

This publication presents tables of dimensions and section properties for square 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 square 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 square structural steel tubing. These terms replace “structural tubing” and “pipe,” which had been used previously.

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Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	J	C	
in.	in.	in.	lb.	in.			in. <sup>2</sup>	in. <sup>4</sup>	in. <sup>3</sup>	in.	in. <sup>3</sup>	in. <sup>4</sup>	in. <sup>3</sup>	ft. <sup>2</sup>
12	12	5/8	93.34	0.581	17.6	17.6	25.7	548	91.4	4.62	108	886	151	3.83
12	12	1/2	76.07	0.465	22.8	22.8	20.9	457	76.2	4.68	89.2	728	123	3.87
12	12	3/8	58.10	0.349	31.4	31.4	15.9	357	59.5	4.73	69.0	561	94.5	3.90
12	12	5/16	48.86	0.291	38.3	38.3	13.4	304	50.6	4.76	58.4	473	79.6	3.92
12	12	1/4	39.43	0.233	48.6	48.6	10.8	248	41.3	4.79	47.4	383	64.3	3.93
10	10	5/8	76.33	0.581	14.2	14.2	21.0	304	60.8	3.80	72.7	498	102	3.17
10	10	1/2	62.46	0.465	18.5	18.5	17.2	256	51.2	3.86	60.4	412	84.2	3.20
10	10	3/8	47.90	0.349	25.7	25.7	13.2	202	40.3	3.92	47.0	319	64.8	3.23
10	10	5/16	40.35	0.291	31.4	31.4	11.1	172	34.4	3.94	39.9	270	54.7	3.25
10	10	1/4	32.63	0.233	40.0	40.0	8.94	141	28.2	3.97	32.5	220	44.3	3.27
10	10	3/16	24.73	0.174	54.3	54.3	6.78	108	21.7	4.00	24.8	167	33.6	3.28
8	8	5/8	59.32	0.581	10.8	10.8	16.4	146	36.5	2.99	44.2	244	63.2	2.50
8	8	1/2	48.85	0.465	14.2	14.2	13.5	125	31.1	3.04	37.1	204	52.4	2.53
8	8	3/8	37.69	0.349	19.9	19.9	10.4	99.5	24.9	3.10	29.2	160	40.7	2.57
8	8	5/16	31.84	0.291	24.5	24.5	8.74	85.5	21.4	3.13	25.0	136	34.5	2.58
8	8	1/4	25.82	0.233	31.4	31.4	7.08	70.5	17.6	3.16	20.4	111	28.0	2.60
8	8	3/16	19.63	0.174	42.9	42.9	5.38	54.5	13.6	3.18	15.7	84.6	21.3	2.62
8	8	0.134	14.19	0.125	61.2	61.2	3.89	40.0	9.99	3.21	11.4	61.4	15.5	2.63
8	8	1/8	13.26	0.116	65.8	65.8	3.63	37.4	9.36	3.21	10.7	57.5	14.4	2.63
7	7	5/8	50.81	0.581	9.04	9.04	14.1	93.2	26.6	2.58	32.6	158	47.1	2.17
7	7	1/2	42.05	0.465	12.1	12.1	11.6	80.4	23.0	2.63	27.6	133	39.3	2.20
7	7	3/8	32.58	0.349	17.1	17.1	8.97	64.9	18.5	2.69	21.9	105	30.7	2.23
7	7	5/16	27.59	0.291	21.1	21.1	7.58	56.0	16.0	2.72	18.8	89.6	26.1	2.25
7	7	1/4	22.42	0.233	27.1	27.1	6.15	46.4	13.3	2.75	15.4	73.4	21.2	2.27
7	7	3/16	17.08	0.174	37.1	37.1	4.68	36.0	10.3	2.77	11.9	56.2	16.2	2.28
7	7	0.134	12.37	0.125	53.2	53.2	3.39	26.5	7.58	2.80	8.69	40.9	11.8	2.30
7	7	1/8	11.56	0.116	57.2	57.2	3.17	24.9	7.10	2.80	8.13	38.3	11.0	2.30

Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	J	C	
in.	in.	in.	lb.	in.			in. <sup>2</sup>	in. <sup>4</sup>	in. <sup>3</sup>	in.	in. <sup>3</sup>	in. <sup>4</sup>	in. <sup>3</sup>	ft. <sup>2</sup>
6	6	5/8	42.30	0.581	7.32	7.32	11.7	55.0	18.3	2.17	22.7	95.0	33.4	1.83
6	6	1/2	35.24	0.465	9.90	9.90	9.74	48.2	16.1	2.22	19.5	81.1	28.1	1.87
6	6	3/8	27.48	0.349	14.2	14.2	7.57	39.4	13.1	2.28	15.6	64.6	22.1	1.90
6	6	5/16	23.34	0.291	17.6	17.6	6.42	34.3	11.4	2.31	13.5	55.4	18.9	1.92
6	6	1/4	19.02	0.233	22.8	22.8	5.22	28.6	9.52	2.34	11.1	45.5	15.4	1.93
6	6	3/16	14.53	0.174	31.4	31.4	3.99	22.3	7.44	2.37	8.62	35.0	11.8	1.95
6	6	0.134	10.54	0.125	45.1	45.1	2.89	16.5	5.50	2.39	6.32	25.6	8.60	1.96
6	6	1/8	9.86	0.116	48.6	48.6	2.70	15.5	5.16	2.39	5.93	23.9	8.04	1.97
5-1/2	5-1/2	3/8	24.93	0.349	12.8	12.8	6.87	29.7	10.8	2.08	12.9	49.0	18.3	1.73
5-1/2	5-1/2	5/16	21.21	0.291	15.9	15.9	5.84	25.9	9.41	2.11	11.1	42.1	15.7	1.75
5-1/2	5-1/2	1/4	17.32	0.233	20.7	20.7	4.76	21.7	7.88	2.13	9.25	34.7	12.9	1.77
5-1/2	5-1/2	3/16	13.25	0.174	28.5	28.5	3.64	17.0	6.18	2.16	7.18	26.8	9.87	1.78
5-1/2	5-1/2	0.134	9.63	0.125	41.1	41.1	2.64	12.6	4.59	2.19	5.28	19.6	7.19	1.80
5-1/2	5-1/2	1/8	9.01	0.116	44.3	44.3	2.47	11.8	4.31	2.19	4.95	18.4	6.73	1.80
5	5	1/2	28.43	0.465	7.75	7.75	7.88	25.9	10.4	1.81	12.7	44.6	18.7	1.53
5	5	3/8	22.37	0.349	11.3	11.3	6.18	21.7	8.66	1.87	10.4	36.1	14.9	1.57
5	5	5/16	19.08	0.291	14.2	14.2	5.26	19.0	7.60	1.90	9.04	31.1	12.8	1.58
5	5	1/4	15.62	0.233	18.5	18.5	4.29	16.0	6.40	1.93	7.53	25.8	10.5	1.60
5	5	3/16	11.97	0.174	25.7	25.7	3.29	12.6	5.04	1.96	5.87	20.0	8.10	1.62
5	5	0.134	8.72	0.125	37.1	37.1	2.39	9.39	3.76	1.98	4.33	14.6	5.92	1.63
5	5	1/8	8.16	0.116	40.0	40.0	2.24	8.82	3.53	1.99	4.06	13.7	5.54	1.63
4-1/2	4-1/2	5/16	16.96	0.291	12.5	12.5	4.68	13.5	5.98	1.70	7.15	22.3	10.2	1.42
4-1/2	4-1/2	1/4	13.91	0.233	16.4	16.4	3.83	11.4	5.07	1.73	5.99	18.5	8.42	1.43
4-1/2	4-1/2	3/16	10.70	0.174	22.8	22.8	2.94	9.04	4.02	1.75	4.70	14.4	6.50	1.45
4-1/2	4-1/2	0.134	7.81	0.125	33.1	33.1	2.14	6.77	3.01	1.78	3.48	10.6	4.76	1.46
4-1/2	4-1/2	1/8	7.31	0.116	35.7	35.7	2.00	6.36	2.83	1.78	3.27	9.94	4.46	1.47

Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	J	C	
in.	in.	in.	lb.	in.			in. <sup>2</sup>	in. <sup>4</sup>	in. <sup>3</sup>	in.	in. <sup>3</sup>	in. <sup>4</sup>	in. <sup>3</sup>	ft. <sup>2</sup>
4	4	1/2	21.63	0.465	5.60	5.60	6.02	11.9	5.93	1.40	7.36	21.0	11.2	1.20
4	4	3/8	17.27	0.349	8.47	8.47	4.78	10.2	5.12	1.46	6.22	17.5	9.13	1.23
4	4	5/16	14.83	0.291	10.8	10.8	4.09	9.12	4.56	1.49	5.48	15.3	7.90	1.25
4	4	1/4	12.21	0.233	14.2	14.2	3.36	7.79	3.89	1.52	4.62	12.8	6.55	1.27
4	4	3/16	9.42	0.174	19.9	19.9	2.59	6.22	3.11	1.55	3.65	10.0	5.08	1.28
4	4	0.134	6.89	0.125	29.1	29.1	1.89	4.68	2.34	1.57	2.72	7.38	3.74	1.30
4	4	1/8	6.46	0.116	31.4	31.4	1.77	4.41	2.20	1.58	2.55	6.92	3.50	1.30
3-1/2	3-1/2	5/16	12.70	0.291	9.04	9.04	3.51	5.83	3.33	1.29	4.02	9.90	5.89	1.08
3-1/2	3-1/2	1/4	10.51	0.233	12.1	12.1	2.90	5.03	2.87	1.32	3.43	8.33	4.92	1.10
3-1/2	3-1/2	3/16	8.15	0.174	17.1	17.1	2.24	4.06	2.32	1.35	2.73	6.57	3.84	1.12
3-1/2	3-1/2	0.134	5.98	0.125	25.1	25.1	1.64	3.08	1.76	1.37	2.05	4.88	2.83	1.13
3-1/2	3-1/2	1/8	5.61	0.116	27.1	27.1	1.54	2.90	1.66	1.37	1.93	4.58	2.66	1.13
3	3	1/4	8.81	0.233	9.90	9.90	2.43	3.01	2.01	1.11	2.41	5.07	3.51	0.93
3	3	3/16	6.87	0.174	14.2	14.2	1.89	2.46	1.64	1.14	1.95	4.04	2.76	0.95
3	3	0.134	5.07	0.125	21.1	21.1	1.39	1.89	1.26	1.17	1.48	3.03	2.05	0.96
3	3	1/8	4.75	0.116	22.8	22.8	1.31	1.79	1.19	1.17	1.39	2.84	1.93	0.97
2-1/2	2-1/2	1/4	7.11	0.233	7.75	7.75	1.97	1.62	1.30	0.91	1.57	2.79	2.34	0.77
2-1/2	2-1/2	3/16	5.59	0.174	11.3	11.3	1.54	1.35	1.08	0.94	1.29	2.25	1.87	0.78
2-1/2	2-1/2	0.134	4.16	0.125	17.1	17.1	1.14	1.06	0.84	0.96	1.00	1.71	1.40	0.80
2-1/2	2-1/2	1/8	3.90	0.116	18.5	18.5	1.07	1.00	0.80	0.96	0.94	1.61	1.32	0.80
2	2	1/4	5.41	0.233	5.60	5.60	1.50	0.74	0.74	0.70	0.90	1.31	1.40	0.60
2	2	3/16	4.32	0.174	8.47	8.47	1.20	0.64	0.64	0.73	0.77	1.09	1.14	0.62
2	2	0.134	3.25	0.125	13.0	13.0	0.89	0.51	0.51	0.76	0.61	0.84	0.87	0.63
2	2	1/8	3.05	0.116	14.2	14.2	0.84	0.49	0.49	0.76	0.58	0.80	0.82	0.63
2	2	0.100	2.50	0.093	18.5	18.5	0.69	0.41	0.41	0.77	0.48	0.66	0.67	0.64

Nominal Size			Weight per Foot	Design Wall Thickness	b/t	h/t	Area	Properties				Torsion		Surface Area per Foot
Depth H	Width B	Wall						I	S	r	Z	J	C	
in.	in.	in.	lb.	in.			in. <sup>2</sup>	in. <sup>4</sup>	in. <sup>3</sup>	in.	in. <sup>3</sup>	in. <sup>4</sup>	in. <sup>3</sup>	ft. <sup>2</sup>
1-1/2	1-1/2	0.134	2.33	0.125	9.04	9.04	0.65	0.20	0.26	0.55	0.31	0.33	0.46	0.46
1-1/2	1-1/2	1/8	2.20	0.116	9.90	9.90	0.61	0.19	0.25	0.56	0.30	0.32	0.44	0.47
1-1/2	1-1/2	0.100	1.82	0.093	13.1	13.1	0.50	0.16	0.22	0.57	0.26	0.27	0.37	0.47
1-1/4	1-1/4	0.134	1.88	0.125	7.03	7.03	0.52	0.11	0.17	0.45	0.20	0.18	0.31	0.38
1-1/4	1-1/4	1/8	1.78	0.116	7.75	7.75	0.49	0.10	0.16	0.45	0.20	0.17	0.29	0.38
1-1/4	1-1/4	0.100	1.48	0.093	10.4	10.4	0.41	0.09	0.14	0.47	0.17	0.15	0.25	0.39
1	1	0.134	1.42	0.125	5.02	5.02	0.40	0.05	0.10	0.35	0.11	0.08	0.18	0.30
1	1	1/8	1.35	0.116	5.60	5.60	0.38	0.05	0.09	0.35	0.11	0.08	0.18	0.30
1	1	0.100	1.14	0.093	7.75	7.75	0.32	0.04	0.08	0.35	0.10	0.07	0.15	0.31