

This publication presents tables of dimensions and section properties for rectangular Hollow Structural Sections (HSS) produced by Bull Moose Tube Company.

The dimensions, including nominal width, nominal depth, nominal diameter and nominal wall thickness are subject to the permissible variations stipulated in ASTM A500 “Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.”

With today’s manufacturing methods, HSS are produced to more precision than in the past. The strip used to produce HSS is now ordered to thicknesses with tighter tolerances. As a result, ERW HSS manufactured to ASTM A500 will often have a wall thickness close to the Specification allowable value.

In a change from past practice, section property data is now based upon the design wall thickness. The design wall thickness, t , for ERW HSS is less than the specified nominal wall thickness. The design wall thickness for each HSS size is included in the tabulated data.

The section property data based upon the design wall thickness, t , results in variations in the published area data that do not exceed 3.50% of the data based upon the minimum permissible wall thickness stipulated in ASTM A500. This is consistent with the similar section property data published for hot rolled structural shapes and the manufacturing tolerances associated with those products. The section property data for rectangular ERW HSS are based upon outside corner radii equal to 2.0 times the design wall thickness.

These tables contain all HSS sizes produced by Bull Moose Tube Company as well as current capability to produce sizes. Check with our sales department for current availability.

The more universal terms “Hollow Structural Section” and “HSS” are used in this publication to designate rectangular structural steel tubing. These terms replace “structural tubing” and “pipe,” which had been used previously.

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Nominal Size			Weight per Foot lb.	Design Wall Thickness in.	b/t	h/t	Area in. ²	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot ft. ²
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
18	6	5/8	93.3	0.581	7.32	28.0	25.7	923	103	5.99	135	158	52.6	2.48	60.5	462	109	3.83
18	6	1/2	76.1	0.465	9.90	35.7	20.9	770	85.6	6.07	111	134	44.6	2.53	50.3	387	89.9	3.87
18	6	3/8	58.1	0.349	14.2	48.6	15.9	602	66.9	6.15	86.2	106	35.4	2.58	39.3	302	69.4	3.90
18	6	5/16	48.9	0.291	17.6	58.9	13.4	512	56.9	6.18	72.9	91.1	30.4	2.61	33.4	257	58.7	3.92
18	6	1/4	39.4	0.233	22.8	74.4	10.8	418	46.4	6.22	59.2	75.0	25.0	2.63	27.2	210	47.6	3.93
18	4	1/2	69.3	0.465	5.60	35.7	19.0	627	69.7	5.74	95.1	52.8	26.4	1.66	30.4	172	57.3	3.53
18	4	3/8	53.0	0.349	8.47	48.6	14.5	493	54.8	5.82	73.9	42.9	21.4	1.72	24.0	138	44.8	3.57
18	4	5/16	44.6	0.291	10.8	58.9	12.2	421	46.8	5.87	62.6	37.2	18.6	1.74	20.6	119	38.1	3.58
18	4	1/4	36.0	0.233	14.2	74.4	9.87	345	38.3	5.91	51.0	30.9	15.5	1.77	16.9	97.8	31.1	3.60
16	8	5/8	93.3	0.581	10.8	24.5	25.7	815	102	5.63	128	274	68.5	3.27	78.7	681	132	3.83
16	8	1/2	76.1	0.465	14.2	31.4	20.9	679	84.9	5.70	106	230	57.6	3.32	65.2	563	108	3.87
16	8	3/8	58.1	0.349	19.9	42.9	15.9	530	66.3	5.77	81.8	181	45.3	3.37	50.6	436	83.4	3.90
16	8	5/16	48.9	0.291	24.5	52.1	13.4	451	56.3	5.80	69.2	155	38.7	3.40	42.9	369	70.3	3.92
16	8	1/4	39.4	0.233	31.4	65.8	10.8	368	46.0	5.83	56.2	127	31.7	3.42	34.9	300	56.9	3.93
16	4	1/2	62.5	0.465	5.60	31.4	17.2	455	56.9	5.15	77.0	46.9	23.5	1.65	27.1	150	50.7	3.20
16	4	3/8	47.9	0.349	8.47	42.9	13.2	359	44.9	5.23	60.0	38.2	19.1	1.70	21.5	120	39.7	3.23
16	4	5/16	40.3	0.291	10.8	52.1	11.1	307	38.4	5.27	51.0	33.2	16.6	1.73	18.4	103	33.8	3.25
16	4	1/4	32.6	0.233	14.2	65.8	8.94	252	31.5	5.31	41.6	27.6	13.8	1.76	15.1	85.0	27.6	3.27
14	10	5/8	93.3	0.581	14.2	21.1	25.7	687	98.2	5.17	119	407	81.5	3.98	94.6	832	146	3.83
14	10	1/2	76.1	0.465	18.5	27.1	20.9	572	81.8	5.23	98.5	341	68.1	4.04	78.1	685	120	3.87
14	10	3/8	58.1	0.349	25.7	37.1	15.9	447	63.8	5.29	76.1	267	53.3	4.09	60.5	528	91.7	3.90
14	10	5/16	48.9	0.291	31.4	45.2	13.4	380	54.2	5.32	64.4	227	45.4	4.12	51.2	446	77.3	3.92
14	10	1/4	39.4	0.233	40.0	57.2	10.8	310	44.2	5.35	52.3	185	37.1	4.14	41.6	361	62.5	3.93

Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
14	6	5/8	76.3	0.581	7.32	21.1	21.0	478	68.2	4.77	88.2	124	41.2	2.42	47.9	334	83.8	3.17
14	6	1/2	62.5	0.465	9.90	27.1	17.2	402	57.4	4.84	73.3	105	35.1	2.48	40.0	279	69.3	3.20
14	6	3/8	47.9	0.349	14.2	37.1	13.2	317	45.2	4.91	57.1	84.0	28.0	2.53	31.4	219	53.6	3.23
14	6	5/16	40.3	0.291	17.6	45.2	11.1	270	38.6	4.94	48.5	72.2	24.1	2.55	26.7	186	45.4	3.25
14	6	1/4	32.6	0.233	22.8	57.2	8.94	222	31.7	4.98	39.5	59.5	19.8	2.58	21.9	152	36.9	3.27
14	4	1/2	55.7	0.465	5.60	27.1	15.3	317	45.3	4.55	60.7	41.1	20.5	1.64	23.8	127	44.1	2.87
14	4	3/8	42.8	0.349	8.47	37.1	11.8	252	36.0	4.63	47.6	33.6	16.8	1.69	18.9	102	34.6	2.90
14	4	5/16	36.1	0.291	10.8	45.2	9.91	216	30.8	4.67	40.5	29.2	14.6	1.72	16.3	87.6	29.5	2.92
14	4	1/4	29.2	0.233	14.2	57.2	8.01	177	25.4	4.71	33.1	24.3	12.2	1.74	13.4	72.3	24.1	2.93
12	10	5/8	84.8	0.581	14.2	17.6	23.4	472	78.7	4.50	94.9	356	71.1	3.90	83.6	661	124	3.50
12	10	1/2	69.3	0.465	18.5	22.8	19.0	395	65.9	4.56	78.5	298	59.6	3.96	69.3	545	102	3.53
12	10	3/8	53.0	0.349	25.7	31.4	14.5	310	51.6	4.61	60.9	234	46.8	4.01	53.8	421	78.3	3.57
12	10	5/16	44.6	0.291	31.4	38.3	12.2	264	43.9	4.64	51.6	200	39.9	4.04	45.6	356	66.0	3.58
12	10	1/4	36.0	0.233	40.0	48.6	9.87	216	35.9	4.67	41.9	163	32.7	4.07	37.1	289	53.4	3.60
12	8	5/8	76.3	0.581	10.8	17.6	21.0	396	66.1	4.34	81.6	210	52.5	3.16	61.4	454	97.7	3.17
12	8	1/2	62.5	0.465	14.2	22.8	17.2	333	55.5	4.40	67.8	177	44.4	3.21	51.2	377	80.4	3.20
12	8	3/8	47.9	0.349	19.9	31.4	13.2	262	43.7	4.47	52.8	140	35.1	3.27	39.9	292	62.0	3.23
12	8	5/16	40.3	0.291	24.5	38.3	11.1	224	37.3	4.50	44.8	120	30.0	3.29	33.9	248	52.4	3.25
12	8	1/4	32.6	0.233	31.4	48.6	8.94	183	30.6	4.53	36.5	98.6	24.6	3.32	27.7	202	42.5	3.27
12	8	3/16	24.7	0.174	42.9	65.8	6.78	141	23.5	4.56	27.8	75.9	19.0	3.35	21.1	154	32.3	3.28

Nominal Size			Weight per Foot lb.	Design Wall Thickness in.	b/t	h/t	Area in. ²	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot ft. ²
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
12	6	5/8	67.8	0.581	7.32	17.6	18.7	321	53.4	4.14	68.3	106	35.5	2.39	41.6	271	71.2	2.83
12	6	1/2	55.7	0.465	9.90	22.8	15.3	271	45.2	4.21	57.0	91.0	30.3	2.44	34.9	227	59.0	2.87
12	6	3/8	42.8	0.349	14.2	31.4	11.8	215	35.8	4.28	44.6	72.9	24.3	2.49	27.5	178	45.8	2.90
12	6	5/16	36.1	0.291	17.6	38.3	9.91	184	30.7	4.31	38.0	62.7	20.9	2.52	23.4	152	38.8	2.92
12	6	1/4	29.2	0.233	22.8	48.6	8.01	151	25.2	4.34	31.0	51.8	17.3	2.54	19.2	124	31.5	2.93
12	6	3/16	22.2	0.174	31.4	65.8	6.08	116	19.4	4.38	23.7	40.1	13.4	2.57	14.7	94.8	24.0	2.95
12	4	1/2	48.9	0.465	5.60	22.8	13.5	209	34.9	3.94	46.3	35.2	17.6	1.62	20.5	105	37.5	2.53
12	4	3/8	37.7	0.349	8.47	31.4	10.4	168	27.9	4.02	36.5	28.9	14.4	1.67	16.4	84.0	29.5	2.57
12	4	5/16	31.8	0.291	10.8	38.3	8.74	144	24.0	4.06	31.2	25.1	12.6	1.70	14.1	72.3	25.2	2.58
12	4	1/4	25.8	0.233	14.2	48.6	7.08	119	19.8	4.10	25.5	21.0	10.5	1.72	11.6	59.7	20.6	2.60
12	4	3/16	19.6	0.174	19.9	65.8	5.38	91.9	15.3	4.13	19.6	16.4	8.22	1.75	8.99	46.1	15.8	2.62
12	3-1/2	5/16	30.8	0.291	9.04	38.3	8.45	134	22.4	3.98	29.5	18.6	10.6	1.48	12.0	55.9	21.7	2.50
12	3-1/2	1/4	25.0	0.233	12.1	48.6	6.85	111	18.5	4.02	24.2	15.6	8.91	1.51	9.89	46.4	17.8	2.52
12	3-1/2	3/16	19.0	0.174	17.1	65.8	5.21	85.9	14.3	4.06	18.6	12.3	7.01	1.53	7.66	36.0	13.7	2.53
12	3	5/16	29.7	0.291	7.32	38.3	8.16	124	20.7	3.90	27.8	13.1	8.72	1.27	9.88	41.2	18.3	2.42
12	3	1/4	24.1	0.233	9.90	48.6	6.62	103	17.1	3.94	22.8	11.0	7.36	1.29	8.21	34.4	15.1	2.43
12	3	3/16	18.4	0.174	14.2	65.8	5.03	79.8	13.3	3.98	17.5	8.74	5.82	1.32	6.38	26.9	11.6	2.45
12	2	1/4	22.4	0.233	5.60	48.6	6.15	86.7	14.5	3.75	20.0	4.39	4.39	0.84	5.01	15.0	9.62	2.27
12	2	3/16	17.1	0.174	8.47	65.8	4.68	67.6	11.3	3.80	15.5	3.55	3.55	0.87	3.95	12.0	7.51	2.28

Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
10	8	5/8	67.8	0.581	10.8	14.2	18.7	252	50.5	3.67	61.7	178	44.5	3.08	52.8	346	80.5	2.83
10	8	1/2	55.7	0.465	14.2	18.5	15.3	214	42.7	3.73	51.5	151	37.7	3.14	44.1	288	66.4	2.87
10	8	3/8	42.8	0.349	19.9	25.7	11.8	169	33.8	3.79	40.3	120	30.0	3.19	34.6	224	51.3	2.90
10	8	5/16	36.1	0.291	24.5	31.4	9.91	145	29.0	3.82	34.3	103	25.7	3.22	29.4	190	43.4	2.92
10	8	1/4	29.2	0.233	31.4	40.0	8.01	119	23.8	3.85	28.0	84.6	21.1	3.25	24.0	155	35.2	2.93
10	8	3/16	22.2	0.174	42.9	54.3	6.08	91.5	18.3	3.88	21.4	65.2	16.3	3.27	18.4	118	26.8	2.95
10	6	5/8	59.3	0.581	7.32	14.2	16.4	201	40.2	3.50	50.8	89.3	29.8	2.33	35.3	209	58.6	2.50
10	6	1/2	48.9	0.465	9.90	18.5	13.5	171	34.3	3.57	42.7	76.7	25.6	2.39	29.8	176	48.7	2.53
10	6	3/8	37.7	0.349	14.2	25.7	10.4	137	27.3	3.63	33.6	61.7	20.6	2.44	23.5	138	37.9	2.57
10	6	5/16	31.8	0.291	17.6	31.4	8.74	117	23.5	3.66	28.6	53.2	17.7	2.47	20.1	118	32.1	2.58
10	6	1/4	25.8	0.233	22.8	40.0	7.08	96.7	19.3	3.69	23.4	44.0	14.7	2.49	16.5	96.5	26.1	2.60
10	6	3/16	19.6	0.174	31.4	54.3	5.38	74.7	14.9	3.73	18.0	34.2	11.4	2.52	12.7	73.9	19.9	2.62
10	5	1/2	45.4	0.465	7.75	18.5	12.5	150	30.0	3.46	38.2	49.9	20.0	2.00	23.3	127	39.8	2.37
10	5	3/8	35.1	0.349	11.3	25.7	9.66	120	24.1	3.53	30.2	40.6	16.2	2.05	18.5	100	31.1	2.40
10	5	5/16	29.7	0.291	14.2	31.4	8.16	104	20.7	3.56	25.8	35.1	14.1	2.07	15.9	85.9	26.5	2.42
10	5	1/4	24.1	0.233	18.5	40.0	6.62	85.6	17.1	3.60	21.2	29.2	11.7	2.10	13.1	70.5	21.6	2.43
10	5	3/16	18.4	0.174	25.7	54.3	5.03	66.3	13.3	3.63	16.3	22.8	9.10	2.13	10.1	54.2	16.5	2.45
10	4	1/2	42.0	0.465	5.60	18.5	11.6	129	25.8	3.33	33.8	29.4	14.7	1.59	17.2	82.6	31.0	2.20
10	4	3/8	32.6	0.349	8.47	25.7	8.97	104	20.8	3.41	26.8	24.2	12.1	1.64	13.9	66.5	24.4	2.23
10	4	5/16	27.6	0.291	10.8	31.4	7.58	90.0	18.0	3.44	23.0	21.1	10.6	1.67	11.9	57.3	20.8	2.25
10	4	1/4	22.4	0.233	14.2	40.0	6.15	74.5	14.9	3.48	18.9	17.7	8.85	1.70	9.88	47.3	17.1	2.27
10	4	3/16	17.1	0.174	19.9	54.3	4.68	57.9	11.6	3.52	14.6	13.9	6.94	1.72	7.65	36.6	13.1	2.28

Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
10	3-1/2	5/16	26.5	0.291	9.04	31.4	7.29	83.1	16.6	3.38	21.6	15.6	8.90	1.46	10.1	44.5	18.0	2.17
10	3-1/2	1/4	21.6	0.233	12.1	40.0	5.92	69.0	13.8	3.41	17.8	13.1	7.49	1.49	8.37	36.9	14.8	2.18
10	3-1/2	3/16	16.4	0.174	17.1	54.3	4.51	53.7	10.7	3.45	13.7	10.3	5.90	1.51	6.50	28.7	11.4	2.20
10	3-1/2	0.134	11.9	0.125	25.1	77.2	3.26	39.5	7.91	3.48	10.0	7.70	4.40	1.54	4.79	21.1	8.30	2.21
10	3	5/16	25.5	0.291	7.32	31.4	7.00	76.2	15.2	3.30	20.2	10.9	7.29	1.25	8.30	33.0	15.2	2.08
10	3	1/4	20.7	0.233	9.90	40.0	5.69	63.4	12.7	3.34	16.6	9.26	6.17	1.28	6.92	27.6	12.5	2.10
10	3	3/16	15.8	0.174	14.2	54.3	4.33	49.4	9.89	3.38	12.8	7.34	4.89	1.30	5.40	21.5	9.66	2.12
10	2	1/4	19.0	0.233	5.60	40.0	5.22	52.4	10.5	3.17	14.4	3.66	3.66	0.84	4.19	12.2	7.98	1.93
10	2	3/16	14.5	0.174	8.47	54.3	3.99	41.0	8.21	3.21	11.1	2.97	2.97	0.86	3.32	9.76	6.24	1.95
10	2	0.134	10.5	0.125	13.0	77.2	2.89	30.4	6.08	3.24	8.18	2.27	2.27	0.89	2.48	7.35	4.61	1.96
10	2	1/8	9.86	0.116	14.2	83.0	2.70	28.5	5.71	3.25	7.66	2.14	2.14	0.89	2.33	6.92	4.32	1.97
9	7	5/8	59.3	0.581	9.04	12.5	16.4	174	38.7	3.26	47.8	117	33.5	2.68	40.0	235	62.1	2.50
9	7	1/2	48.9	0.465	12.1	16.4	13.5	149	33.0	3.32	40.1	100	28.7	2.73	33.7	197	51.5	2.53
9	7	3/8	37.7	0.349	17.1	22.8	10.4	118	26.3	3.38	31.6	80.3	23.0	2.78	26.6	154	40.0	2.57
9	7	5/16	31.8	0.291	21.1	28.0	8.74	102	22.6	3.41	26.9	69.1	19.8	2.81	22.7	131	33.9	2.58
9	7	1/4	25.8	0.233	27.1	35.7	7.08	83.9	18.6	3.44	22.1	57.1	16.3	2.84	18.6	107	27.5	2.60
9	7	3/16	19.6	0.174	37.1	48.6	5.38	64.8	14.4	3.47	16.9	44.2	12.6	2.87	14.3	81.9	21.0	2.62
9	6	1/2	45.4	0.465	9.90	16.4	12.5	132	29.2	3.24	36.2	69.6	23.2	2.36	27.2	151	43.5	2.37
9	6	3/8	35.1	0.349	14.2	22.8	9.66	105	23.4	3.30	28.6	56.1	18.7	2.41	21.5	119	33.9	2.40
9	6	5/16	29.7	0.291	17.6	28.0	8.16	90.8	20.2	3.33	24.4	48.5	16.2	2.44	18.5	102	28.8	2.42
9	6	1/4	24.1	0.233	22.8	35.7	6.62	75.0	16.7	3.36	20.0	40.2	13.4	2.46	15.2	83.2	23.5	2.43
9	6	3/16	18.4	0.174	31.4	48.6	5.03	58.0	12.9	3.40	15.4	31.2	10.4	2.49	11.7	63.8	17.9	2.45

Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
9	5	1/2	42.0	0.465	7.75	16.4	11.6	115	25.5	3.14	32.2	45.1	18.1	1.97	21.1	109	35.6	2.20
9	5	3/8	32.6	0.349	11.3	22.8	8.97	92.4	20.5	3.21	25.5	36.8	14.7	2.03	16.9	86.8	27.9	2.23
9	5	5/16	27.6	0.291	14.2	28.0	7.58	79.7	17.7	3.24	21.9	31.9	12.8	2.05	14.5	74.4	23.7	2.25
9	5	1/4	22.4	0.233	18.5	35.7	6.15	66.0	14.7	3.28	18.0	26.6	10.6	2.08	12.0	61.1	19.4	2.27
9	3-1/2	5/16	24.4	0.291	9.04	28.0	6.71	63.2	14.0	3.07	18.1	14.1	8.05	1.45	9.15	38.9	16.2	2.00
9	3-1/2	1/4	19.9	0.233	12.1	35.7	5.46	52.6	11.7	3.10	14.9	11.9	6.78	1.47	7.61	32.3	13.3	2.02
9	3-1/2	3/16	15.2	0.174	17.1	48.6	4.16	41.0	9.12	3.14	11.5	9.36	5.35	1.50	5.92	25.1	10.2	2.03
9	3	5/16	23.3	0.291	7.32	28.0	6.42	57.7	12.8	3.00	16.8	9.86	6.58	1.24	7.51	28.9	13.6	1.92
9	3	1/4	19.0	0.233	9.90	35.7	5.22	48.1	10.7	3.04	13.9	8.37	5.58	1.27	6.27	24.2	11.2	1.93
9	3	3/16	14.5	0.174	14.2	48.6	3.99	37.6	8.36	3.07	10.8	6.65	4.43	1.29	4.90	18.9	8.68	1.95
8	7	5/16	29.7	0.291	21.1	24.5	8.16	76.9	19.2	3.07	22.7	62.6	17.9	2.77	20.7	110	30.0	2.42
8	7	1/4	24.1	0.233	27.1	31.4	6.62	63.5	15.9	3.10	18.6	51.8	14.8	2.80	17.0	89.9	24.4	2.43
8	7	3/16	18.4	0.174	37.1	42.9	5.03	49.2	12.3	3.13	14.3	40.1	11.5	2.82	13.1	68.8	18.6	2.45
8	6	5/8	50.8	0.581	7.32	10.8	14.1	114	28.5	2.85	35.6	72.2	24.1	2.27	29.0	150	46.0	2.17
8	6	1/2	42.0	0.465	9.90	14.2	11.6	98.1	24.5	2.91	30.1	62.5	20.8	2.32	24.6	127	38.4	2.20
8	6	3/8	32.6	0.349	14.2	19.9	8.97	79.1	19.8	2.97	23.9	50.6	16.9	2.37	19.6	100	30.0	2.23
8	6	5/16	27.6	0.291	17.6	24.5	7.58	68.2	17.1	3.00	20.5	43.7	14.6	2.40	16.8	85.7	25.5	2.25
8	6	1/4	22.4	0.233	22.8	31.4	6.15	56.5	14.1	3.03	16.8	36.3	12.1	2.43	13.8	70.2	20.8	2.27
8	6	3/16	17.1	0.174	31.4	42.9	4.68	43.8	11.0	3.06	13.0	28.2	9.41	2.46	10.7	53.8	15.9	2.28

Nominal Size			Weight per Foot lb.	Design Wall Thickness in.	b/t	h/t	Area in. ²	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot ft. ²
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
8	5	1/2	38.6	0.465	7.75	14.2	10.7	84.9	21.2	2.82	26.6	40.3	16.1	1.94	19.0	92.4	31.4	2.03
8	5	3/8	30.0	0.349	11.3	19.9	8.27	68.8	17.2	2.89	21.2	33.0	13.2	2.00	15.3	73.5	24.7	2.07
8	5	5/16	25.5	0.291	14.2	24.5	7.00	59.6	14.9	2.92	18.2	28.7	11.5	2.02	13.1	63.0	21.0	2.08
8	5	1/4	20.7	0.233	18.5	31.4	5.69	49.5	12.4	2.95	15.0	23.9	9.57	2.05	10.9	51.8	17.2	2.10
8	5	3/16	15.8	0.174	25.7	42.9	4.33	38.5	9.62	2.98	11.6	18.7	7.48	2.08	8.40	39.9	13.1	2.12
8	4-1/2	5/16	24.4	0.291	12.5	24.5	6.71	55.3	13.8	2.87	17.1	22.5	10.0	1.83	11.4	52.5	18.8	2.00
8	4-1/2	1/4	19.9	0.233	16.4	31.4	5.46	46.0	11.5	2.90	14.1	18.8	8.36	1.86	9.46	43.3	15.4	2.02
8	4-1/2	3/16	15.2	0.174	22.8	42.9	4.16	35.8	8.95	2.93	10.9	14.8	6.56	1.88	7.34	33.4	11.8	2.03
8	4	1/2	35.2	0.465	5.60	14.2	9.74	71.7	17.9	2.71	23.1	23.6	11.8	1.56	13.9	61.1	24.4	1.87
8	4	3/8	27.5	0.349	8.47	19.9	7.57	58.6	14.7	2.78	18.6	19.6	9.78	1.61	11.3	49.3	19.3	1.90
8	4	5/16	23.3	0.291	10.8	24.5	6.42	50.9	12.7	2.82	16.0	17.1	8.57	1.63	9.79	42.5	16.5	1.92
8	4	1/4	19.0	0.233	14.2	31.4	5.22	42.5	10.6	2.85	13.2	14.4	7.20	1.66	8.13	35.2	13.6	1.93
8	4	3/16	14.5	0.174	19.9	42.9	3.99	33.1	8.29	2.88	10.2	11.3	5.66	1.69	6.32	27.2	10.4	1.95
8	3-1/2	5/16	22.3	0.291	9.04	24.5	6.13	46.6	11.7	2.76	14.9	12.6	7.19	1.43	8.22	33.3	14.3	1.83
8	3-1/2	1/4	18.2	0.233	12.1	31.4	4.99	38.9	9.74	2.79	12.3	10.6	6.07	1.46	6.85	27.7	11.8	1.85
8	3-1/2	3/16	13.9	0.174	17.1	42.9	3.81	30.5	7.62	2.83	9.54	8.40	4.80	1.48	5.34	21.5	9.06	1.87
8	3	5/16	21.2	0.291	7.32	24.5	5.84	42.3	10.6	2.69	13.8	8.79	5.86	1.23	6.73	24.9	12.0	1.75
8	3	1/4	17.3	0.233	9.90	31.4	4.76	35.4	8.86	2.73	11.4	7.47	4.98	1.25	5.63	20.8	9.95	1.77
8	3	3/16	13.2	0.174	14.2	42.9	3.64	27.8	6.95	2.77	8.86	5.95	3.97	1.28	4.41	16.3	7.69	1.78
8	2	1/4	15.6	0.233	5.60	31.4	4.29	28.4	7.11	2.57	9.60	2.93	2.93	0.83	3.37	9.35	6.34	1.60
8	2	3/16	12.0	0.174	8.47	42.9	3.29	22.5	5.62	2.61	7.50	2.39	2.39	0.85	2.68	7.49	4.96	1.62

Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
7	6	5/16	25.5	0.291	17.6	21.1	7.00	49.5	14.1	2.66	16.8	39.0	13.0	2.36	15.1	70.2	22.2	2.08
7	6	1/4	20.7	0.233	22.8	27.1	5.69	41.1	11.7	2.69	13.9	32.4	10.8	2.39	12.5	57.6	18.1	2.10
7	6	3/16	15.8	0.174	31.4	37.1	4.33	32.0	9.14	2.72	10.7	25.3	8.42	2.41	9.64	44.2	13.8	2.12
7	5	1/2	35.2	0.465	7.75	12.1	9.74	60.5	17.3	2.49	21.5	35.5	14.2	1.91	16.9	75.8	27.2	1.87
7	5	3/8	27.5	0.349	11.3	17.1	7.57	49.4	14.1	2.56	17.3	29.2	11.7	1.96	13.6	60.6	21.4	1.90
7	5	5/16	23.3	0.291	14.2	21.1	6.42	42.9	12.3	2.59	14.9	25.5	10.2	1.99	11.8	52.0	18.3	1.92
7	5	1/4	19.0	0.233	18.5	27.1	5.22	35.8	10.2	2.62	12.3	21.3	8.51	2.02	9.75	42.8	15.0	1.93
7	5	3/16	14.5	0.174	25.7	37.1	3.99	27.9	7.98	2.65	9.51	16.7	6.67	2.04	7.56	33.0	11.5	1.95
7	4-1/2	5/16	22.3	0.291	12.5	21.1	6.13	39.7	11.3	2.54	13.9	19.9	8.85	1.80	10.2	43.5	16.3	1.83
7	4-1/2	1/4	18.2	0.233	16.4	27.1	4.99	33.1	9.46	2.58	11.5	16.7	7.42	1.83	8.47	35.9	13.4	1.85
7	4-1/2	3/16	13.9	0.174	22.8	37.1	3.81	25.9	7.40	2.61	8.91	13.1	5.83	1.86	6.58	27.7	10.3	1.87
7	4	1/2	31.8	0.465	5.60	12.1	8.81	50.6	14.5	2.40	18.5	20.6	10.3	1.53	12.3	50.5	21.1	1.70
7	4	3/8	24.9	0.349	8.47	17.1	6.87	41.7	11.9	2.46	15.0	17.2	8.62	1.58	10.0	40.9	16.8	1.73
7	4	5/16	21.2	0.291	10.8	21.1	5.84	36.4	10.4	2.50	12.9	15.1	7.57	1.61	8.71	35.4	14.4	1.75
7	4	1/4	17.3	0.233	14.2	27.1	4.76	30.5	8.70	2.53	10.7	12.7	6.37	1.64	7.25	29.3	11.8	1.77
7	4	3/16	13.2	0.174	19.9	37.1	3.64	23.9	6.82	2.56	8.32	10.0	5.02	1.66	5.65	22.7	9.09	1.78
7	3-1/2	5/16	20.1	0.291	9.04	21.1	5.55	33.1	9.47	2.44	12.0	11.1	6.33	1.41	7.29	27.8	12.4	1.67
7	3-1/2	1/4	16.5	0.233	12.1	27.1	4.53	27.8	7.94	2.48	9.93	9.38	5.36	1.44	6.09	23.1	10.2	1.68
7	3-1/2	3/16	12.6	0.174	17.1	37.1	3.46	21.8	6.24	2.51	7.72	7.43	4.25	1.47	4.76	18.0	7.90	1.70
7	3	5/16	19.1	0.291	7.32	21.1	5.26	29.9	8.53	2.38	11.0	7.72	5.15	1.21	5.94	20.9	10.5	1.58
7	3	1/4	15.6	0.233	9.90	27.1	4.29	25.1	7.18	2.42	9.14	6.58	4.39	1.24	4.99	17.5	8.66	1.60
7	3	3/16	12.0	0.174	14.2	37.1	3.29	19.8	5.66	2.45	7.13	5.25	3.50	1.26	3.92	13.7	6.71	1.62

Nominal Size			Weight per Foot lb.	Design Wall Thickness in.	b/t	h/t	Area in. ²	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot ft. ²
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
7	2	1/4	13.9	0.233	5.60	27.1	3.83	19.8	5.66	2.27	7.57	2.57	2.57	0.82	2.96	7.94	5.51	1.43
7	2	3/16	10.7	0.174	8.47	37.1	2.94	15.7	4.50	2.31	5.94	2.10	2.10	0.84	2.36	6.37	4.33	1.45
6	5	1/2	31.8	0.465	7.75	9.9	8.81	41.0	13.7	2.16	16.9	30.7	12.3	1.87	14.8	59.8	23.0	1.70
6	5	3/8	24.9	0.349	11.3	14.2	6.87	33.8	11.3	2.22	13.7	25.4	10.2	1.92	12.0	48.0	18.2	1.73
6	5	5/16	21.2	0.291	14.2	17.6	5.84	29.5	9.84	2.25	11.8	22.2	8.89	1.95	10.4	41.3	15.5	1.75
6	5	1/4	17.3	0.233	18.5	22.8	4.76	24.7	8.23	2.28	9.79	18.6	7.45	1.98	8.64	34.1	12.7	1.77
6	5	3/16	13.2	0.174	25.7	31.4	3.64	19.4	6.45	2.31	7.60	14.6	5.85	2.01	6.71	26.3	9.78	1.78
6	4-1/2	5/16	20.1	0.291	12.5	17.6	5.55	27.1	9.05	2.21	11.0	17.3	7.70	1.77	8.98	34.7	13.9	1.67
6	4-1/2	1/4	16.5	0.233	16.4	22.8	4.53	22.8	7.59	2.24	9.12	14.6	6.48	1.79	7.48	28.7	11.4	1.68
6	4-1/2	3/16	12.6	0.174	22.8	31.4	3.46	17.9	5.96	2.27	7.10	11.5	5.11	1.82	5.83	22.2	8.77	1.70
6	4-1/2	0.134	9.17	0.125	33.1	45.1	2.51	13.3	4.43	2.30	5.23	8.56	3.80	1.84	4.30	16.3	6.40	1.71
6	4	1/2	28.4	0.465	5.60	9.9	7.88	33.9	11.3	2.07	14.3	17.7	8.86	1.50	10.7	40.3	17.8	1.53
6	4	3/8	22.4	0.349	8.47	14.2	6.18	28.3	9.42	2.14	11.7	14.9	7.45	1.55	8.76	32.8	14.2	1.57
6	4	5/16	19.1	0.291	10.8	17.6	5.26	24.8	8.26	2.17	10.2	13.1	6.56	1.58	7.63	28.4	12.2	1.58
6	4	1/4	15.6	0.233	14.2	22.8	4.29	20.8	6.94	2.20	8.45	11.1	5.54	1.61	6.38	23.5	10.1	1.60
6	4	3/16	12.0	0.174	19.9	31.4	3.29	16.4	5.46	2.23	6.59	8.77	4.39	1.63	4.98	18.3	7.75	1.62
6	4	0.134	8.72	0.125	29.1	45.1	2.39	12.2	4.07	2.26	4.86	6.56	3.28	1.66	3.68	13.4	5.67	1.63
6	4	1/8	8.16	0.116	31.4	48.6	2.24	11.5	3.82	2.26	4.56	6.16	3.08	1.66	3.46	12.6	5.31	1.63
6	3-1/2	1/4	14.8	0.233	12.1	22.8	4.06	18.9	6.30	2.16	7.78	8.14	4.65	1.42	5.33	18.7	8.71	1.52
6	3-1/2	3/16	11.3	0.174	17.1	31.4	3.11	14.9	4.97	2.19	6.08	6.47	3.70	1.44	4.18	14.6	6.74	1.53
6	3-1/2	0.134	8.26	0.125	25.1	45.1	2.27	11.1	3.71	2.22	4.49	4.86	2.77	1.46	3.10	10.8	4.94	1.55
6	3-1/2	1/8	7.73	0.116	27.1	48.6	2.12	10.5	3.48	2.22	4.22	4.57	2.61	1.47	2.91	10.1	4.62	1.55

Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
6	3	5/16	17.0	0.291	7.32	17.6	4.68	20.0	6.68	2.07	8.49	6.65	4.43	1.19	5.15	16.9	8.90	1.42
6	3	1/4	13.9	0.233	9.90	22.8	3.83	17.0	5.65	2.10	7.11	5.69	3.79	1.22	4.34	14.2	7.37	1.43
6	3	3/16	10.7	0.174	14.2	31.4	2.94	13.4	4.48	2.14	5.57	4.55	3.04	1.24	3.43	11.1	5.72	1.45
6	3	0.134	7.81	0.125	21.1	45.1	2.14	10.0	3.35	2.17	4.13	3.44	2.29	1.27	2.55	8.25	4.20	1.46
6	3	1/8	7.31	0.116	22.8	48.6	2.00	9.45	3.15	2.17	3.87	3.24	2.16	1.27	2.40	7.74	3.94	1.47
6	2	1/4	12.2	0.233	5.60	22.8	3.36	13.1	4.36	1.97	5.77	2.20	2.20	0.81	2.55	6.54	4.69	1.27
6	2	3/16	9.42	0.174	8.47	31.4	2.59	10.5	3.49	2.01	4.56	1.81	1.81	0.83	2.04	5.25	3.69	1.28
6	2	0.134	6.89	0.125	13.0	45.1	1.89	7.90	2.63	2.04	3.40	1.39	1.39	0.86	1.54	3.96	2.74	1.30
6	2	1/8	6.46	0.116	14.2	48.6	1.77	7.43	2.48	2.05	3.19	1.31	1.31	0.86	1.45	3.73	2.57	1.30
5-1/2	3-1/2	1/4	13.9	0.233	12.1	20.7	3.83	15.2	5.53	1.99	6.80	7.51	4.29	1.40	4.95	16.5	7.95	1.43
5-1/2	3-1/2	3/16	10.7	0.174	17.1	28.5	2.94	12.1	4.38	2.02	5.32	5.99	3.42	1.43	3.89	12.9	6.16	1.45
5-1/2	3-1/2	0.134	7.81	0.125	25.1	41.1	2.14	9.01	3.28	2.05	3.94	4.50	2.57	1.45	2.89	9.52	4.51	1.46
5-1/2	3-1/2	1/8	7.31	0.116	27.1	44.3	2.00	8.47	3.08	2.06	3.70	4.23	2.42	1.45	2.72	8.93	4.23	1.47
5-1/2	3	1/4	13.1	0.233	9.90	20.7	3.60	13.6	4.95	1.94	6.18	5.24	3.50	1.21	4.02	12.6	6.73	1.35
5-1/2	3	3/16	10.1	0.174	14.2	28.5	2.76	10.8	3.93	1.98	4.86	4.21	2.80	1.23	3.18	9.89	5.23	1.37
5-1/2	3	0.134	7.35	0.125	21.1	41.1	2.02	8.11	2.95	2.01	3.61	3.18	2.12	1.26	2.37	7.33	3.84	1.38
5-1/2	3	1/8	6.88	0.116	22.8	44.3	1.89	7.63	2.77	2.01	3.39	2.99	2.00	1.26	2.23	6.88	3.60	1.38
5-1/2	2	1/4	11.4	0.233	5.60	20.7	3.13	10.4	3.77	1.82	4.96	2.02	2.02	0.80	2.34	5.85	4.28	1.18
5-1/2	2	3/16	8.78	0.174	8.47	28.5	2.42	8.34	3.03	1.86	3.93	1.66	1.66	0.83	1.89	4.70	3.37	1.20
5-1/2	2	0.134	6.44	0.125	13.0	41.1	1.77	6.31	2.29	1.89	2.94	1.28	1.28	0.85	1.43	3.55	2.51	1.21
5-1/2	2	1/8	6.03	0.116	14.2	44.3	1.65	5.94	2.16	1.89	2.76	1.21	1.21	0.85	1.34	3.34	2.35	1.22

Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
5	4-1/2	5/16	18.0	0.291	12.5	14.2	4.97	17.4	6.96	1.87	8.35	14.8	6.56	1.72	7.76	26.3	11.4	1.50
5	4-1/2	1/4	14.8	0.233	16.4	18.5	4.06	14.7	5.87	1.90	6.98	12.5	5.54	1.75	6.49	21.8	9.41	1.52
5	4-1/2	3/16	11.3	0.174	22.8	25.7	3.11	11.6	4.63	1.93	5.45	9.85	4.38	1.78	5.07	16.9	7.26	1.53
5	4-1/2	0.134	8.26	0.125	33.1	37.1	2.27	8.65	3.46	1.95	4.03	7.36	3.27	1.80	3.75	12.4	5.31	1.55
5	4-1/2	1/8	7.73	0.116	35.7	40.0	2.12	8.13	3.25	1.96	3.78	6.92	3.08	1.81	3.52	11.7	4.97	1.55
5	4	5/16	17.0	0.291	10.8	14.2	4.68	15.8	6.31	1.84	7.67	11.1	5.56	1.54	6.56	21.6	10.1	1.42
5	4	1/4	13.9	0.233	14.2	18.5	3.83	13.3	5.34	1.87	6.42	9.44	4.72	1.57	5.50	18.0	8.30	1.43
5	4	3/16	10.7	0.174	19.9	25.7	2.94	10.6	4.23	1.90	5.03	7.50	3.75	1.60	4.32	14.0	6.42	1.45
5	4	0.134	7.81	0.125	29.1	37.1	2.14	7.91	3.16	1.92	3.73	5.62	2.81	1.62	3.20	10.3	4.70	1.46
5	4	1/8	7.31	0.116	31.4	40.0	2.00	7.43	2.97	1.93	3.50	5.28	2.64	1.62	3.00	9.68	4.40	1.47
5	3-1/2	5/16	15.9	0.291	9.04	14.2	4.39	14.2	5.67	1.80	6.99	8.08	4.62	1.36	5.42	17.2	8.69	1.33
5	3-1/2	1/4	13.1	0.233	12.1	18.5	3.60	12.0	4.81	1.83	5.87	6.89	3.94	1.38	4.57	14.4	7.20	1.35
5	3-1/2	3/16	10.1	0.174	17.1	25.7	2.76	9.56	3.82	1.86	4.61	5.50	3.14	1.41	3.60	11.2	5.58	1.37
5	3-1/2	0.134	7.35	0.125	25.1	37.1	2.02	7.17	2.87	1.89	3.42	4.15	2.37	1.43	2.68	8.31	4.09	1.38
5	3-1/2	1/8	6.88	0.116	27.1	40.0	1.89	6.74	2.70	1.89	3.21	3.90	2.23	1.44	2.52	7.80	3.84	1.38
5	3	5/16	14.8	0.291	7.32	14.2	4.09	12.6	5.02	1.75	6.30	5.58	3.72	1.17	4.36	13.1	7.32	1.25
5	3	1/4	12.2	0.233	9.90	18.5	3.36	10.7	4.28	1.78	5.31	4.80	3.20	1.19	3.70	11.0	6.09	1.27
5	3	3/16	9.42	0.174	14.2	25.7	2.59	8.54	3.42	1.82	4.19	3.86	2.57	1.22	2.93	8.66	4.73	1.28
5	3	0.134	6.89	0.125	21.1	37.1	1.89	6.43	2.57	1.84	3.12	2.92	1.95	1.24	2.19	6.43	3.49	1.30
5	3	1/8	6.46	0.116	22.8	40.0	1.77	6.05	2.42	1.85	2.93	2.75	1.84	1.25	2.06	6.03	3.27	1.30

Nominal Size			Weight per Foot lb.	Design Wall Thickness in.	b/t	h/t	Area in. ²	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot ft. ²
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
5	2-1/2	1/4	11.4	0.233	7.75	18.5	3.13	9.38	3.75	1.73	4.76	3.12	2.50	1.00	2.89	7.91	4.98	1.18
5	2-1/2	3/16	8.78	0.174	11.3	25.7	2.42	7.52	3.01	1.76	3.77	2.53	2.03	1.02	2.31	6.28	3.89	1.20
5	2-1/2	0.134	6.44	0.125	17.1	37.1	1.77	5.68	2.27	1.79	2.82	1.94	1.55	1.05	1.74	4.69	2.88	1.21
5	2-1/2	1/8	6.03	0.116	18.5	40.0	1.65	5.35	2.14	1.80	2.65	1.83	1.46	1.05	1.63	4.41	2.70	1.22
5	2	1/4	10.5	0.233	5.60	18.5	2.90	8.06	3.22	1.67	4.21	1.84	1.84	0.80	2.13	5.16	3.87	1.10
5	2	3/16	8.15	0.174	8.47	25.7	2.24	6.51	2.60	1.70	3.35	1.51	1.51	0.82	1.73	4.16	3.05	1.12
5	2	0.134	5.98	0.125	13.0	37.1	1.64	4.94	1.98	1.73	2.51	1.17	1.17	0.84	1.31	3.14	2.27	1.13
5	2	1/8	5.61	0.116	14.2	40.0	1.54	4.66	1.86	1.74	2.36	1.11	1.11	0.85	1.23	2.96	2.13	1.13
4-1/2	3-1/2	1/4	12.2	0.233	12.1	16.4	3.36	9.28	4.13	1.66	5.00	6.27	3.58	1.37	4.19	12.3	6.44	1.27
4-1/2	3-1/2	3/16	9.42	0.174	17.1	22.8	2.59	7.41	3.29	1.69	3.94	5.02	2.87	1.39	3.31	9.64	5.00	1.28
4-1/2	3-1/2	0.134	6.89	0.125	25.1	33.1	1.89	5.57	2.48	1.72	2.93	3.79	2.17	1.42	2.47	7.13	3.67	1.30
4-1/2	3-1/2	1/8	6.46	0.116	27.1	35.7	1.77	5.24	2.33	1.72	2.76	3.57	2.04	1.42	2.32	6.69	3.44	1.30
4-1/2	3	1/4	11.4	0.233	9.90	16.4	3.13	8.22	3.65	1.62	4.50	4.35	2.90	1.18	3.38	9.46	5.44	1.18
4-1/2	3	3/16	8.78	0.174	14.2	22.8	2.42	6.59	2.93	1.65	3.56	3.51	2.34	1.21	2.69	7.45	4.24	1.20
4-1/2	3	0.134	6.44	0.125	21.1	33.1	1.77	4.98	2.21	1.68	2.66	2.66	1.78	1.23	2.01	5.54	3.13	1.21
4-1/2	3	1/8	6.03	0.116	22.8	35.7	1.65	4.68	2.08	1.68	2.50	2.51	1.67	1.23	1.89	5.20	2.93	1.22
4-1/2	2-1/2	1/4	10.5	0.233	7.75	16.4	2.90	7.16	3.18	1.57	4.01	2.82	2.26	0.99	2.63	6.83	4.45	1.10
4-1/2	2-1/2	3/16	8.15	0.174	11.3	22.8	2.24	5.77	2.57	1.60	3.19	2.30	1.84	1.01	2.11	5.43	3.49	1.12
4-1/2	2-1/2	0.134	5.98	0.125	17.1	33.1	1.64	4.38	1.95	1.63	2.39	1.76	1.41	1.04	1.59	4.06	2.58	1.13
4-1/2	2-1/2	1/8	5.61	0.116	18.5	35.7	1.54	4.13	1.83	1.64	2.25	1.66	1.33	1.04	1.49	3.82	2.42	1.13

Nominal Size			Weight per Foot lb.	Design Wall Thickness in.	b/t	h/t	Area in. ²	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot ft. ²
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
4-1/2	2	1/4	9.66	0.233	5.60	16.4	2.67	6.10	2.71	1.51	3.51	1.65	1.65	0.79	1.93	4.49	3.46	1.02
4-1/2	2	3/16	7.51	0.174	8.47	22.8	2.07	4.96	2.20	1.55	2.81	1.37	1.37	0.81	1.57	3.62	2.73	1.03
4-1/2	2	0.134	5.53	0.125	13.0	33.1	1.52	3.78	1.68	1.58	2.12	1.06	1.06	0.84	1.19	2.74	2.04	1.05
4-1/2	2	1/8	5.18	0.116	14.2	35.7	1.42	3.57	1.59	1.58	1.99	1.00	1.00	0.84	1.12	2.58	1.91	1.05
4	3-1/2	5/16	13.8	0.291	9.04	10.8	3.80	8.12	4.06	1.46	4.94	6.58	3.76	1.31	4.49	12.2	6.82	1.17
4	3-1/2	1/4	11.4	0.233	12.1	14.2	3.13	6.96	3.48	1.49	4.19	5.65	3.23	1.34	3.81	10.3	5.68	1.18
4	3-1/2	3/16	8.78	0.174	17.1	19.9	2.42	5.58	2.79	1.52	3.32	4.54	2.59	1.37	3.02	8.07	4.42	1.20
4	3-1/2	0.134	6.44	0.125	25.1	29.1	1.77	4.22	2.11	1.54	2.48	3.43	1.96	1.39	2.26	5.99	3.25	1.21
4	3-1/2	1/8	6.03	0.116	27.1	31.4	1.65	3.97	1.98	1.55	2.33	3.23	1.85	1.40	2.13	5.62	3.05	1.22
4	3	5/16	12.7	0.291	7.32	10.8	3.51	7.12	3.56	1.42	4.40	4.51	3.01	1.13	3.58	9.40	5.75	1.08
4	3	1/4	10.5	0.233	9.90	14.2	2.90	6.13	3.07	1.45	3.75	3.90	2.60	1.16	3.06	7.95	4.80	1.10
4	3	3/16	8.15	0.174	14.2	19.9	2.24	4.94	2.47	1.48	2.98	3.16	2.11	1.19	2.44	6.27	3.75	1.12
4	3	0.134	5.98	0.125	21.1	29.1	1.64	3.75	1.87	1.51	2.24	2.41	1.60	1.21	1.84	4.67	2.77	1.13
4	3	1/8	5.61	0.116	22.8	31.4	1.54	3.53	1.77	1.51	2.10	2.27	1.51	1.21	1.73	4.39	2.60	1.13
4	2-1/2	1/4	9.66	0.233	7.75	14.2	2.67	5.31	2.65	1.41	3.31	2.52	2.02	0.97	2.36	5.77	3.92	1.02
4	2-1/2	3/16	7.51	0.174	11.3	19.9	2.07	4.30	2.15	1.44	2.65	2.06	1.65	1.00	1.90	4.60	3.08	1.03
4	2-1/2	0.134	5.53	0.125	17.1	29.1	1.52	3.28	1.64	1.47	1.99	1.58	1.27	1.02	1.44	3.45	2.29	1.05
4	2-1/2	1/8	5.18	0.116	18.5	31.4	1.42	3.09	1.55	1.47	1.88	1.50	1.20	1.03	1.36	3.24	2.15	1.05
4	2	1/4	8.81	0.233	5.60	14.2	2.43	4.48	2.24	1.36	2.87	1.47	1.47	0.78	1.72	3.82	3.05	0.93
4	2	3/16	6.87	0.174	8.47	19.9	1.89	3.66	1.83	1.39	2.31	1.22	1.22	0.80	1.41	3.08	2.42	0.95
4	2	0.134	5.07	0.125	13.0	29.1	1.39	2.81	1.41	1.42	1.75	0.95	0.95	0.83	1.08	2.34	1.80	0.96
4	2	1/8	4.75	0.116	14.2	31.4	1.31	2.65	1.33	1.43	1.65	0.90	0.90	0.83	1.01	2.20	1.69	0.97

Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
4	1-1/2	3/16	6.23	0.174	5.60	19.9	1.72	3.03	1.51	1.33	1.98	0.62	0.83	0.60	0.96	1.78	1.75	0.87
4	1-1/2	0.134	4.61	0.125	9.04	29.1	1.27	2.34	1.17	1.36	1.51	0.49	0.66	0.62	0.74	1.38	1.32	0.88
4	1-1/2	1/8	4.33	0.116	9.90	31.4	1.19	2.22	1.11	1.36	1.42	0.47	0.62	0.63	0.70	1.30	1.24	0.88
3-1/2	3	1/4	9.66	0.233	9.90	12.1	2.67	4.41	2.52	1.29	3.05	3.46	2.31	1.14	2.74	6.48	4.16	1.02
3-1/2	3	3/16	7.51	0.174	14.2	17.1	2.07	3.57	2.04	1.31	2.44	2.81	1.87	1.17	2.19	5.13	3.26	1.03
3-1/2	3	0.134	5.53	0.125	21.1	25.1	1.52	2.72	1.56	1.34	1.84	2.15	1.43	1.19	1.66	3.83	2.41	1.05
3-1/2	3	1/8	5.18	0.116	22.8	27.1	1.42	2.57	1.47	1.34	1.73	2.03	1.35	1.19	1.56	3.60	2.26	1.05
3-1/2	2-1/2	1/4	8.81	0.233	7.75	12.1	2.43	3.78	2.16	1.25	2.67	2.22	1.78	0.96	2.10	4.74	3.40	0.93
3-1/2	2-1/2	3/16	6.87	0.174	11.3	17.1	1.89	3.09	1.77	1.28	2.15	1.83	1.46	0.98	1.70	3.79	2.68	0.95
3-1/2	2-1/2	0.134	5.07	0.125	17.1	25.1	1.39	2.37	1.35	1.30	1.63	1.41	1.13	1.01	1.29	2.84	1.99	0.96
3-1/2	2-1/2	1/8	4.75	0.116	18.5	27.1	1.31	2.24	1.28	1.31	1.54	1.33	1.06	1.01	1.22	2.68	1.87	0.97
3-1/2	2	1/4	7.96	0.233	5.60	12.1	2.20	3.16	1.81	1.20	2.29	1.29	1.29	0.77	1.52	3.16	2.64	0.85
3-1/2	2	3/16	6.23	0.174	8.47	17.1	1.72	2.61	1.49	1.23	1.86	1.08	1.08	0.79	1.25	2.56	2.10	0.87
3-1/2	2	0.134	4.61	0.125	13.0	25.1	1.27	2.01	1.15	1.26	1.42	0.84	0.84	0.81	0.96	1.94	1.57	0.88
3-1/2	2	1/8	4.33	0.116	14.2	27.1	1.19	1.90	1.09	1.26	1.34	0.80	0.80	0.82	0.91	1.83	1.48	0.88
3-1/2	1-1/2	3/16	5.59	0.174	5.60	17.1	1.54	2.13	1.21	1.17	1.57	0.54	0.72	0.59	0.84	1.49	1.52	0.78
3-1/2	1-1/2	0.134	4.16	0.125	9.04	25.1	1.14	1.66	0.95	1.20	1.21	0.43	0.58	0.62	0.66	1.16	1.15	0.80
3-1/2	1-1/2	1/8	3.90	0.116	9.90	27.1	1.07	1.57	0.90	1.21	1.14	0.41	0.55	0.62	0.62	1.09	1.08	0.80
3	2-1/2	1/4	7.96	0.233	7.75	9.90	2.20	2.57	1.71	1.08	2.09	1.92	1.54	0.93	1.83	3.74	2.87	0.85
3	2-1/2	3/16	6.23	0.174	11.3	14.2	1.72	2.11	1.41	1.11	1.70	1.59	1.27	0.96	1.50	3.00	2.27	0.87
3	2-1/2	0.134	4.61	0.125	17.1	21.1	1.27	1.63	1.09	1.13	1.30	1.23	0.99	0.99	1.14	2.26	1.69	0.88
3	2-1/2	1/8	4.33	0.116	18.5	22.8	1.19	1.54	1.03	1.14	1.22	1.16	0.93	0.99	1.08	2.13	1.59	0.88

Nominal Size			Weight per Foot lb.	Design Wall Thickness in.	b/t	h/t	Area in. ²	X-X Axis Properties				Y-Y Axis Properties				Torsion		Surface Area per Foot ft. ²
Depth H	Width B	Wall						I	S	r	Z	I	S	r	Z	J	C	
in.	in.	in.						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
3	2	1/4	7.11	0.233	5.60	9.90	1.97	2.12	1.41	1.04	1.77	1.11	1.11	0.75	1.31	2.52	2.23	0.77
3	2	3/16	5.59	0.174	8.47	14.2	1.54	1.77	1.18	1.07	1.46	0.93	0.93	0.78	1.09	2.05	1.78	0.78
3	2	0.134	4.16	0.125	13.0	21.1	1.14	1.38	0.92	1.10	1.12	0.73	0.73	0.80	0.84	1.56	1.34	0.80
3	2	1/8	3.90	0.116	14.2	22.8	1.07	1.30	0.87	1.10	1.06	0.69	0.69	0.80	0.80	1.47	1.26	0.80
3	1-1/2	3/16	4.96	0.174	5.60	14.2	1.37	1.42	0.95	1.02	1.21	0.47	0.62	0.58	0.73	1.21	1.29	0.70
3	1-1/2	0.134	3.70	0.125	9.04	21.1	1.02	1.12	0.75	1.05	0.94	0.37	0.50	0.61	0.57	0.94	0.98	0.71
3	1-1/2	1/8	3.48	0.116	9.90	22.8	0.96	1.06	0.71	1.05	0.89	0.36	0.47	0.61	0.54	0.89	0.92	0.72
3	1-1/2	0.100	2.84	0.093	13.1	29.3	0.78	0.89	0.59	1.07	0.74	0.30	0.40	0.62	0.45	0.74	0.76	0.72
2-1/2	2	1/4	6.26	0.233	5.60	7.75	1.74	1.32	1.06	0.87	1.31	0.92	0.92	0.73	1.11	1.90	1.82	0.68
2-1/2	2	3/16	4.96	0.174	8.47	11.3	1.37	1.12	0.89	0.90	1.09	0.79	0.79	0.76	0.93	1.56	1.46	0.70
2-1/2	2	0.134	3.70	0.125	13.0	17.1	1.02	0.88	0.70	0.93	0.85	0.62	0.62	0.78	0.73	1.19	1.10	0.71
2-1/2	2	1/8	3.48	0.116	14.2	18.5	0.96	0.83	0.67	0.93	0.80	0.59	0.59	0.78	0.69	1.13	1.04	0.72
2-1/2	1-1/2	3/16	4.32	0.174	5.60	11.3	1.20	0.88	0.71	0.86	0.89	0.39	0.52	0.57	0.61	0.93	1.05	0.62
2-1/2	1-1/2	0.134	3.25	0.125	9.04	17.1	0.89	0.70	0.56	0.89	0.70	0.31	0.42	0.59	0.49	0.73	0.81	0.63
2-1/2	1-1/2	1/8	3.05	0.116	9.90	18.5	0.84	0.67	0.54	0.89	0.66	0.30	0.40	0.60	0.46	0.69	0.76	0.63
2-1/2	1-1/2	0.100	2.50	0.093	13.1	23.9	0.69	0.56	0.45	0.90	0.55	0.25	0.34	0.61	0.39	0.57	0.63	0.64
2	1-1/2	0.134	2.79	0.125	9.04	13.0	0.77	0.40	0.40	0.72	0.49	0.26	0.34	0.58	0.40	0.52	0.64	0.55
2	1-1/2	1/8	2.63	0.116	9.90	14.2	0.72	0.38	0.38	0.73	0.47	0.24	0.33	0.58	0.38	0.50	0.60	0.55