

N873 - RESTRAINED

Structural Steel Rectangular Tube Beams

CAFCO® 300 Series, CAFCO® 400 & ISOLATEK® Type 300 Series, ISOLATEK® Type 400

ASTM Desig.	Wall Thk	A/P	Metric Desig.	M/D	Hp/A	1-Hour	1-1/2 Hour	2-Hour	3-Hour	4-Hour								
36 x 24	1/2	0.61	914 x 610 x 12.7	122.1	64.7	3/8	3/8	3/8	5/8	1								
30 x 24	1/2	0.61	762 x 610 x 12.7	122.1	64.7	3/8	3/8	3/8	5/8	1								
	3/8	0.46									x 9.5	92.1	85.9	3/8	3/8	1/2	7/8	1-3/8
	5/16	0.39									x 7.9	78.1	101.3	3/8	7/16	9/16	1	1-5/8
28 x 24	1/2	0.62	711 x 610 x 12.7	124.1	63.7	3/8	3/8	3/8	5/8	1								
	3/8	0.47									x 9.5	94.1	84.0	3/8	3/8	7/16	13/16	1-5/16
	5/16	0.40									x 7.9	80.1	98.7	3/8	7/16	9/16	1	1-5/8
26 x 24	1/2	0.62	660 x 610 x 12.7	124.1	63.7	3/8	3/8	3/8	5/8	1								
	3/8	0.47									x 9.5	94.1	84.0	3/8	3/8	7/16	13/16	1-5/16
	5/16	0.40									x 7.9	80.1	98.7	3/8	7/16	9/16	1	1-5/8
24 x 22	1/2	0.62	610 x 559 x 12.7	124.1	63.7	3/8	3/8	3/8	5/8	1								
	3/8	0.47									x 9.5	94.1	84.0	3/8	9/16	7/16	13/16	1-5/16
	5/16	0.40									x 7.9	80.1	98.7	3/8	7/16	9/16	1	1-5/8
22 x 20	1/2	0.62	559 x 508 x 12.7	124.1	63.7	3/8	3/8	3/8	5/8	1								
	3/8	0.47									x 9.5	94.1	84.0	3/8	7/16	13/16	1-5/16	
	5/16	0.40									x 7.9	80.1	98.7	3/8	7/16	9/16	1	1-5/8
20 x 18	1/2	0.61	508 x 457 x 12.7	122.1	64.7	3/8	3/8	3/8	5/8	1								
	3/8	0.46									x 9.5	92.1	85.9	3/8	3/8	1/2	7/8	1-3/8
	5/16	0.40									x 7.9	80.1	98.7	3/8	7/16	9/16	1	1-5/8
20 x 12	1/2	0.54	508 x 305 x 12.7	108.1	73.1	3/8	3/8	3/8	11/16	1-1/8								
	3/8	0.41									x 9.5	82.1	96.3	3/8	7/16	1/2	15/16	1-1/2
	5/16	0.35									x 7.9	70.1	112.8	3/8	1/2	9/16	1-1/16	1-3/4
20 x 8	1/2	0.51	508 x 203 x 12.7	102.1	77.4	3/8	3/8	7/16	3/4	1-3/16								
	3/8	0.39									x 9.5	78.1	101.3	3/8	7/16	9/16	1	1-5/8
	5/16	0.33									x 7.9	66.1	119.7	3/8	1/2	5/8	1-3/16	1-15/16
20 x 4	1/2	0.47	508 x 102 x 12.7	94.1	84.0	3/8	3/8	7/16	13/16	1-5/16								
	3/8	0.36									x 9.5	72.1	109.7	3/8	1/2	9/16	1-1/16	1-3/4
	5/16	0.30									x 7.9	60.1	131.6	3/8	9/16	11/16	1-1/4	2-1/16
18 x 12	1/2	0.55	457 x 305 x 12.7	110.1	71.8	3/8	3/8	3/8	11/16	1-1/8								
	3/8	0.42									x 9.5	84.1	94.0	3/8	7/16	1/2	15/16	1-1/2
	5/16	0.35									x 7.9	70.1	112.8	3/8	1/2	9/16	1-1/16	1-3/4
18 x 6	1/2	0.49	457 x 152 x 12.7	98.1	80.6	3/8	3/8	7/16	13/16	1-5/16								
	3/8	0.38									x 9.5	76.1	103.9	3/8	7/16	9/16	1	1-5/8
	5/16	0.32									x 7.9	64.1	123.4	3/8	1/2	5/8	1-3/16	1-15/16
	1/4	0.26									x 6.4	52.0	151.9	7/16	5/8	3/4	1-3/8	2-5/16
16 x 12	1/2	0.56	406 x 305 x 12.7	112.1	70.5	3/8	3/8	3/8	11/16	1-1/8								
	3/8	0.42									x 9.5	84.1	94.0	3/8	7/16	1/2	15/16	1-1/2
	5/16	0.36									x 7.9	72.1	109.7	3/8	1/2	9/16	1-1/16	1-3/4
16 x 8	1/2	0.52	406 x 203 x 12.7	104.1	75.9	3/8	3/8	7/16	3/4	1-3/16								
	3/8	0.40									x 9.5	80.1	98.7	3/8	7/16	9/16	1	1-5/8
	5/16	0.33									x 7.9	66.1	119.7	3/8	1/2	5/8	1-3/16	1-15/16
16 x 4	1/2	0.47	406 x 102 x 12.7	94.1	84.0	3/8	3/8	7/16	13/16	1-5/16								
	3/8	0.36									x 9.5	72.1	109.7	3/8	1/2	9/16	1-1/16	1-3/4
	5/16	0.31									x 7.9	62.1	127.4	3/8	9/16	11/16	1-1/4	2-1/16

Note: A/P Ratio based on AISC Steel Manual

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Structural Steel Rectangular Tube Beams

CAFCO® 300 Series, CAFCO® 400 & ISOLATEK® Type 300 Series, ISOLATEK® Type 400

ASTM Desig.	Wall Thk	A/P	Metric Desig.	M/D	Hp/A	1-Hour	1-1/2 Hour	2-Hour	3-Hour	4-Hour
14 x 10	5/8	0.67	356 x 254 x 15.9	134.1	58.9	3/8	3/8	3/8	5/8	1
	1/2	0.55	x 12.7	110.1	71.8	3/8	3/8	3/8	11/16	1-1/8
	3/8	0.42	x 9.5	84.1	94.0	3/8	7/16	1/2	15/16	1-1/2
	5/16	0.35	x 7.9	70.1	112.8	3/8	1/2	9/16	1-1/16	1-3/4
14 x 6	1/2	0.50	356 x 152 x 12.7	100.1	79.0	3/8	3/8	7/16	13/16	1-5/16
	3/8	0.39	x 9.5	78.1	101.3	3/8	7/16	9/16	1	1-5/8
	5/16	0.32	x 7.9	64.1	123.4	3/8	1/2	5/8	1-3/16	1-15/16
	1/4	0.26	x 6.4	52.0	151.9	7/16	5/8	3/4	1-3/8	2-5/16
14 x 4	1/2	0.48	356 x 102 x 12.7	96.1	82.3	3/8	3/8	7/16	13/16	1-5/16
	3/8	0.37	x 9.5	74.1	106.7	3/8	1/2	9/16	1-1/16	1-3/4
	5/16	0.31	x 7.9	62.1	127.4	3/8	9/16	11/16	1-1/4	2-1/16
12 x 8	5/8	0.65	305 x 203 x 15.9	130.1	60.8	3/8	3/8	3/8	5/8	1
	1/2	0.53	x 12.7	106.1	74.5	3/8	3/8	7/16	3/4	1-3/16
	3/8	0.41	x 9.5	82.1	96.3	3/8	7/16	1/2	15/16	1-1/2
	5/16	0.35	x 7.9	70.1	112.8	3/8	1/2	9/16	1-1/16	1-3/4
	1/4	0.28	x 6.4	56.0	141.0	7/16	5/8	3/4	1-3/8	2-5/16
12 x 6	5/8	0.62	305 x 152 x 15.9	124.1	63.7	3/8	3/8	3/8	5/8	1
	1/2	0.51	x 12.7	102.1	77.4	3/8	3/8	7/16	3/4	1-3/16
	3/8	0.39	x 9.5	78.1	101.3	3/8	7/16	9/16	1	1-5/8
	5/16	0.33	x 7.9	66.1	119.7	3/8	1/2	5/8	1-3/16	1-15/16
	1/4	0.27	x 6.4	54.0	146.3	7/16	5/8	3/4	1-3/8	2-5/16
12 x 4	5/8	0.58	305 x 102 x 15.9	116.1	68.1	3/8	3/8	3/8	11/16	1-1/16
	1/2	0.48	x 12.7	96.1	82.3	3/8	3/8	7/16	13/16	1-5/16
	3/8	0.37	x 9.5	74.1	106.7	3/8	1/2	9/16	1-1/16	1-3/4
	5/16	0.31	x 7.9	62.1	127.4	3/8	9/16	11/16	1-1/4	2-1/16
10 x 8	5/8	0.62	254 x 203 x 15.9	124.1	63.7	3/8	3/8	3/8	5/8	1
	1/2	0.54	x 12.7	108.1	73.1	3/8	3/8	3/8	11/16	1-1/8
	3/8	0.42	x 9.5	84.1	94.0	3/8	7/16	1/2	15/16	1-1/2
	5/16	0.35	x 7.9	70.1	112.8	3/8	1/2	9/16	1-1/16	1-3/4
	1/4	0.29	x 6.4	58.0	136.2	3/8	9/16	11/16	1-1/4	2-1/16
10 x 6	5/8	0.62	254 x 152 x 15.9	124.1	63.7	3/8	3/8	3/8	5/8	1
	1/2	0.51	x 12.7	102.1	77.4	3/8	3/8	7/16	3/4	1-3/16
	3/8	0.40	x 9.5	80.1	98.7	3/8	7/16	9/16	1	1-5/8
	5/16	0.34	x 7.9	68.1	116.2	3/8	1/2	5/8	1-3/16	1-15/16
	1/4	0.27	x 6.4	54.0	146.3	7/16	5/8	3/4	1-3/8	2-5/16
10 x 4	1/2	0.48	254 x 102 x 12.7	96.1	82.3	3/8	3/8	7/16	13/16	1-5/16
	3/8	0.37	x 9.5	74.1	106.7	3/8	1/2	9/16	1-1/16	1-3/4
	5/16	0.31	x 7.9	62.1	127.4	3/8	9/16	11/16	1-1/4	2-1/16
	1/4	0.26	x 6.4	52.0	151.9	7/16	5/8	3/4	1-3/8	2-5/16
8 x 6	1/2	0.52	203 x 152 x 12.7	104.1	75.9	3/8	3/8	7/16	3/4	1-3/16
	3/8	0.40	x 9.5	80.1	98.7	3/8	7/16	9/16	1	1-5/8
	5/16	0.34	x 7.9	68.1	116.2	3/8	1/2	5/8	1-3/16	1-15/16
	1/4	0.28	x 6.4	56.0	141.0	7/16	5/8	3/4	1-3/8	2-5/16

Note: A/P Ratio based on AISC Steel Manual

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Structural Steel Rectangular Tube Beams

CAFCO® 300 Series, CAFCO® 400 & ISOLATEK® Type 300 Series, ISOLATEK® Type 400

ASTM Desig.	Wall Thk	A/P	Metric Desig.	M/D	Hp/A	1-Hour	1-1/2 Hour	2-Hour	3-Hour	4-Hour
8 x 4	1/2	0.48	203 x 102 x 12.7	96.1	82.3	3/8	3/8	7/16	13/16	1-5/16
	3/8	0.38	x 9.5	76.1	103.9	3/8	7/16	9/16	1	1-5/8
	5/16	0.32	x 7.9	64.1	123.4	3/8	1/2	5/8	1-3/16	1-15/16
	1/4	0.26	x 6.4	52.0	151.9	7/16	5/8	3/4	1-3/8	2-5/16
7 x 5	1/2	0.51	178 x 127 x 12.7	102.1	77.4	3/8	3/8	7/16	3/4	1-3/16
	3/8	0.40	x 9.5	80.1	98.7	3/8	7/16	9/16	1	1-5/8
	5/16	0.34	x 7.9	68.1	116.2	3/8	1/2	5/8	1-3/16	1-15/16
	1/4	0.27	x 6.4	54.0	146.3	7/16	5/8	3/4	1-3/8	2-5/16
7 x 4	1/2	0.48	178 x 102 x 12.7	96.1	82.3	3/8	3/8	7/16	13/16	1-5/16
	3/8	0.38	x 9.5	76.1	103.9	3/8	7/16	9/16	1	1-5/8
	5/16	0.32	x 7.9	64.1	123.4	3/8	1/2	5/8	1-3/16	1-15/16
	1/4	0.26	x 6.4	52.0	151.9	7/16	5/8	3/4	1-3/8	2-5/16
6 x 4	1/2	0.48	152 x 102 x 12.7	96.1	82.3	3/8	3/8	7/16	13/16	1-5/16
	3/8	0.38	x 9.5	76.1	103.9	3/8	7/16	9/16	1	1-5/8
	5/16	0.33	x 7.9	66.1	119.7	3/8	1/2	5/8	1-3/16	1-15/16
	1/4	0.27	x 6.4	54.0	146.3	7/16	5/8	3/4	1-3/8	2-5/16
5 x 4	3/8	0.39	127 x 102 x 9.5	78.1	101.3	3/8	7/16	9/16	1	1-5/8
	5/16	0.33	x 7.9	66.1	119.7	3/8	1/2	5/8	1-3/16	1-15/16
	1/4	0.27	x 6.4	54.0	146.3	7/16	5/8	3/4	1-3/8	2-5/16

Note: A/P Ratio based on AISC Steel Manual