270 (5640)	1800 (8000)	2200 (9780)	2460 (10940)	b, c, d
031	Pipe attached (longitudinal)	2	LW, 10, 40	1370 (6090)	1930 (8580)	2370 (10540)	2810 (12490)	b, c, d
031	Pipe attached (longitudinal)	2 ½	LW, 10, 40	1500 (6670)	2120 (9430)	2600 (11560)	2900 (12890)	b, c, d
031	Pipe attached (longitudinal)	3, 3 ½, 4, 5	LW, 10, 40	1370 (6090)	1930 (8580)	2370 (10540)	2810 (12490)	b, c, d
031	Pipe attached (longitudinal)	6	LW, 10, 40	1410 (6270)	2000 (8890)	2450 (10890)	2730 (12140)	b, c, d
031	Pipe attached (longitudinal)	8	LW, 10, 40	1320 (5870)	1870 (8310)	2290 (10180)	2550 (2550)	b, c, d

031	Pipe attached (lat. or long. with flat or angle brace)	2, 2 ½, 3, 3 ½, 4, 5, 6, 8	LW, 10, 40	900 (4000)	1280 (5690)	1570 (6980)	1750 (7780)	c, d, e
031	Pipe attached (lat. or long. with strut brace)	2, 2 ½, 3, 3 ½, 4, 5, 6, 8	LW, 10, 40	1070 (4750)	1440 (6400)	1740 (7730)	1940 (8620)	c, d, f
040	Pipe attached (lateral)	2	LW, 10, 40	1070 (4750)	1520 (6760)	1860 (8270)	2080 (9250)	c, d
040	Pipe attached (lateral)	2 ½, 3, 3 ½, 4, 5	LW, 10, 40	960 (4270)	1360 (6040)	1670 (7420)	1860 (8270)	c, d
040	Pipe attached (lateral)	6	LW, 10, 40	1000 (4440)	1420 (6310)	1740 (7730)	1940 (8620)	c, d
040	Pipe attached (lateral)	8	LW, 10, 40	1350 (6000)	1900 (8450)	2330 (10360)	2600 (11560)	c, d
040	Pipe attached (longitudinal)	2	LW, 10, 40	1260 (5600)	1440 (6400)	1740 (7730)	1940 (8620)	c, d
040	Pipe attached (longitudinal)	2 ½, 3, 3 ½	LW, 10, 40	1000 (4440)	1420 (6310)	1740 (7730)	1940 (8620)	c, d
040	Pipe attached (longitudinal)	4, 5	LW, 10, 40	1110 (4930)	2160 (9600)	1800 (8000)	1920 (8540)	c, d
040	Pipe attached (longitudinal)	6	LW, 10, 40	1280 (5690)	1810 (8050)	2210 (9830)	2470 (10980)	c, d
040	Pipe attached (longitudinal)	8	LW, 10, 40	1160 (5150)	1650 (7330)	2020 (8980)	2250 (10000)	c, d

Model	Part Description	Joist or Beam Thickness	Orientation	Allowable Horizontal Capacity (F) per Installation Angle, lb (N)				Remarks
				30°-44°	45°-59°	60°-74°	75°-90°	
030	Swivel	N/A	N/A	1270 (5640)	2040 (9070)	2450 (10890)	2740 (12180)	b
030	Swivel	N/A	N/A	900 (4000)	1280 (5690)	1570 (6980)	1750 (7780)	e
030	Swivel	N/A	N/A	1070 (4750)	1440 (6400)	1740 (7730)	1940 (8620)	f
035	Bar Joist Clamp	1/8-3/8	lateral	1040 (4620)	1490 (6620)	1800 (8000)	2010 (8940)	

035	Bar Joist Clamp	1/8-3/8	longitudinal	970 (4310)	1370 (6090)	2060 (9160)	2300 (10230)	
035	Bar Joist Clamp as beam clamp	1/8-3/8	lateral	1150 (5110)	1660 (7380)	1990 (8850)	2220 (9870)	
045	Beam Clamp	3/8-1 ¼	lateral	1150 (5110)	1800 (8000)	2230 (9910)	2460 (10940)	
045	Beam Clamp	3/8-1 ¼	longitudinal	900 (4000)	1050 (4670)	1260 (5600)	1410 (6270)	

- a. FM Approved when used with 1 or 1 1/4 inch Sch. 40, GB/T3091, EN10255H or JISG3454 brace pipe.
b. FM Approved when used with 1 to 2 inch Sch. 40, GB/T3091, EN10255H or JISG3454 brace pipe
c. Load rating for LW above refers to FM Approved Lightwall pipe, commonly referred to as Sch. 7. These ratings may also be applied to EN10220 and GB/T 8163 pipe.
d. Load rating for Sch. 10 above may be applied to GB/T 3091, GB/T 3092, EN 10255 M and H, JIS G3452, FM Approved Thinwall and Sch. 40 pipe.
e. FM Approved with brace element of structural steel ¼ to 3/8 inch thick.
f. FM Approved with brace element of PHD 1001 or 1201 Series strut
g. FM Approved when used with 1 1/4 inch Sch. 40, GB/T3091, EN10255H or JISG3454 brace pipe.

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