

ASTM A1085 Specification for HSS



HSS

PIPING SYSTEM PTE LTD

Table of Contents

Dimensions and Section Properties of Round HSS 4

Dimensions and Section Properties of Square HSS 11

Dimensions and Section Properties of Retangular HSS 15

Nomenclature

B	Overall width of rectangular HSS member (in.)
b	Nominal width minus 3 times the wall thickness, t (in.)
C	Torsional shear constant of cross-section (in. ³)
D	Outside diameter of round HSS (in.)
H	Overall height of rectangular HSS member (in.)
h	Nominal height minus 3 times the wall thickness, t (in.)
I	Moment of inertia of cross-section (in. ⁴)
ID	Inside diameter of round HSS (in.)
J	Torsional stiffness constant of cross-section (in. ⁴)
r	Radius of gyration (in.)
S	Elastic section modulus (in. ³)
t	Nominal and design wall thickness (in.)
Z	Plastic section modulus (in. ³)



ASTM A1085: Specification for Hollow Structural Sections (HSS)

This newer specification provides for enhanced performance to make designing with HSS easier and more efficient for structural engineers.

Some of the benefits of the new specification include:

Tighter material tolerances and a single minimum yield stress of 50 ksi

- More stringent wall tolerances and the addition of a mass tolerance mean the full nominal wall thickness can be used for design of HSS. This means no longer needing to reduce the nominal wall thickness by 0.93 as prescribed in the AISC Specification for both member selection and connection design.
- More area available for design and a higher minimum yield means that HSS are more economical and more efficient.

Maximum specified yield stress of 70 ksi

- The maximum yield will result in a lower expected yield strength ($R_y F_y$) and reduce capacity design requirements and column required strengths in seismic designs.
- R_y takes into account the variability of a material. A1085 reduces variability, lowers member strength and connection requirements, and, therefore, will improve an engineer's ability to specify in HSS in seismic applications.
- This is the only specification used in North America or Europe that limits the maximum yield stress in HSS.

	ASTM A500-10 (Grade B)		ASTM A1085	
Scope	Cold-formed welded & seamless		Cold-formed welded	
Max Perimeter	88"		88"	
Thickness Range	t<0.875"		0.148"<t<0.875"	
Yield Stress	Round Sq/Rect	42 ksi min 46 ksi min	All Shapes All Shapes	50 ksi min 70 ksi max
Tensile Stress	Round Sq/Rect	58 ksi min 58 ksi min	All Shapes	65 ksi min
Wall Thickness	-10%		-5%	
Mass Tolerance	N/A		-3.5%	
Corner Radii (Rectangular and Square HSS)	r<3t		t<0.400" t>0.400"	1.6t to 3.0t 1.8t to 3.0t
CVN	N/A		25ft-lbs@40° F	
Supplemental Requirements	N/A		Optional heat-treating Optional varying CVN	

Standard requirement for Charpy V-notch toughness

- A1085 will require all HSS to meet a minimum CVN value of 25 ft-lb @ 40°F, which corresponds to AASHTO Zone 2.
- Having the minimum CVN required makes HSS more suitable for use in dynamically loaded structures.

Corner radius

- A range has now been specified with a lower and upper bound.

A1085 Round HSS Dimensions and Properties

Shape	t _{nom}	Design Wall Thickness, t	D	ID	Nominal Wt	Area, A	D/t	I	S	r	Z	Torsion	
												J	C
	in	in	in	in	lb/ft	in ²	in ⁴	in ³	in	in ³	in ⁴	in ³	
HSS 20 x 0.625	0.625	0.625	20	18.75	129.45	38.0	32.0	1790	179	6.85	235	3570	357
x 0.500	0.5	0.500	20	19	104.23	30.6	40.0	1460	146	6.90	190	2910	291
x 0.375	0.375	0.375	20	19.25	78.67	23.1	53.3	1110	111	6.94	144	2230	223
x 0.250	0.25	0.250	20	19.5	52.78	15.5	80.0	756	75.6	6.98	97.5	1510	151
HSS 18 x 0.625	0.625	0.625	18	16.75	116.09	34.1	28.8	1290	143	6.15	189	2580	286
x 0.500	0.5	0.500	18	17	93.54	27.5	36.0	1050	117	6.19	153	2110	234
x 0.375	0.375	0.375	18	17.25	70.66	20.8	48.0	807	89.6	6.23	117	1610	179
x 0.250	0.25	0.250	18	17.5	47.44	13.9	72.0	549	61.0	6.28	78.8	1100	122
HSS 16 x 0.625	0.625	0.625	16	14.75	102.73	30.2	25.6	894	112	5.44	148	1790	223
x 0.500	0.5	0.500	16	15	82.85	24.3	32.0	732	91.5	5.48	120	1460	183
x 0.438	0.438	0.438	16	15.124	72.87	21.4	36.5	649	81.1	5.50	106	1300	162
x 0.375	0.375	0.375	16	15.25	62.64	18.4	42.7	562	70.3	5.53	91.6	1120	140
x 0.312	0.312	0.312	16	15.376	52.32	15.4	51.3	473	59.2	5.55	76.8	946	118
x 0.250	0.25	0.250	16	15.5	42.09	12.4	64.0	384	48.0	5.57	62.0	767	95.9
HSS 14 x 0.625	0.625	0.625	14	12.75	89.36	26.3	22.4	589	84.1	4.73	112	1180	168
x 0.593	0.593	0.593	14	12.814	84.99	25.0	23.6	562	80.3	4.74	107	1120	160
x 0.500	0.5	0.500	14	13	72.16	21.2	28.0	484	69.1	4.78	91.2	968	138
x 0.375	0.375	0.375	14	13.25	54.62	16.1	37.3	373	53.3	4.82	69.6	746	106
x 0.312	0.312	0.312	14	13.376	45.65	13.4	44.9	314	44.9	4.84	58.5	629	89.7
x 0.250	0.25	0.250	14	13.5	36.75	10.8	56.0	255	36.5	4.86	47.3	511	72.9
HSS 13.375 x 0.625	0.625	0.625	13.375	12.125	85.19	25.0	21.4	510	76.3	4.51	102	1020	152
x 0.500	0.5	0.500	13.375	12.375	68.82	20.2	26.8	420	62.8	4.56	82.9	839	125
x 0.375	0.375	0.375	13.375	12.625	52.11	15.3	35.7	324	48.4	4.60	63.4	648	96.7
x 0.250	0.25	0.250	13.375	12.875	35.08	10.3	53.5	222	33.2	4.64	43.1	444	66.4
HSS 12.75 x 0.687	0.687	0.687	12.75	11.376	88.59	26.0	18.6	475	74.5	4.27	100	950	148
x 0.625	0.625	0.625	12.75	11.5	81.01	23.8	20.4	439	68.8	4.29	92.0	877	137
x 0.562	0.562	0.562	12.75	11.626	73.22	21.5	22.7	400	62.8	4.31	83.5	801	125
x 0.500	0.5	0.500	12.75	11.75	65.48	19.2	25.5	362	56.7	4.33	75.1	723	113
x 0.406	0.406	0.406	12.75	11.938	53.58	15.7	31.4	300	47.1	4.37	61.9	600	94.0
x 0.393	0.393	0.393	12.75	11.964	51.91	15.3	32.4	291	45.7	4.37	60.0	583	91.3

A1085 Round HSS Dimensions and Properties

Shape	t _{nom} in	Design Wall Thickness, t in	D in	ID in	Nominal Wt lb/ft	Area, A in ²	D/t	I in ⁴	S in ³	r in	Z in ³	Torsion	
												J in ⁴	C in ³
HSS 12.75 x 0.375	0.375	0.375	12.75	12	49.61	14.6	34.0	279	43.8	4.38	57.4	559	87.5
x 0.250	0.25	0.250	12.75	12.25	33.41	9.82	51.0	192	30.1	4.42	39.1	384	60.1
x 0.180	0.18	0.180	12.75	12.39	24.19	7.11	70.8	140	22.0	4.44	28.4	281	44.0
HSS 12 x 0.625	0.625	0.625	12	10.75	76.00	22.3	19.2	362	60.4	4.03	81.0	725	120
x 0.500	0.5	0.500	12	11	61.47	18.1	24.0	299	49.9	4.07	66.2	598	99.4
x 0.375	0.375	0.375	12	11.25	46.60	13.7	32.0	232	38.6	4.11	50.7	463	77.1
x 0.250	0.25	0.250	12	11.5	31.40	9.23	48.0	159	26.6	4.16	34.5	319	53.1
HSS 11.75 x 0.625	0.625	0.625	11.75	10.5	74.33	21.8	18.8	339	57.7	3.94	77.4	678	115
x 0.500	0.5	0.500	11.75	10.75	60.13	17.7	23.5	280	47.7	3.98	63.3	560	95.0
x 0.375	0.375	0.375	11.75	11	45.60	13.4	31.3	217	36.9	4.02	48.5	434	73.7
x 0.337	0.337	0.337	11.75	11.076	41.12	12.1	34.9	197	33.5	4.04	43.9	394	66.9
x 0.250	0.25	0.250	11.75	11.25	30.73	9.03	47.0	149	25.4	4.07	33.1	299	50.8
HSS 10.75 x 0.625	0.625	0.625	10.75	9.5	67.65	19.9	17.2	256	47.6	3.59	64.2	511	94.5
x 0.593	0.593	0.593	10.75	9.564	64.39	18.9	18.1	245	45.6	3.60	61.2	490	90.6
x 0.500	0.5	0.500	10.75	9.75	54.79	16.1	21.5	212	39.4	3.63	52.6	424	78.5
x 0.375	0.375	0.375	10.75	10	41.59	12.2	28.7	165	30.6	3.67	40.4	329	61.1
x 0.365	0.365	0.365	10.75	10.02	40.52	11.9	29.5	161	29.9	3.67	39.4	321	59.7
x 0.313	0.313	0.313	10.75	10.124	34.92	10.3	34.3	140	26.0	3.69	34.1	280	52.0
x 0.250	0.25	0.250	10.75	10.25	28.06	8.25	43.0	114	21.2	3.71	27.6	227	42.3
x 0.188	0.188	0.188	10.75	10.374	21.23	6.24	57.2	87.0	16.2	3.73	21.0	174	32.4
x 0.165	0.165	0.165	10.75	10.42	18.67	5.49	65.2	76.9	14.3	3.74	18.5	154	28.6
HSS 10 x 0.625	0.625	0.625	10	8.75	62.64	18.4	16.0	203	40.6	3.32	55.0	406	80.6
x 0.500	0.5	0.500	10	9	50.78	14.9	20.0	169	33.8	3.36	45.2	338	67.2
x 0.375	0.375	0.375	10	9.25	38.58	11.3	26.7	132	26.3	3.41	34.8	263	52.5
x 0.312	0.312	0.312	10	9.376	32.31	9.50	32.1	112	22.3	3.43	29.3	223	44.5
x 0.250	0.25	0.250	10	9.5	26.06	7.66	40.0	91.1	18.2	3.45	23.8	182	36.4
x 0.188	0.188	0.188	10	9.624	19.72	5.80	53.2	69.8	14.0	3.47	18.1	140	27.9
HSS 9.625 x 0.625	0.625	0.625	9.625	8.375	60.13	17.7	15.4	180	37.4	3.19	50.7	360	74.1
x 0.500	0.5	0.500	9.625	8.625	48.77	14.3	19.3	150	31.1	3.23	41.7	299	61.9
x 0.375	0.375	0.375	9.625	8.875	37.08	10.9	25.7	117	24.3	3.27	32.1	233	48.4

A1085 Round HSS Dimensions and Properties

Shape	t _{nom} in	Design Wall Thickness, t in	D in	ID in	Nominal Wt lb/ft	Area, A in ²	D/t	I in ⁴	S in ³	r in	Z in ³	Torsion	
												J in ⁴	C in ³
HSS 9.625 x 0.342	0.342	0.342	9.625	8.941	33.94	9.97	28.1	108	22.4	3.28	29.5	215	44.6
x 0.312	0.312	0.312	9.625	9.001	31.06	9.13	30.8	99.1	20.6	3.29	27.1	198	41.1
x 0.250	0.25	0.250	9.625	9.125	25.06	7.36	38.5	81.0	16.8	3.32	22.0	162	33.6
x 0.188	0.188	0.188	9.625	9.249	18.97	5.57	51.2	62.1	12.9	3.34	16.7	124	25.8
HSS 8.625 x 0.625	0.625	0.625	8.625	7.375	53.45	15.7	13.8	126	29.3	2.84	40.1	253	58.0
x 0.594	0.594	0.594	8.625	7.437	51.00	15.0	14.5	121	28.2	2.85	38.4	243	55.8
x 0.500	0.5	0.500	8.625	7.625	43.43	12.8	17.3	106	24.5	2.88	33.0	211	48.7
x 0.375	0.375	0.375	8.625	7.875	33.07	9.72	23.0	82.9	19.2	2.92	25.5	166	38.3
x 0.322	0.322	0.322	8.625	7.981	28.58	8.40	26.8	72.5	16.8	2.94	22.2	145	33.5
x 0.250	0.25	0.250	8.625	8.125	22.38	6.58	34.5	57.7	13.4	2.96	17.5	115	26.7
x 0.188	0.188	0.188	8.625	8.249	16.96	4.98	45.9	44.4	10.3	2.98	13.4	88.7	20.6
x 0.148	0.148	0.148	8.625	8.329	13.41	3.94	58.3	35.4	8.21	3.00	10.6	70.8	16.4
x 0.125	0.125	0.125	8.625	8.375	11.36	3.34	69.0	30.2	6.99	3.01	9.03	60.3	14.0
HSS 7.625 x 0.375	0.375	0.375	7.625	6.875	29.06	8.54	20.3	56.3	14.8	2.57	19.7	113	29.4
x 0.328	0.328	0.328	7.625	6.969	25.59	7.52	23.2	50.1	13.2	2.58	17.5	100	26.2
HSS 7.5 x 0.500	0.5	0.500	7.5	6.5	37.42	11.0	15.0	67.7	18.1	2.48	24.5	135	35.8
x 0.375	0.375	0.375	7.5	6.75	28.56	8.39	20.0	53.4	14.2	2.52	19.1	107	28.4
x 0.312	0.312	0.312	7.5	6.876	23.97	7.05	24.0	45.6	12.2	2.54	16.1	91.2	24.2
x 0.250	0.25	0.250	7.5	7	19.38	5.69	30.0	37.5	9.99	2.56	13.1	74.9	19.9
x 0.188	0.188	0.188	7.5	7.124	14.70	4.32	39.9	28.9	7.70	2.59	10.1	57.8	15.4
HSS 7 x 0.500	0.5	0.500	7	6	34.74	10.2	14.0	54.2	15.5	2.30	21.2	108	30.7
x 0.375	0.375	0.375	7	6.25	26.56	7.80	18.7	43.0	12.3	2.35	16.5	85.9	24.4
x 0.312	0.312	0.312	7	6.376	22.31	6.56	22.4	36.7	10.5	2.37	14.0	73.5	20.9
x 0.250	0.25	0.250	7	6.5	18.04	5.30	28.0	30.2	8.64	2.39	11.4	60.5	17.2
x 0.188	0.188	0.188	7	6.624	13.69	4.02	37.2	23.4	6.67	2.41	8.73	46.7	13.3
HSS 6.875 x 0.500	0.5	0.500	6.875	5.875	34.07	10.00	13.8	51.2	14.9	2.26	20.4	102	29.5
x 0.375	0.375	0.375	6.875	6.125	26.06	7.66	18.3	40.6	11.8	2.30	15.9	81.2	23.5
x 0.312	0.312	0.312	6.875	6.251	21.89	6.43	22.0	34.7	10.1	2.32	13.4	69.4	20.1
x 0.250	0.25	0.250	6.875	6.375	17.71	5.20	27.5	28.6	8.32	2.34	11.0	57.2	16.6
x 0.188	0.188	0.188	6.875	6.499	13.44	3.95	36.6	22.1	6.43	2.37	8.41	44.2	12.8

A1085 Round HSS Dimensions and Properties

Shape	t _{nom}	Design Wall Thickness, t	D	ID	Nominal Wt	Area, A	D/t	I	S	r	Z	Torsion	
												J	C
	in	in	in	in	lb/ft	in ²	in ⁴	in ³	in	in ³	in ⁴	in ³	
HSS 6.625 x 0.562	0.562	0.562	6.625	5.501	36.43	10.7	11.8	49.6	15.0	2.15	20.7	99.2	29.5
x 0.500	0.5	0.500	6.625	5.625	32.74	9.62	13.3	45.4	13.7	2.17	18.8	90.8	27.1
x 0.437	0.437	0.437	6.625	5.751	28.91	8.50	15.2	40.9	12.3	2.19	16.8	81.7	24.5
x 0.432	0.432	0.432	6.625	5.761	28.60	8.40	15.3	40.5	12.2	2.19	16.6	81.0	24.2
x 0.375	0.375	0.375	6.625	5.875	25.06	7.36	17.7	36.1	10.9	2.21	14.7	72.2	21.6
x 0.312	0.312	0.312	6.625	6.001	21.06	6.19	21.2	30.9	9.33	2.23	12.4	61.8	18.6
x 0.280	0.28	0.280	6.625	6.065	18.99	5.58	23.7	28.1	8.50	2.25	11.3	56.3	16.9
x 0.250	0.25	0.250	6.625	6.125	17.04	5.01	26.5	25.5	7.69	2.26	10.2	50.9	15.3
x 0.188	0.188	0.188	6.625	6.249	12.94	3.80	35.2	19.7	5.95	2.28	7.79	39.4	11.9
x 0.134	0.134	0.134	6.625	6.357	9.30	2.73	49.4	14.4	4.35	2.30	5.65	28.8	8.69
x 0.125	0.125	0.125	6.625	6.375	8.69	2.55	53.0	13.5	4.07	2.30	5.28	27.0	8.14
HSS 6 x 0.500	0.5	0.500	6	5	29.40	8.64	12.0	32.9	11.0	1.95	15.2	65.9	21.6
x 0.375	0.375	0.375	6	5.25	22.55	6.63	16.0	26.3	8.78	1.99	11.9	52.7	17.4
x 0.312	0.312	0.312	6	5.376	18.97	5.58	19.2	22.6	7.54	2.01	10.1	45.2	15.0
x 0.280	0.28	0.280	6	5.44	17.12	5.03	21.4	20.6	6.88	2.02	9.17	41.3	13.7
x 0.250	0.25	0.250	6	5.5	15.37	4.52	24.0	18.7	6.23	2.03	8.27	37.4	12.4
x 0.188	0.188	0.188	6	5.624	11.68	3.43	31.9	14.5	4.84	2.06	6.35	29.0	9.66
x 0.125	0.125	0.125	6	5.75	7.85	2.31	48.0	9.96	3.32	2.08	4.32	19.9	6.63
HSS 5.563 x 0.500	0.5	0.500	5.563	4.563	27.06	7.95	11.1	25.7	9.25	1.80	12.9	51.5	18.2
x 0.375	0.375	0.375	5.563	4.813	20.80	6.11	14.8	20.7	7.43	1.84	10.1	41.3	14.7
x 0.258	0.258	0.258	5.563	5.047	14.63	4.30	21.6	15.2	5.45	1.88	7.27	30.3	10.9
x 0.250	0.25	0.250	5.563	5.063	14.20	4.17	22.3	14.8	5.31	1.88	7.06	29.5	10.6
x 0.188	0.188	0.188	5.563	5.187	10.80	3.17	29.6	11.5	4.13	1.90	5.43	23.0	8.24
x 0.134	0.134	0.134	5.563	5.295	7.78	2.29	41.5	8.43	3.03	1.92	3.95	16.9	6.05
HSS 5.5 x 0.500	0.5	0.500	5.5	4.5	26.73	7.85	11.0	24.8	9.01	1.78	12.5	49.6	17.7
x 0.375	0.375	0.375	5.5	4.75	20.55	6.04	14.7	19.9	7.25	1.82	9.87	39.9	14.4
x 0.258	0.258	0.258	5.5	4.984	14.46	4.25	21.3	14.6	5.32	1.86	7.10	29.3	10.6
HSS 5 x 0.500	0.5	0.500	5	4	24.05	7.07	10.0	18.1	7.25	1.60	10.2	36.2	14.2
x 0.375	0.375	0.375	5	4.25	18.54	5.45	13.3	14.7	5.87	1.64	8.04	29.3	11.6
x 0.355	0.355	0.355	5	4.29	17.63	5.18	14.1	14.1	5.62	1.65	7.67	28.1	11.1

A1085 Round HSS Dimensions and Properties

Shape	t _{nom}	Design Wall Thickness, t	D	ID	Nominal Wt	Area, A	D/t	I	S	r	Z	Torsion	
												J	C
	in	in	in	in	lb/ft	in ²	in ⁴	in ³	in	in ³	in ⁴	in ³	
HSS 5 x 0.313	0.313	0.313	5	4.374	15.68	4.61	16.0	12.7	5.08	1.66	6.89	25.4	10.1
x 0.312	0.312	0.312	5	4.376	15.64	4.60	16.0	12.7	5.07	1.66	6.87	25.4	10.1
x 0.258	0.258	0.258	5	4.484	13.08	3.84	19.4	10.8	4.33	1.68	5.81	21.7	8.62
x 0.250	0.25	0.250	5	4.5	12.69	3.73	20.0	10.6	4.22	1.68	5.65	21.1	8.40
x 0.247	0.247	0.247	5	4.506	12.55	3.69	20.2	10.4	4.18	1.68	5.59	20.9	8.32
x 0.188	0.188	0.188	5	4.624	9.67	2.84	26.6	8.24	3.30	1.70	4.36	16.5	6.57
x 0.134	0.134	0.134	5	4.732	6.97	2.05	37.3	6.07	2.43	1.72	3.17	12.1	4.85
x 0.125	0.125	0.125	5	4.75	6.51	1.91	40.0	5.69	2.28	1.72	2.97	11.4	4.55
x 0.120	0.12	0.120	5	4.76	6.26	1.84	41.7	5.48	2.19	1.73	2.86	11.0	4.38
HSS 4.5 x 0.375	0.375	0.375	4.5	3.75	16.54	4.86	12.0	10.4	4.63	1.46	6.40	20.8	9.13
x 0.337	0.337	0.337	4.5	3.826	15.00	4.41	13.4	9.61	4.27	1.48	5.85	19.2	8.45
x 0.313	0.313	0.313	4.5	3.874	14.01	4.12	14.4	9.07	4.03	1.48	5.50	18.1	7.99
x 0.250	0.25	0.250	4.5	4	11.36	3.34	18.0	7.56	3.36	1.51	4.52	15.1	6.68
x 0.237	0.237	0.237	4.5	4.026	10.80	3.17	19.0	7.23	3.21	1.51	4.31	14.5	6.39
x 0.188	0.188	0.188	4.5	4.124	8.67	2.55	23.9	5.93	2.64	1.53	3.50	11.9	5.25
x 0.134	0.134	0.134	4.5	4.232	6.25	1.84	33.6	4.38	1.95	1.54	2.56	8.77	3.89
x 0.125	0.125	0.125	4.5	4.25	5.85	1.72	36.0	4.11	1.83	1.55	2.39	8.23	3.65
x 0.120	0.12	0.120	4.5	4.26	5.62	1.65	37.5	3.96	1.76	1.55	2.30	7.93	3.52
HSS 4 x 0.318	0.318	0.318	4	3.364	12.52	3.68	12.6	6.28	3.14	1.31	4.32	12.6	6.20
x 0.313	0.313	0.313	4	3.374	12.34	3.63	12.8	6.21	3.10	1.31	4.27	12.4	6.13
x 0.250	0.25	0.250	4	3.5	10.02	2.95	16.0	5.20	2.60	1.33	3.52	10.4	5.16
x 0.237	0.237	0.237	4	3.526	9.53	2.80	16.9	4.98	2.49	1.33	3.36	9.96	4.94
x 0.226	0.226	0.226	4	3.548	9.12	2.68	17.7	4.79	2.39	1.34	3.22	9.58	4.76
x 0.220	0.22	0.220	4	3.56	8.89	2.61	18.2	4.68	2.34	1.34	3.15	9.36	4.65
x 0.188	0.188	0.188	4	3.624	7.66	2.25	21.3	4.10	2.05	1.35	2.73	8.20	4.08
x 0.125	0.125	0.125	4	3.75	5.18	1.52	32.0	2.86	1.43	1.37	1.88	5.72	2.85
x 0.120	0.12	0.120	4	3.76	4.98	1.46	33.3	2.76	1.38	1.37	1.81	5.51	2.75
HSS 3.5 x 0.313	0.313	0.313	3.5	2.874	10.66	3.13	11.2	4.02	2.30	1.13	3.19	8.03	4.52
x 0.300	0.3	0.300	3.5	2.9	10.26	3.02	11.7	3.89	2.23	1.14	3.08	7.79	4.38
x 0.250	0.25	0.250	3.5	3	8.69	2.55	14.0	3.39	1.94	1.15	2.65	6.78	3.83

A1085 Round HSS Dimensions and Properties

Shape	t _{nom} in	Design Wall Thickness, t in	D in	ID in	Nominal Wt lb/ft	Area, A in ²	D/t	I in ⁴	S in ³	r in	Z in ³	Torsion	
												J in ⁴	C in ³
HSS 3.5 x 0.216	0.216	0.216	3.5	3.068	7.58	2.23	16.2	3.02	1.72	1.16	2.33	6.03	3.42
x 0.203	0.203	0.203	3.5	3.094	7.15	2.10	17.2	2.87	1.64	1.17	2.21	5.74	3.26
x 0.188	0.188	0.188	3.5	3.124	6.66	1.96	18.6	2.69	1.54	1.17	2.06	5.38	3.06
x 0.125	0.125	0.125	3.5	3.25	4.51	1.33	28.0	1.89	1.08	1.19	1.42	3.78	2.15
x 0.120	0.12	0.120	3.5	3.26	4.34	1.27	29.2	1.82	1.04	1.20	1.37	3.64	2.08
HSS 3 x 0.250	0.25	0.250	3	2.5	7.35	2.16	12.0	2.06	1.37	0.976	1.90	4.12	2.71
x 0.216	0.216	0.216	3	2.568	6.43	1.89	13.9	1.84	1.23	0.987	1.68	3.68	2.43
x 0.203	0.203	0.203	3	2.594	6.07	1.78	14.8	1.75	1.17	0.991	1.59	3.51	2.32
x 0.188	0.188	0.188	3	2.624	5.65	1.66	16.0	1.65	1.10	0.996	1.49	3.30	2.18
x 0.152	0.152	0.152	3	2.696	4.63	1.36	19.7	1.38	0.922	1.01	1.23	2.77	1.83
x 0.134	0.134	0.134	3	2.732	4.11	1.21	22.4	1.24	0.828	1.01	1.10	2.48	1.65
x 0.125	0.125	0.125	3	2.75	3.84	1.13	24.0	1.17	0.779	1.02	1.03	2.34	1.55
x 0.120	0.12	0.120	3	2.76	3.69	1.09	25.0	1.13	0.752	1.02	0.996	2.26	1.50
HSS 2.875 x 0.276	0.276	0.276	2.875	2.323	7.67	2.25	10.4	1.92	1.34	0.924	1.87	3.85	2.63
x 0.250	0.25	0.250	2.875	2.375	7.02	2.06	11.5	1.79	1.25	0.932	1.73	3.58	2.45
x 0.203	0.203	0.203	2.875	2.469	5.80	1.70	14.2	1.53	1.06	0.947	1.45	3.06	2.11
x 0.188	0.188	0.188	2.875	2.499	5.40	1.59	15.3	1.44	1.00	0.952	1.36	2.88	1.99
x 0.125	0.125	0.125	2.875	2.625	3.67	1.08	23.0	1.02	0.712	0.973	0.946	2.05	1.42
x 0.120	0.12	0.120	2.875	2.635	3.53	1.04	24.0	0.987	0.687	0.975	0.911	1.97	1.37
HSS 2.5 x 0.250	0.25	0.250	2.5	2	6.01	1.77	10.0	1.13	0.906	0.800	1.27	2.26	1.77
x 0.238	0.238	0.238	2.5	2.024	5.76	1.69	10.5	1.09	0.875	0.804	1.22	2.19	1.72
x 0.188	0.188	0.188	2.5	2.124	4.65	1.37	13.3	0.918	0.735	0.820	1.01	1.84	1.45
x 0.179	0.179	0.179	2.5	2.142	4.44	1.31	14.0	0.884	0.707	0.823	0.966	1.77	1.40
x 0.125	0.125	0.125	2.5	2.25	3.17	0.933	20.0	0.659	0.528	0.841	0.706	1.32	1.05
x 0.120	0.12	0.120	2.5	2.26	3.05	0.897	20.8	0.637	0.510	0.843	0.680	1.27	1.01
HSS 2.375 x 0.250	0.25	0.250	2.375	1.875	5.68	1.67	9.50	0.955	0.804	0.756	1.13	1.91	1.57
x 0.218	0.218	0.218	2.375	1.939	5.03	1.48	10.9	0.868	0.731	0.766	1.02	1.74	1.44
x 0.188	0.188	0.188	2.375	1.999	4.40	1.29	12.6	0.778	0.655	0.776	0.901	1.56	1.29
x 0.154	0.154	0.154	2.375	2.067	3.66	1.07	15.4	0.666	0.561	0.787	0.761	1.33	1.11
x 0.134	0.134	0.134	2.375	2.107	3.21	0.943	17.7	0.594	0.501	0.794	0.674	1.19	0.995

A1085 Round HSS Dimensions and Properties

Shape	t _{nom} in	Design Wall Thickness, t in	D in	ID in	Nominal Wt lb/ft	Area, A in ²	D/t	I in ⁴	S in ³	r in	Z in ³	Torsion	
												J in ⁴	C in ³
HSS 2.375 x 0.125	0.125	0.125	2.375	2.125	3.01	0.884	19.0	0.561	0.472	0.797	0.633	1.12	0.940
x 0.109	0.109	0.109	2.375	2.157	2.64	0.776	21.8	0.499	0.420	0.802	0.560	0.998	0.837
HSS 2.25 x 0.250	0.25	0.250	2.25	1.75	5.35	1.57	9.00	0.798	0.709	0.713	1.01	1.60	1.38
x 0.188	0.188	0.188	2.25	1.874	4.14	1.22	12.0	0.653	0.580	0.732	0.802	1.31	1.14
x 0.125	0.125	0.125	2.25	2	2.84	0.834	18.0	0.473	0.420	0.753	0.565	0.945	0.835
HSS 1.9 x 0.200	0.2	0.200	1.9	1.5	3.63	1.07	9.50	0.391	0.412	0.605	0.581	0.782	0.804
x 0.188	0.188	0.188	1.9	1.524	3.44	1.01	10.1	0.375	0.395	0.609	0.553	0.750	0.773
x 0.180	0.18	0.180	1.9	1.54	3.31	0.973	10.6	0.364	0.383	0.611	0.534	0.727	0.751
x 0.145	0.145	0.145	1.9	1.61	2.72	0.799	13.1	0.310	0.326	0.623	0.448	0.620	0.645
x 0.125	0.125	0.125	1.9	1.65	2.37	0.697	15.2	0.276	0.290	0.629	0.394	0.552	0.576
x 0.120	0.12	0.120	1.9	1.66	2.28	0.671	15.8	0.267	0.281	0.631	0.381	0.534	0.558
x 0.109	0.109	0.109	1.9	1.682	2.09	0.613	17.4	0.247	0.260	0.634	0.350	0.494	0.516
x 0.100	0.1	0.100	1.9	1.7	1.92	0.565	19.0	0.230	0.242	0.637	0.324	0.459	0.481
HSS 1.66 x 0.191	0.191	0.191	1.66	1.278	3.00	0.881	8.69	0.242	0.291	0.524	0.414	0.484	0.566
x 0.140	0.14	0.140	1.66	1.38	2.27	0.669	11.9	0.195	0.235	0.540	0.324	0.389	0.462
x 0.134	0.134	0.134	1.66	1.392	2.19	0.642	12.4	0.188	0.227	0.542	0.313	0.377	0.448
x 0.125	0.125	0.125	1.66	1.41	2.05	0.603	13.3	0.179	0.215	0.545	0.295	0.357	0.426
x 0.109	0.109	0.109	1.66	1.442	1.81	0.531	15.2	0.160	0.193	0.550	0.263	0.321	0.383
x 0.083	0.083	0.083	1.66	1.494	1.40	0.411	20.0	0.128	0.154	0.558	0.207	0.256	0.307
HSS 1.315 x 0.133	0.133	0.133	1.315	1.049	1.68	0.494	9.89	0.0873	0.133	0.421	0.187	0.175	0.260
x 0.125	0.125	0.125	1.315	1.065	1.59	0.467	10.5	0.0836	0.127	0.423	0.178	0.167	0.250
x 0.109	0.109	0.109	1.315	1.097	1.41	0.413	12.1	0.0757	0.115	0.428	0.159	0.151	0.227
x 0.083	0.083	0.083	1.315	1.149	1.09	0.321	15.8	0.0612	0.0931	0.437	0.126	0.122	0.185
HSS 1.05 x 0.113	0.113	0.113	1.05	0.824	1.13	0.333	9.29	0.0370	0.0705	0.334	0.0997	0.0741	0.138
HSS 0.84 x 0.109	0.109	0.109	0.84	0.622	0.85	0.250	7.71	0.0171	0.0407	0.261	0.0587	0.0342	0.0784

A1085 Square HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	I	S	r	Z	Torsion		Surface Area	Workable Flat
	H	B	t _{nom}										J	C		
	in	in	in										in ⁴	in ³		
HSS 22 x 22 x 7/8	22	22	0.875	0.875	244.88	72.0	22.1	22.1	5280	480	8.56	565	8420	778	7.08	18 1/16
x 3/4	22	22	0.75	0.750	212.00	62.3	26.3	26.3	4630	421	8.62	492	7330	676	7.12	18 5/8
HSS 20 x 20 x 7/8	20	20	0.875	0.875	221.06	65.0	19.9	19.9	3900	390	7.75	461	6260	638	6.42	16 1/16
x 3/4	20	20	0.75	0.750	191.58	56.3	23.7	23.7	3430	343	7.81	403	5460	554	6.45	16 5/8
x 5/8	20	20	0.625	0.625	161.40	47.4	29.0	29.0	2940	294	7.88	342	4620	468	6.49	17 3/16
x 1/2	20	20	0.5	0.500	130.52	38.4	37.0	37.0	2410	241	7.92	279	3760	380	6.52	17 3/4
x 3/8	20	20	0.375	0.375	98.94	29.1	50.3	50.3	1850	185	7.97	213	2870	289	6.56	18 5/16
HSS 18 x 18 x 7/8	18	18	0.875	0.875	197.24	58.0	17.6	17.6	2780	309	6.92	368	4500	511	5.75	14 1/16
x 3/4	18	18	0.75	0.750	171.16	50.3	21.0	21.0	2460	273	6.99	322	3930	445	5.79	14 5/8
x 5/8	18	18	0.625	0.625	144.39	42.4	25.8	25.8	2110	234	7.05	274	3340	376	5.82	15 3/16
x 1/2	18	18	0.5	0.500	116.91	34.4	33.0	33.0	1740	193	7.11	224	2720	306	5.86	15 3/4
x 3/8	18	18	0.375	0.375	88.73	26.1	45.0	45.0	1340	149	7.17	172	2080	233	5.89	16 5/16
HSS 16 x 16 x 7/8	16	16	0.875	0.875	173.43	51.0	15.3	15.3	1900	238	6.10	285	3100	398	5.08	12 1/16
x 3/4	16	16	0.75	0.750	150.75	44.3	18.3	18.3	1690	211	6.18	250	2720	347	5.12	12 5/8
x 5/8	16	16	0.625	0.625	127.37	37.4	22.6	22.6	1450	181	6.23	214	2320	295	5.15	13 3/16
x 1/2	16	16	0.5	0.500	103.30	30.4	29.0	29.0	1200	150	6.28	175	1890	240	5.19	13 3/4
x 3/8	16	16	0.375	0.375	78.52	23.1	39.7	39.7	931	116	6.35	134	1450	183	5.23	14 5/16
x 5/16	16	16	0.3125	0.313	65.87	19.4	48.1	48.1	790	98.8	6.38	114	1220	154	5.24	14 5/8
x 1/4	16	16	0.25	0.250	53.05	15.6	61.0	61.0	641	80.1	6.41	91.8	986	124	5.26	14 7/8
HSS 14 x 14 x 7/8	14	14	0.875	0.875	149.61	44.0	13.0	13.0	1230	176	5.29	213	2030	299	4.42	10 1/16
x 3/4	14	14	0.75	0.750	130.33	38.3	15.7	15.7	1100	157	5.36	188	1790	262	4.45	10 5/8
x 5/8	14	14	0.625	0.625	110.36	32.4	19.4	19.4	952	136	5.42	161	1530	223	4.49	11 3/16
x 1/2	14	14	0.5	0.500	89.68	26.4	25.0	25.0	791	113	5.47	132	1250	182	4.52	11 3/4
x 3/8	14	14	0.375	0.375	68.31	20.1	34.3	34.3	615	87.9	5.53	102	963	139	4.56	12 5/16
x 5/16	14	14	0.3125	0.313	57.36	16.9	41.7	41.7	523	74.7	5.56	86.2	813	117	4.58	12 5/8
x 1/4	14	14	0.25	0.250	46.24	13.6	53.0	53.0	426	60.9	5.60	69.8	657	94.5	4.60	12 7/8
HSS 12 x 12 x 3/4	12	12	0.75	0.750	109.91	32.3	13.0	13.0	666	111	4.54	134	1100	188	3.79	8 5/8
x 5/8	12	12	0.625	0.625	93.34	27.4	16.2	16.2	580	96.7	4.60	116	943	161	3.82	9 3/16
x 1/2	12	12	0.5	0.500	76.07	22.4	21.0	21.0	486	81.0	4.66	95.4	777	132	3.86	9 3/4
x 3/8	12	12	0.375	0.375	58.10	17.1	29.0	29.0	380	63.3	4.71	73.9	599	101	3.89	10 5/16

A1085 Square HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	I	S	r	Z	Torsion		Surface Area	Workable Flat
	H	B	t _{nom}										J	C		
	in	in	in										in ⁴	in ³		
HSS 12 x 12 x 5/16	12	12	0.3125	0.313	48.86	14.4	35.3	35.3	324	54.0	4.74	62.6	507	85.4	3.91	10 5/8
x 1/4	12	12	0.25	0.250	39.43	11.6	45.0	45.0	265	44.2	4.78	50.8	410	69.0	3.93	10 7/8
x 3/16	12	12	0.1875	0.188	29.84	8.79	60.8	60.8	203	33.8	4.81	38.8	313	52.4	3.95	11 3/16
HSS 10 x 10 x 3/4	10	10	0.75	0.750	89.50	26.3	10.3	10.3	364	72.8	3.72	89.4	610	127	3.12	6 5/8
x 5/8	10	10	0.625	0.625	76.33	22.4	13.0	13.0	321	64.2	3.79	77.6	529	109	3.15	7 3/16
x 1/2	10	10	0.5	0.500	62.46	18.4	17.0	17.0	271	54.2	3.84	64.6	439	89.8	3.19	7 3/4
x 3/8	10	10	0.375	0.375	47.90	14.1	23.7	23.7	214	42.8	3.90	50.4	341	69.3	3.23	8 5/16
x 5/16	10	10	0.3125	0.313	40.35	11.9	28.9	28.9	184	36.8	3.93	42.8	289	58.6	3.24	8 5/8
x 1/4	10	10	0.25	0.250	32.63	9.59	37.0	37.0	151	30.2	3.97	34.9	235	47.5	3.26	8 7/8
x 3/16	10	10	0.1875	0.188	24.73	7.29	50.2	50.2	116	23.2	3.99	26.7	180	36.2	3.28	9 3/16
HSS 9 x 9 x 5/8	9	9	0.625	0.625	67.82	19.9	11.4	11.4	227	50.4	3.38	61.5	377	86.7	2.82	6 3/16
x 1/2	9	9	0.5	0.500	55.66	16.4	15.0	15.0	193	42.9	3.43	51.4	315	71.8	2.86	6 3/4
x 3/8	9	9	0.375	0.375	42.79	12.6	21.0	21.0	154	34.2	3.50	40.3	246	55.6	2.89	7 5/16
x 5/16	9	9	0.3125	0.313	36.10	10.6	25.8	25.8	132	29.3	3.53	34.3	209	47.1	2.91	7 5/8
x 1/4	9	9	0.25	0.250	29.23	8.59	33.0	33.0	109	24.2	3.56	28.0	170	38.2	2.93	7 7/8
x 3/16	9	9	0.1875	0.188	22.18	6.54	44.9	44.9	84.0	18.7	3.58	21.5	130	29.2	2.95	8 3/16
HSS 8 x 8 x 5/8	8	8	0.625	0.625	59.32	17.4	9.80	9.80	153	38.3	2.97	47.2	258	67.0	2.49	5 3/16
x 1/2	8	8	0.5	0.500	48.85	14.4	13.0	13.0	131	32.8	3.02	39.7	217	55.8	2.52	5 3/4
x 3/8	8	8	0.375	0.375	37.69	11.1	18.3	18.3	106	26.5	3.09	31.3	170	43.4	2.56	6 5/16
x 5/16	8	8	0.3125	0.313	31.84	9.37	22.6	22.6	91.0	22.8	3.12	26.8	145	36.9	2.58	6 5/8
x 1/4	8	8	0.25	0.250	25.82	7.59	29.0	29.0	75.2	18.8	3.15	21.9	118	30.0	2.60	6 7/8
x 3/16	8	8	0.1875	0.188	19.63	5.78	39.6	39.6	58.4	14.6	3.18	16.9	90.8	22.9	2.61	7 3/16
HSS 7 x 7 x 5/8	7	7	0.625	0.625	50.81	14.9	8.20	8.20	97.6	27.9	2.56	34.8	166	49.9	2.15	4 3/16
x 1/2	7	7	0.5	0.500	42.05	12.4	11.0	11.0	84.7	24.2	2.61	29.6	141	41.8	2.19	4 3/4
x 3/8	7	7	0.375	0.375	32.58	9.58	15.7	15.7	68.7	19.6	2.68	23.5	112	32.7	2.23	5 5/16
x 5/16	7	7	0.3125	0.313	27.59	8.12	19.4	19.4	59.6	17.0	2.71	20.1	95.7	27.9	2.24	5 5/8
x 1/4	7	7	0.25	0.250	22.42	6.59	25.0	25.0	49.4	14.1	2.74	16.5	78.3	22.7	2.26	5 7/8
x 3/16	7	7	0.1875	0.188	17.08	5.03	34.2	34.2	38.6	11.0	2.77	12.8	60.3	17.4	2.28	6 3/16
HSS 6 x 6 x 5/8	6	6	0.625	0.625	42.30	12.4	6.60	6.60	57.4	19.1	2.15	24.3	100	35.2	1.82	3 3/16
x 1/2	6	6	0.5	0.500	35.24	10.4	9.00	9.00	50.5	16.8	2.20	20.9	85.6	29.8	1.86	3 3/4

A1085 Square HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	I	S	r	Z	Torsion		Surface Area	Workable Flat
	H	B	t _{nom}										J	C		
	in	in	in										in ⁴	in ³		
HSS 6 x 6 x 3/8	6	6	0.375	0.375	27.48	8.08	13.0	13.0	41.6	13.9	2.27	16.8	68.5	23.5	1.89	4 5/16
x 5/16	6	6	0.3125	0.313	23.34	6.87	16.2	16.2	36.3	12.1	2.30	14.5	59.0	20.1	1.91	4 5/8
x 1/4	6	6	0.25	0.250	19.02	5.59	21.0	21.0	30.3	10.1	2.33	11.9	48.5	16.5	1.93	4 7/8
x 3/16	6	6	0.1875	0.188	14.53	4.28	28.9	28.9	23.8	7.93	2.36	9.26	37.5	12.7	1.95	5 3/16
x 11GA	6	6	0.12	0.120	9.48	2.79	47.0	47.0	15.9	5.30	2.39	6.11	24.7	8.29	1.97	5 7/16
HSS 5 1/2 x 5 1/2 x 3/8	5.5	5.5	0.375	0.375	24.93	7.33	11.7	11.7	31.3	11.4	2.07	13.8	51.9	19.5	1.73	3 13/16
x 5/16	5.5	5.5	0.3125	0.313	21.21	6.24	14.6	14.6	27.4	10.0	2.10	12.0	44.8	16.7	1.74	4 1/8
x 1/4	5.5	5.5	0.25	0.250	17.32	5.09	19.0	19.0	23.0	8.36	2.13	9.9	37.0	13.7	1.76	4 3/8
x 3/16	5.5	5.5	0.1875	0.188	13.25	3.90	26.3	26.3	18.1	6.58	2.15	7.71	28.7	10.6	1.78	4 11/16
HSS 5 x 5 x 1/2	5	5	0.5	0.500	28.43	8.36	7.00	7.00	27.1	10.8	1.80	13.7	46.8	19.8	1.52	2 3/4
x 3/8	5	5	0.375	0.375	22.37	6.58	10.3	10.3	22.8	9.12	1.86	11.2	38.2	15.8	1.56	3 5/16
x 5/16	5	5	0.3125	0.313	19.08	5.62	13.0	13.0	20.1	8.04	1.89	9.7	33.1	13.6	1.58	3 5/8
x 1/4	5	5	0.25	0.250	15.62	4.59	17.0	17.0	16.9	6.76	1.92	8.07	27.4	11.2	1.60	3 7/8
x 3/16	5	5	0.1875	0.188	11.97	3.53	23.6	23.6	13.4	5.36	1.95	6.31	21.4	8.68	1.61	4 3/16
x 1/8	5	5	0.125	0.125	8.16	2.40	37.0	37.0	9.41	3.76	1.98	4.36	14.7	5.93	1.63	4 7/16
x 11GA	5	5	0.12	0.120	7.84	2.31	38.7	38.7	9.08	3.63	1.98	4.20	14.1	5.71	1.63	4 7/16
HSS 4-1/2 x 4-1/2 x 1/2	4.5	4.5	0.5	0.500	25.03	7.36	6.00	6.00	18.7	8.31	1.59	10.7	32.7	15.5	1.36	2 1/4
x 3/8	4.5	4.5	0.375	0.375	19.82	5.83	9.00	9.00	16.0	7.11	1.66	8.81	27.1	12.6	1.39	2 13/16
x 5/16	4.5	4.5	0.3125	0.313	16.96	4.99	11.4	11.4	14.2	6.31	1.69	7.69	23.6	10.9	1.41	3 1/8
x 1/4	4.5	4.5	0.25	0.250	13.91	4.09	15.0	15.0	12.1	5.38	1.72	6.43	19.7	8.97	1.43	3 3/8
x 3/16	4.5	4.5	0.1875	0.188	10.70	3.15	20.9	20.9	9.62	4.28	1.75	5.05	15.4	6.97	1.45	3 11/16
x 1/8	4.5	4.5	0.125	0.125	7.31	2.15	33.0	33.0	6.78	3.01	1.78	3.50	10.6	4.78	1.46	3 15/16
HSS 4 x 4 x 1/2	4	4	0.5	0.500	21.63	6.36	5.00	5.00	12.3	6.15	1.39	8.02	21.8	11.8	1.19	--
x 3/8	4	4	0.375	0.375	17.27	5.08	7.67	7.67	10.7	5.35	1.45	6.72	18.4	9.65	1.23	2 5/16
x 5/16	4	4	0.3125	0.313	14.83	4.36	9.78	9.78	9.59	4.80	1.48	5.91	16.1	8.39	1.24	2 5/8
x 1/4	4	4	0.25	0.250	12.21	3.59	13.0	13.0	8.22	4.11	1.51	4.97	13.5	6.97	1.26	2 7/8
x 3/16	4	4	0.1875	0.188	9.42	2.78	18.3	18.3	6.61	3.31	1.54	3.92	10.7	5.44	1.28	3 3/16
HSS 3-1/2 x 3-1/2 x 3/8	3.5	3.5	0.375	0.375	14.72	4.33	6.33	6.33	6.74	3.85	1.25	4.91	11.7	7.12	1.06	--
x 5/16	3.5	3.5	0.3125	0.313	12.70	3.74	8.18	8.18	6.11	3.49	1.28	4.36	10.4	6.24	1.08	2 1/8
x 1/4	3.5	3.5	0.25	0.250	10.51	3.09	11.0	11.0	5.29	3.02	1.31	3.69	8.82	5.22	1.10	2 3/8

A1085 Square HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	I	S	r	Z	Torsion		Surface Area	Workable Flat
	H	B	t _{nom}										J	C		
	in	in	in										in ⁴	in ³		
HSS 3-1/2 x 3-1/2 x 3/16	3.5	3.5	0.1875	0.188	8.15	2.40	15.6	15.6	4.30	2.46	1.34	2.94	7.00	4.10	1.11	2 11/16
HSS 3 x 3 x 3/8	3	3	0.375	0.375	12.17	3.58	5.00	5.00	3.89	2.59	1.04	3.38	6.89	4.96	0.893	--
x 5/16	3	3	0.3125	0.313	10.58	3.11	6.58	6.58	3.59	2.39	1.07	3.04	6.22	4.40	0.910	--
x 1/4	3	3	0.25	0.250	8.81	2.59	9.00	9.00	3.16	2.11	1.10	2.61	5.35	3.72	0.928	--
x 3GA	3	3	0.238	0.238	8.45	2.48	9.61	9.61	3.06	2.04	1.11	2.52	5.16	3.58	0.932	--
x 3/16	3	3	0.1875	0.188	6.87	2.02	13.0	13.0	2.61	1.74	1.14	2.10	4.29	2.95	0.946	2 3/16
x 8GA	3	3	0.165	0.165	6.13	1.80	15.2	15.2	2.36	1.57	1.15	1.89	3.86	2.63	0.953	2 1/4
HSS 2-1/2 x 2-1/2 x 5/16	2.5	2.5	0.3125	0.313	8.45	2.49	4.99	4.99	1.88	1.50	0.869	1.96	3.33	2.88	0.744	--
x 1/4	2.5	2.5	0.25	0.250	7.11	2.09	7.00	7.00	1.69	1.35	0.899	1.71	2.92	2.47	0.762	--
x 3GA	2.5	2.5	0.238	0.238	6.83	2.01	7.50	7.50	1.65	1.32	0.906	1.66	2.83	2.38	0.765	--
x 3/16	2.5	2.5	0.1875	0.188	5.59	1.65	10.3	10.3	1.43	1.14	0.931	1.40	2.39	1.98	0.780	--
x 8GA	2.5	2.5	0.165	0.165	5.01	1.47	12.2	12.2	1.30	1.04	0.940	1.27	2.16	1.78	0.786	--
HSS 2-1/4 x 2-1/4 x 1/4	2.25	2.25	0.25	0.250	6.26	1.84	6.00	6.00	1.17	1.04	0.797	1.33	2.05	1.94	0.678	--
x 3/16	2.25	2.25	0.1875	0.188	4.96	1.46	8.97	8.97	1.00	0.889	0.828	1.10	1.70	1.57	0.696	--
HSS 2 x 2 x 1/4	2	2	0.25	0.250	5.41	1.59	5.00	5.00	0.769	0.769	0.695	1.00	1.36	1.47	0.595	--
x 3/16	2	2	0.1875	0.188	4.32	1.27	7.64	7.64	0.670	0.670	0.726	0.841	1.15	1.21	0.613	--
x 8GA	2	2	0.165	0.165	3.88	1.14	9.12	9.12	0.620	0.620	0.737	0.768	1.05	1.09	0.619	--
HSS 1-1/2 x 1-1/2 x 1/4	1.5	1.5	0.25	0.250	3.71	1.09	3.00	3.00	0.263	0.351	0.491	0.481	0.477	0.721	0.428	--
x 3/16	1.5	1.5	0.1875	0.188	3.04	0.896	4.98	4.98	0.244	0.325	0.522	0.424	0.431	0.622	0.446	--
x 7GA	1.5	1.5	0.18	0.180	2.95	0.867	5.33	5.33	0.239	0.319	0.525	0.414	0.422	0.605	0.448	--
x 8GA	1.5	1.5	0.165	0.165	2.76	0.811	6.09	6.09	0.230	0.307	0.533	0.393	0.402	0.571	0.453	--
HSS 1-1/4 x 1-1/4 x 7GA	1.25	1.25	0.18	0.180	2.34	0.687	3.94	3.94	0.123	0.197	0.423	0.263	0.221	0.390	0.365	--
x 1/8	1.25	1.25	0.125	0.125	1.78	0.522	7.00	7.00	0.106	0.170	0.451	0.214	0.183	0.309	0.381	--
x 11GA	1.25	1.25	0.12	0.120	1.72	0.505	7.42	7.42	0.103	0.165	0.452	0.208	0.178	0.300	0.382	--
x 0.100	1.25	1.25	0.1	0.100	1.48	0.434	9.50	9.50	0.0928	0.148	0.462	0.183	0.156	0.261	0.388	--
x 14GA	1.25	1.25	0.083	0.083	1.26	0.370	12.1	12.1	0.0818	0.131	0.470	0.159	0.136	0.224	0.393	--
HSS 1 x 1 x 1/8	1	1	0.125	0.125	1.35	0.397	5.00	5.00	0.0481	0.0962	0.348	0.125	0.0851	0.184	0.298	--
x 11GA	1	1	0.12	0.120	1.31	0.385	5.33	5.33	0.0473	0.0946	0.351	0.123	0.0833	0.179	0.299	--
x 0.100	1	1	0.1	0.100	1.14	0.334	7.00	7.00	0.0433	0.0866	0.360	0.110	0.0748	0.158	0.305	--
x 14GA	1	1	0.083	0.083	0.98	0.287	9.05	9.05	0.0389	0.0778	0.368	0.0964	0.0658	0.137	0.310	--

A1085 Rectangular HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area	Workable Flat		
	h	b	t _{nom}						I	S	r	Z	I	S	r	Z	J	C		Depth	Width	
	in	in	in						in ⁴	in ³	in	in ³	in ⁴	in ³	in.	in ³	in ⁴	in ³		ft ² /ft	in	in
HSS 24 x 12 x 3/4	24	12	0.75	0.750	171.16	50.3	13.0	29.0	3650	304	8.52	382	1240	207	4.97	235	3030	391	5.79	20 5/8	8 5/8	
	x 5/8	24	12	0.625	0.625	144.39	42.4	16.2	35.4	3130	261	8.59	325	1070	178	5.02	201	2590	331	5.82	21 3/16	9 3/16
	x 1/2	24	12	0.5	0.500	116.91	34.4	21.0	45.0	2580	215	8.66	266	883	147	5.07	164	2120	270	5.86	21 3/4	9 3/4
HSS 20 x 12 x 3/4	20	12	0.75	0.750	150.75	44.3	13.0	23.7	2320	232	7.24	287	1050	175	4.87	202	2360	323	5.12	16 5/8	8 5/8	
	x 5/8	20	12	0.625	0.625	127.37	37.4	16.2	29.0	2000	200	7.31	245	904	151	4.92	172	2010	275	5.15	17 3/16	9 3/16
	x 1/2	20	12	0.5	0.500	103.30	30.4	21.0	37.0	1650	165	7.37	201	750	125	4.97	141	1650	224	5.19	17 3/4	9 3/4
	x 3/8	20	12	0.375	0.375	78.52	23.1	29.0	50.3	1280	128	7.44	154	583	97.2	5.02	109	1270	171	5.23	18 5/16	10 5/16
	x 5/16	20	12	0.3125	0.313	65.87	19.4	35.3	60.9	1080	108	7.46	130	495	82.5	5.05	91.9	1070	144	5.24	18 5/8	10 5/8
	x 1/4	20	12	0.25	0.250	53.05	15.6	45.0	77.0	878	88	7.50	105	403	67.2	5.08	74.3	863	116	5.26	18 7/8	10 7/8
HSS 20 x 8 x 5/8	20	8	0.625	0.625	110.36	32.4	9.8	29.0	1530	153	6.87	197	358	89.5	3.32	103	973	178	4.49	17 3/16	5 3/16	
	x 1/2	20	8	0.5	0.500	89.68	26.4	13.0	37.0	1270	127	6.94	162	300	75.0	3.37	84.7	806	146	4.52	17 3/4	5 3/4
	x 3/8	20	8	0.375	0.375	68.31	20.1	18.3	50.3	988	98.8	7.01	125	236	59.0	3.43	65.6	625	112	4.56	18 5/16	6 5/16
	x 5/16	20	8	0.3125	0.313	57.36	16.9	22.6	60.9	840	84.0	7.05	106	202	50.5	3.46	55.6	530	94.6	4.58	18 5/8	6 5/8
	x 1/4	20	8	0.25	0.250	46.24	13.6	29.0	77.0	683	68.3	7.09	85	165	41.3	3.48	45.1	430	76.5	4.60	18 7/8	6 7/8
HSS 20 x 4 x 1/2	20	4	0.5	0.500	76.07	22.4	5.0	37.0	889	88.9	6.30	123	61.6	30.8	1.66	36.0	205	67.8	3.86	17 3/4	--	
	x 3/8	20	4	0.375	0.375	58.10	17.1	7.7	50.3	699	69.9	6.39	95.3	50.3	25.2	1.72	28.5	165	53.2	3.89	18 5/16	2 5/16
	x 5/16	20	4	0.3125	0.313	48.86	14.4	9.8	60.9	597	59.7	6.44	80.9	43.7	21.9	1.74	24.4	143	45.3	3.91	18 5/8	2 5/8
	x 1/4	20	4	0.25	0.250	39.43	11.6	13.0	77.0	488	48.8	6.49	65.7	36.4	18.2	1.77	20.0	118	37.0	3.93	18 7/8	2 7/8
HSS 18 x 6 x 5/8	18	6	0.625	0.625	93.34	27.4	6.6	25.8	977	109	5.97	144	166	55.3	2.46	64.6	489	116	3.82	15 3/16	3 3/16	
	x 1/2	18	6	0.5	0.500	76.07	22.4	9.0	33.0	818	90.9	6.04	119	142	47.3	2.52	53.9	410	95.8	3.86	15 3/4	3 3/4
	x 3/8	18	6	0.375	0.375	58.10	17.1	13.0	45.0	641	71.2	6.12	92.2	113	37.7	2.57	42.1	322	74.2	3.89	16 5/16	4 5/16
	x 5/16	18	6	0.3125	0.313	48.86	14.4	16.2	54.5	547	60.8	6.16	78.2	97.1	32.4	2.60	35.8	275	62.8	3.91	16 5/8	4 5/8
	x 1/4	18	6	0.25	0.250	39.43	11.6	21.0	69.0	447	49.7	6.21	63.5	80.0	26.7	2.63	29.2	224	51.0	3.93	16 7/8	4 7/8
HSS 16 x 12 x 3/4	16	12	0.75	0.750	130.33	38.3	13.0	18.3	1340	168	5.91	205	856	143	4.73	168	1710	256	4.45	12 5/8	8 5/8	
	x 5/8	16	12	0.625	0.625	110.36	32.4	16.2	22.6	1160	145	5.98	175	742	124	4.79	144	1460	218	4.49	13 3/16	9 3/16
	x 1/2	16	12	0.5	0.500	89.68	26.4	21.0	29.0	962	120	6.04	144	618	103	4.84	118	1200	178	4.52	13 3/4	9 3/4
	x 3/8	16	12	0.375	0.375	68.31	20.1	29.0	39.7	748	93.5	6.10	111	482	80.3	4.90	91.3	922	136	4.56	14 5/16	10 5/16
	x 5/16	16	12	0.3125	0.313	57.36	16.9	35.3	48.1	636	79.5	6.13	93.9	410	68.3	4.93	77.3	779	115	4.58	14 5/8	10 5/8
	x 1/4	16	12	0.25	0.250	46.24	13.6	45.0	61.0	517	64.6	6.17	76.0	334	55.7	4.96	62.6	629	92.5	4.60	14 7/8	10 7/8
HSS 16 x 8 x 5/8	16	8	0.625	0.625	93.34	27.4	9.8	22.6	863	108	5.61	137	290	72.5	3.25	84.1	723	141	3.82	13 3/16	5 3/16	

A1085 Rectangular HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area	Workable Flat	
	h	b	t _{nom}						I	S	r	Z	I	S	r	Z	J	C		Depth	Width
	in	in	in						in ⁴	in ³	in	in ³	in ⁴	in ³	in.	in ³	in ⁴	in ³		in	in
HSS 12 x 10 x 5/16	12	10	0.3125	0.313	44.60	13.1	28.9	35.3	282	47.0	4.64	55.3	213	42.6	4.03	48.9	381	70.8	3.58	10 5/8	8 5/8
x 1/4	12	10	0.25	0.250	36.03	10.6	37.0	45.0	230	38.3	4.66	44.9	174	34.8	4.05	39.7	309	57.2	3.60	10 7/8	8 7/8
HSS 12 x 8 x 5/8	12	8	0.625	0.625	76.33	22.4	9.8	16.2	419	69.8	4.32	87.1	221	55.3	3.14	65.6	481	104	3.15	9 3/16	5 3/16
x 1/2	12	8	0.5	0.500	62.46	18.4	13.0	21.0	353	58.8	4.38	72.4	188	47.0	3.20	54.7	401	85.8	3.19	9 3/4	5 3/4
x 3/8	12	8	0.375	0.375	47.90	14.1	18.3	29.0	279	46.5	4.45	56.5	149	37.3	3.25	42.7	312	66.3	3.23	10 5/16	6 5/16
x 5/16	12	8	0.3125	0.313	40.35	11.9	22.6	35.3	239	39.8	4.48	48.0	128	32.0	3.28	36.4	265	56.1	3.24	10 5/8	6 5/8
x 1/4	12	8	0.25	0.250	32.63	9.59	29.0	45.0	196	32.7	4.52	39.1	105	26.3	3.31	29.6	216	45.5	3.26	10 7/8	6 7/8
x 3/16	12	8	0.1875	0.188	24.73	7.29	39.6	60.8	151	25.2	4.55	29.9	81.3	20.3	3.34	22.7	165	34.7	3.28	11 3/16	7 3/16
HSS 12 x 6 x 5/8	12	6	0.625	0.625	67.82	19.9	6.6	16.2	338	56.3	4.12	72.9	112	37.3	2.37	44.5	286	75.5	2.82	9 3/16	3 3/16
x 1/2	12	6	0.5	0.500	55.66	16.4	9.0	21.0	287	47.8	4.18	60.9	96.0	32.0	2.42	37.4	241	62.8	2.86	9 3/4	3 3/4
x 3/8	12	6	0.375	0.375	42.79	12.6	13.0	29.0	228	38.0	4.25	47.7	77.3	25.8	2.48	29.4	190	48.8	2.89	10 5/16	4 5/16
x 5/16	12	6	0.3125	0.313	36.10	10.6	16.2	35.3	196	32.7	4.30	40.7	66.7	22.2	2.51	25.1	162	41.5	2.91	10 5/8	4 5/8
x 1/4	12	6	0.25	0.250	29.23	8.59	21.0	45.0	161	26.8	4.33	33.2	55.2	18.4	2.53	20.6	132	33.7	2.93	10 7/8	4 7/8
x 3/16	12	6	0.1875	0.188	22.18	6.54	28.9	60.8	125	20.8	4.37	25.5	42.9	14.3	2.56	15.8	102	25.8	2.95	11 3/16	5 3/16
HSS 12 x 4 x 5/8	12	4	0.625	0.625	59.32	17.4	3.4	16.2	257	42.8	3.84	58.6	42.0	21.0	1.55	25.8	127	47.0	2.49	9 3/16	--
x 1/2	12	4	0.5	0.500	48.85	14.4	5.0	21.0	221	36.8	3.92	49.4	37.0	18.5	1.60	22.0	110	39.8	2.52	9 3/4	--
x 3/8	12	4	0.375	0.375	37.69	11.1	7.7	29.0	178	29.7	4.00	39.0	30.5	15.3	1.66	17.6	89.0	31.4	2.56	10 5/16	2 5/16
x 5/16	12	4	0.3125	0.313	31.84	9.37	9.8	35.3	153	25.5	4.04	33.4	26.7	13.4	1.69	15.1	77.0	26.9	2.58	10 5/8	2 5/8
x 1/4	12	4	0.25	0.250	25.82	7.59	13.0	45.0	127	21.2	4.09	27.3	22.3	11.2	1.71	12.5	63.6	22.0	2.60	10 7/8	2 7/8
x 3/16	12	4	0.1875	0.188	19.63	5.78	18.3	60.8	98.4	16.4	4.13	21.0	17.5	8.75	1.74	9.66	49.4	16.9	2.61	11 3/16	3 3/16
HSS 12 x 3-1/2 x 3/8	12	3.5	0.375	0.375	36.41	10.7	6.3	29.0	165	27.5	3.93	36.8	22.4	12.8	1.45	14.9	68.3	27.0	2.48	10 5/16	--
x 5/16	12	3.5	0.3125	0.313	30.78	9.06	8.2	35.3	143	23.8	3.97	31.6	19.7	11.3	1.47	12.8	59.4	23.2	2.49	10 5/8	2 1/8
HSS 12 x 3 x 5/16	12	3	0.3125	0.313	29.72	8.75	6.6	35.3	132	22.0	3.88	29.7	13.8	9.20	1.26	10.6	43.7	19.5	2.41	10 5/8	--
x 1/4	12	3	0.25	0.250	24.12	7.09	9.0	45.0	109	18.2	3.92	24.4	11.7	7.80	1.28	8.80	36.5	16.1	2.43	10 7/8	--
x 3/16	12	3	0.1875	0.188	18.35	5.41	13.0	60.8	85.3	14.2	3.97	18.8	9.30	6.20	1.31	6.86	28.7	12.5	2.45	11 3/16	2 3/16
HSS 12 x 2 x 5/16	12	2	0.3125	0.313	27.59	8.12	3.4	35.3	111	18.5	3.70	26.1	5.33	5.33	0.810	6.39	18.4	12.2	2.24	10 5/8	--
x 1/4	12	2	0.25	0.250	22.42	6.59	5.0	45.0	92.2	15.4	3.74	21.4	4.62	4.62	0.837	5.38	15.9	10.2	2.26	10 7/8	--
x 3/16	12	2	0.1875	0.188	17.08	5.03	7.6	60.8	72.2	12.0	3.79	16.6	3.77	3.77	0.866	4.25	12.8	8.02	2.28	11 3/16	--
HSS 10 x 8 x 5/8	10	8	0.625	0.625	67.82	19.9	9.8	13.0	266	53.2	3.66	65.9	187	46.8	3.07	56.4	367	85.5	2.82	7 3/16	5 3/16
x 1/2	10	8	0.5	0.500	55.66	16.4	13.0	17.0	226	45.2	3.71	55.1	160	40.0	3.12	47.2	306	70.8	2.86	7 3/4	5 3/4

A1085 Rectangular HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area	Workable Flat	
	h	b	t _{nom}						I	S	r	Z	I	S	r	Z	J	C		Depth	Width
	in	in	in						in ⁴	in ³	in	in ³	in ⁴	in ³	in.	in ³	in ⁴	in ³		ft ² /ft	in
HSS 10 x 8 x 3/8	10	8	0.375	0.375	42.79	12.6	18.3	23.7	180	36.0	3.78	43.1	127	31.8	3.17	37.0	239	54.8	2.89	8 5/16	6 5/16
x 5/16	10	8	0.3125	0.313	36.10	10.6	22.6	28.9	154	30.8	3.81	36.8	110	27.5	3.22	31.6	203	46.5	2.91	8 5/8	6 5/8
x 1/4	10	8	0.25	0.250	29.23	8.59	29.0	37.0	127	25.4	3.85	30.0	90.2	22.6	3.24	25.8	166	37.7	2.93	8 7/8	6 7/8
x 3/16	10	8	0.1875	0.188	22.18	6.54	39.6	50.2	98.1	19.6	3.87	23.0	69.8	17.5	3.27	19.8	127	28.8	2.95	9 3/16	7 3/16
HSS 10 x 6 x 5/8	10	6	0.625	0.625	59.32	17.4	6.6	13.0	211	42.2	3.48	54.2	93.6	31.2	2.32	37.7	221	62.0	2.49	7 3/16	3 3/16
x 1/2	10	6	0.5	0.500	48.85	14.4	9.0	17.0	181	36.2	3.55	45.6	80.9	27.0	2.37	31.9	187	51.8	2.52	7 3/4	3 3/4
x 3/8	10	6	0.375	0.375	37.69	11.1	13.0	23.7	145	29.0	3.61	35.9	65.4	21.8	2.43	25.2	147	40.4	2.56	8 5/16	4 5/16
x 5/16	10	6	0.3125	0.313	31.84	9.37	16.2	28.9	125	25.0	3.65	30.7	56.6	18.9	2.46	21.6	126	34.4	2.58	8 5/8	4 5/8
x 1/4	10	6	0.25	0.250	25.82	7.59	21.0	37.0	103	20.6	3.68	25.1	46.9	15.6	2.49	17.7	103	28.0	2.60	8 7/8	4 7/8
x 3/16	10	6	0.1875	0.188	19.63	5.78	28.9	50.2	80.0	16.0	3.72	19.3	36.5	12.2	2.51	13.6	79.3	21.4	2.61	9 3/16	5 3/16
HSS 10 x 5 x 3/8	10	5	0.375	0.375	35.13	10.3	10.3	23.7	128	25.6	3.53	32.3	42.9	17.2	2.04	19.9	107	33.2	2.39	8 5/16	3 5/16
x 5/16	10	5	0.3125	0.313	29.72	8.75	13.0	28.9	110	22.0	3.55	27.7	37.3	14.9	2.06	17.0	91.6	28.3	2.41	8 5/8	3 5/8
x 1/4	10	5	0.25	0.250	24.12	7.09	17.0	37.0	91.2	18.2	3.59	22.7	31.1	12.4	2.09	14.0	75.2	23.1	2.43	8 7/8	3 7/8
x 3/16	10	5	0.1875	0.188	18.35	5.41	23.6	50.2	70.9	14.2	3.62	17.5	24.3	9.72	2.12	10.8	58.1	17.7	2.45	9 3/16	4 3/16
HSS 10 x 4 x 5/8	10	4	0.625	0.625	50.81	14.9	3.4	13.0	156	31.2	3.24	42.5	34.8	17.4	1.53	21.6	99.8	38.6	2.15	7 3/16	--
x 1/2	10	4	0.5	0.500	42.05	12.4	5.0	17.0	136	27.2	3.31	36.1	30.8	15.4	1.58	18.5	86.9	32.8	2.19	7 3/4	--
x 3/8	10	4	0.375	0.375	32.58	9.58	7.7	23.7	110	22.0	3.39	28.7	25.5	12.8	1.63	14.9	70.4	26.0	2.23	8 5/16	2 5/16
x 5/16	10	4	0.3125	0.313	27.59	8.12	9.8	28.9	95.6	19.1	3.43	24.6	22.4	11.2	1.66	12.8	60.9	22.2	2.24	8 5/8	2 5/8
x 1/4	10	4	0.25	0.250	22.42	6.59	13.0	37.0	79.3	15.9	3.47	20.2	18.8	9.40	1.69	10.6	50.4	18.2	2.26	8 7/8	2 7/8
x 3/16	10	4	0.1875	0.188	17.08	5.03	18.3	50.2	61.9	12.4	3.51	15.6	14.8	7.40	1.72	8.22	39.2	14.0	2.28	9 3/16	3 3/16
HSS 10 x 3-1/2 x 1/2	10	3.5	0.5	0.500	40.34	11.9	4.0	17.0	124	24.8	3.23	33.7	22.3	12.7	1.37	15.5	66.2	28.0	2.11	7 3/4	--
x 3/8	10	3.5	0.375	0.375	31.31	9.20	6.3	23.7	102	20.4	3.33	26.9	18.7	10.7	1.43	12.5	54.3	22.4	2.14	8 5/16	--
x 5/16	10	3.5	0.3125	0.313	26.53	7.81	8.2	28.9	88.2	17.6	3.36	23.1	16.5	9.43	1.45	10.8	47.3	19.2	2.16	8 5/8	2 1/8
x 1/4	10	3.5	0.25	0.250	21.57	6.34	11.0	37.0	73.4	14.7	3.40	19.0	13.9	7.94	1.48	8.98	39.3	15.8	2.18	8 7/8	2 3/8
x 3/16	10	3.5	0.1875	0.188	16.44	4.84	15.6	50.2	57.4	11.5	3.44	14.7	11.0	6.29	1.51	6.99	30.7	12.2	2.20	9 3/16	2 11/16
HSS 10 x 3 x 3/8	10	3	0.375	0.375	30.03	8.83	5.0	23.7	92.8	18.6	3.24	25.1	13.0	8.67	1.21	10.3	39.8	18.7	2.06	8 5/16	--
x 5/16	10	3	0.3125	0.313	25.46	7.49	6.6	28.9	80.9	16.2	3.29	21.6	11.5	7.67	1.24	8.93	34.9	16.2	2.08	8 5/8	--
x 1/4	10	3	0.25	0.250	20.72	6.09	9.0	37.0	67.4	13.5	3.33	17.8	9.79	6.53	1.27	7.42	29.3	13.3	2.10	8 7/8	--
x 3/16	10	3	0.1875	0.188	15.80	4.66	13.0	50.2	52.8	10.6	3.37	13.8	7.82	5.21	1.30	5.80	23.0	10.3	2.11	9 3/16	2 3/16
HSS 10 x 2 x 3/8	10	2	0.375	0.375	27.48	8.08	2.3	23.7	75.4	15.1	3.05	21.5	4.87	4.87	0.776	6.05	16.5	11.5	1.89	8 5/16	--

A1085 Rectangular HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area	Workable Flat	
	h	b	t _{nom}						I	S	r	Z	I	S	r	Z	J	C		Depth	Width
	in	in	in						in ⁴	in ³	in	in ³	in ⁴	in ³	in.	in ³	in ⁴	in ³		ft ² /ft	in
HSS 10 x 2 x 5/16	10	2	0.3125	0.313	23.34	6.87	3.4	28.9	66.2	13.2	3.10	18.6	4.43	4.43	0.803	5.34	14.9	10.1	1.91	8 5/8	--
x 1/4	10	2	0.25	0.250	19.02	5.59	5.0	37.0	55.6	11.1	3.15	15.4	3.85	3.85	0.830	4.50	12.8	8.47	1.93	8 7/8	--
x 3/16	10	2	0.1875	0.188	14.53	4.28	7.6	50.2	43.8	8.76	3.20	11.9	3.15	3.15	0.858	3.57	10.4	6.66	1.95	9 3/16	--
HSS 9 x 7 x 5/8	9	7	0.625	0.625	59.32	17.4	8.2	11.4	183	40.7	3.24	51.0	123	35.1	2.66	42.8	248	65.8	2.49	6 3/16	4 3/16
x 1/2	9	7	0.5	0.500	48.85	14.4	11.0	15.0	157	34.9	3.30	42.9	106	30.3	2.71	36.1	209	54.8	2.52	6 3/4	4 3/4
x 3/8	9	7	0.375	0.375	37.69	11.1	15.7	21.0	126	28.0	3.37	33.8	85.2	24.3	2.77	28.4	164	42.7	2.56	7 5/16	5 5/16
x 5/16	9	7	0.3125	0.313	31.84	9.37	19.4	25.8	108	24.0	3.40	28.9	73.6	21.0	2.80	24.3	140	36.2	2.58	7 5/8	5 5/8
x 1/4	9	7	0.25	0.250	25.82	7.59	25.0	33.0	89.4	19.9	3.43	23.6	60.8	17.4	2.83	19.9	114	29.5	2.60	7 7/8	5 7/8
x 3/16	9	7	0.1875	0.188	19.63	5.78	34.2	44.9	69.4	15.4	3.47	18.2	47.3	13.5	2.86	15.3	87.9	22.5	2.61	8 3/16	6 3/16
HSS 9 x 5 x 5/8	9	5	0.625	0.625	50.81	14.9	5.0	11.4	139	30.9	3.05	40.5	54.1	21.6	1.91	26.6	135	44.9	2.15	6 3/16	2 3/16
x 1/2	9	5	0.5	0.500	42.05	12.4	7.0	15.0	121	26.9	3.12	34.4	47.4	19.0	1.96	22.7	115	37.8	2.19	6 3/4	2 3/4
x 3/8	9	5	0.375	0.375	32.58	9.58	10.3	21.0	97.8	21.7	3.20	27.3	38.9	15.6	2.02	18.1	92.2	29.7	2.23	7 5/16	3 5/16
x 5/16	9	5	0.3125	0.313	27.59	8.12	13.0	25.8	84.7	18.8	3.23	23.4	33.9	13.6	2.04	15.6	79.3	25.4	2.24	7 5/8	3 5/8
x 1/4	9	5	0.25	0.250	22.42	6.59	17.0	33.0	70.3	15.6	3.27	19.3	28.2	11.3	2.07	12.8	65.2	20.7	2.26	7 7/8	3 7/8
x 3/16	9	5	0.1875	0.188	17.08	5.03	23.6	44.9	54.8	12.2	3.30	14.9	22.1	8.84	2.10	9.93	50.4	15.9	2.28	8 3/16	4 3/16
HSS 9 x 3 x 1/2	9	3	0.5	0.500	35.24	10.4	3.0	15.0	84.5	18.8	2.85	25.9	13.7	9.13	1.15	11.3	41.6	20.8	1.86	6 3/4	--
x 3/8	9	3	0.375	0.375	27.48	8.08	5.0	21.0	69.9	15.5	2.94	20.9	11.7	7.80	1.20	9.29	34.9	16.8	1.89	7 5/16	--
x 5/16	9	3	0.3125	0.313	23.34	6.87	6.6	25.8	61.1	13.6	2.98	18.0	10.4	6.93	1.23	8.09	30.6	14.5	1.91	7 5/8	--
x 1/4	9	3	0.25	0.250	19.02	5.59	9.0	33.0	51.1	11.4	3.02	14.9	8.85	5.90	1.26	6.73	25.6	12.0	1.93	7 7/8	--
x 3/16	9	3	0.1875	0.188	14.53	4.28	13.0	44.9	40.2	8.93	3.06	11.6	7.07	4.71	1.29	5.27	20.2	9.29	1.95	8 3/16	2 3/16
HSS 8 x 6 x 5/8	8	6	0.625	0.625	50.81	14.9	6.6	9.8	119	29.8	2.83	38.0	75.5	25.2	2.25	31.0	158	48.6	2.15	5 3/16	3 3/16
x 1/2	8	6	0.5	0.500	42.05	12.4	9.0	13.0	103	25.8	2.88	32.2	65.7	21.9	2.30	26.4	135	40.8	2.19	5 3/4	3 3/4
x 3/8	8	6	0.375	0.375	32.58	9.58	13.0	18.3	83.7	20.9	2.96	25.6	53.5	17.8	2.36	21.0	107	32.0	2.23	6 5/16	4 5/16
x 5/16	8	6	0.3125	0.313	27.59	8.12	16.2	22.6	72.5	18.1	2.99	22.0	46.5	15.5	2.39	18.0	91.4	27.2	2.24	6 5/8	4 5/8
x 1/4	8	6	0.25	0.250	22.42	6.59	21.0	29.0	60.1	15.0	3.02	18.0	38.6	12.9	2.42	14.8	74.9	22.2	2.26	6 7/8	4 7/8
x 3/16	8	6	0.1875	0.188	17.08	5.03	28.9	39.6	46.9	11.7	3.05	13.9	30.2	10.1	2.45	11.4	57.7	17.0	2.28	7 3/16	5 3/16
HSS 8 x 4 x 5/8	8	4	0.625	0.625	42.30	12.4	3.4	9.8	85.2	21.3	2.62	28.8	27.6	13.8	1.49	17.3	73.2	30.2	1.82	5 3/16	--
x 1/2	8	4	0.5	0.500	35.24	10.4	5.0	13.0	75.2	18.8	2.69	24.7	24.6	12.3	1.54	15.0	64.1	25.8	1.86	5 3/4	--
x 3/8	8	4	0.375	0.375	27.48	8.08	7.7	18.3	61.9	15.5	2.77	19.9	20.6	10.3	1.60	12.2	52.2	20.5	1.89	6 5/16	2 5/16
x 5/16	8	4	0.3125	0.313	23.34	6.87	9.8	22.6	54.0	13.5	2.80	17.1	18.1	9.05	1.62	10.5	45.2	17.6	1.91	6 5/8	2 5/8

A1085 Rectangular HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area	Workable Flat	
	h	b	t _{nom}						I	S	r	Z	I	S	r	Z	J	C		Depth	Width
	in	in	in						in ⁴	in ³	in	in ³	in ⁴	in ³	in.	in ³	in ⁴	in ³		ft ² /ft	in
HSS 8 x 4 x 1/4	8	4	0.25	0.250	19.02	5.59	13.0	29.0	45.1	11.3	2.84	14.1	15.3	7.65	1.65	8.72	37.5	14.5	1.93	6 7/8	2 7/8
x 3/16	8	4	0.1875	0.188	14.53	4.28	18.3	39.6	35.4	8.9	2.88	11.0	12.1	6.05	1.68	6.79	29.2	11.2	1.95	7 3/16	3 3/16
HSS 8 x 3 x 1/2	8	3	0.5	0.500	31.84	9.36	3.0	13.0	61.1	15.3	2.55	21.0	12.1	8.07	1.14	10.1	35.7	18.3	1.69	5 3/4	--
x 3/8	8	3	0.375	0.375	24.93	7.33	5.0	18.3	51.0	12.8	2.64	17.0	10.4	6.93	1.19	8.31	29.9	14.8	1.73	6 5/16	--
x 5/16	8	3	0.3125	0.313	21.21	6.24	6.6	22.6	44.8	11.2	2.68	14.7	9.26	6.17	1.22	7.25	26.3	12.8	1.74	6 5/8	--
x 1/4	8	3	0.25	0.250	17.32	5.09	9.0	29.0	37.6	9.40	2.72	12.2	7.90	5.27	1.25	6.05	22.1	10.6	1.76	6 7/8	--
x 3/16	8	3	0.1875	0.188	13.25	3.90	13.0	39.6	29.7	7.43	2.76	9.51	6.33	4.22	1.27	4.74	17.4	8.23	1.78	7 3/16	2 3/16
HSS 8 x 2 x 1/2	8	2	0.5	0.500	28.43	8.36	1.0	13.0	47.0	11.8	2.37	17.2	4.28	4.28	0.716	5.67	13.9	10.8	1.52	5 3/4	--
x 3/8	8	2	0.375	0.375	22.37	6.58	2.3	18.3	40.1	10.0	2.47	14.2	3.86	3.86	0.766	4.83	12.6	9.09	1.56	6 5/16	--
x 5/16	8	2	0.3125	0.313	19.08	5.62	3.4	22.6	35.5	8.88	2.51	12.3	3.53	3.53	0.793	4.28	11.4	8.00	1.58	6 5/8	--
x 1/4	8	2	0.25	0.250	15.62	4.59	5.0	29.0	30.1	7.53	2.56	10.3	3.08	3.08	0.819	3.63	9.84	6.72	1.60	6 7/8	--
x 3/16	8	2	0.1875	0.188	11.97	3.53	7.6	39.6	23.9	5.98	2.60	8.04	2.53	2.53	0.847	2.89	7.95	5.30	1.61	7 3/16	--
HSS 7 x 5 x 1/2	7	5	0.5	0.500	35.24	10.4	7.0	11.0	63.5	18.1	2.47	23.1	37.3	14.9	1.89	18.2	79.9	28.8	1.86	4 3/4	2 3/4
x 3/8	7	5	0.375	0.375	27.48	8.08	10.3	15.7	52.2	14.9	2.54	18.5	30.8	12.3	1.95	14.6	64.2	22.8	1.89	5 5/16	3 5/16
x 5/16	7	5	0.3125	0.313	23.34	6.87	13.0	19.4	45.5	13.0	2.57	16.0	27.0	10.8	1.98	12.6	55.4	19.5	1.91	5 5/8	3 5/8
x 1/4	7	5	0.25	0.250	19.02	5.59	17.0	25.0	38.0	10.9	2.61	13.2	22.6	9.04	2.01	10.4	45.6	16.0	1.93	5 7/8	3 7/8
x 3/16	7	5	0.1875	0.188	14.53	4.28	23.6	34.2	29.8	8.51	2.64	10.2	17.8	7.12	2.04	8.12	35.3	12.3	1.95	6 3/16	4 3/16
HSS 7 x 4 x 1/2	7	4	0.5	0.500	31.84	9.36	5.0	11.0	52.9	15.1	2.38	19.8	21.6	10.8	1.52	13.3	53.0	22.3	1.69	4 3/4	--
x 3/8	7	4	0.375	0.375	24.93	7.33	7.7	15.7	44.0	12.6	2.45	16.0	18.1	9.05	1.57	10.8	43.3	17.8	1.73	5 5/16	2 5/16
x 5/16	7	4	0.3125	0.313	21.21	6.24	9.8	19.4	38.5	11.0	2.48	13.9	16.0	8.00	1.60	9.37	37.6	15.3	1.74	5 5/8	2 5/8
x 1/4	7	4	0.25	0.250	17.32	5.09	13.0	25.0	32.3	9.23	2.52	11.5	13.5	6.75	1.63	7.78	31.2	12.6	1.76	5 7/8	2 7/8
x 3/16	7	4	0.1875	0.188	13.25	3.90	18.3	34.2	25.5	7.29	2.56	8.93	10.7	5.35	1.66	6.07	24.3	9.74	1.78	6 3/16	3 3/16
HSS 7 x 3 x 1/2	7	3	0.5	0.500	28.43	8.36	3.0	11.0	42.3	12.1	2.25	16.6	10.5	7.00	1.12	8.84	29.8	15.8	1.52	4 3/4	--
x 3/8	7	3	0.375	0.375	22.37	6.58	5.0	15.7	35.7	10.2	2.33	13.5	9.10	6.07	1.18	7.32	25.1	12.8	1.56	5 5/16	--
x 5/16	7	3	0.3125	0.313	19.08	5.62	6.6	19.4	31.5	9.00	2.37	11.8	8.13	5.42	1.20	6.41	22.1	11.1	1.58	5 5/8	--
x 1/4	7	3	0.25	0.250	15.62	4.59	9.0	25.0	26.6	7.60	2.41	9.79	6.95	4.63	1.23	5.36	18.5	9.22	1.60	5 7/8	--
x 3/16	7	3	0.1875	0.188	11.97	3.53	13.0	34.2	21.1	6.03	2.44	7.65	5.58	3.72	1.26	4.21	14.6	7.18	1.61	6 3/16	2 3/16
HSS 7 x 2 x 1/4	7	2	0.25	0.250	13.91	4.09	5.0	25.0	20.9	5.97	2.26	8.10	2.70	2.70	0.812	3.19	8.36	5.85	1.43	5 7/8	--
3 x 16	7	2	0.1875	0.188	10.70	3.15	7.6	34.2	16.7	4.77	2.30	6.37	2.22	2.22	0.840	2.54	6.76	4.62	1.45	6 3/16	--
HSS 6 x 5 x 1/2	6	5	0.5	0.500	31.84	9.36	7.0	9.0	43.0	14.3	2.14	18.1	32.2	12.9	1.85	16.0	62.9	24.3	1.69	3 3/4	2 3/4

A1085 Rectangular HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area	Workable Flat	
	h	b	t _{nom}						I	S	r	Z	I	S	r	Z	J	C		Depth	Width
	in	in	in						in ⁴	in ³	in	in ³	in ⁴	in ³	in.	in ³	in ⁴	in ³		ft ² /ft	in
HSS 6 x 5 x 3/8	6	5	0.375	0.375	24.93	7.33	10.3	13.0	35.7	11.9	2.21	14.7	26.8	10.7	1.91	12.9	50.9	19.3	1.73	4 5/16	3 5/16
x 5/16	6	5	0.3125	0.313	21.21	6.24	13.0	16.2	31.3	10.4	2.24	12.7	23.5	9.40	1.94	11.2	44.0	16.6	1.74	4 5/8	3 5/8
x 1/4	6	5	0.25	0.250	17.32	5.09	17.0	21.0	26.2	8.73	2.27	10.5	19.8	7.92	1.97	9.26	36.3	13.6	1.76	4 7/8	3 7/8
x 3/16	6	5	0.1875	0.188	13.25	3.90	23.6	28.9	20.7	6.90	2.30	8.17	15.6	6.24	2.00	7.21	28.2	10.5	1.78	5 3/16	4 3/16
HSS 6 x 4 x 1/2	6	4	0.5	0.500	28.43	8.36	5.0	9.0	35.4	11.8	2.06	15.4	18.5	9.25	1.49	11.5	42.1	18.8	1.52	3 3/4	--
x 3/8	6	4	0.375	0.375	22.37	6.58	7.7	13.0	29.7	9.90	2.12	12.5	15.7	7.85	1.54	9.44	34.6	15.1	1.56	4 5/16	2 5/16
x 5/16	6	4	0.3125	0.313	19.08	5.62	9.8	16.2	26.2	8.73	2.16	10.9	13.9	6.95	1.57	8.22	30.1	13.0	1.58	4 5/8	2 5/8
x 1/4	6	4	0.25	0.250	15.62	4.59	13.0	21.0	22.1	7.37	2.19	9.06	11.7	5.85	1.60	6.84	25.0	10.7	1.60	4 7/8	2 7/8
x 3/16	6	4	0.1875	0.188	11.97	3.53	18.3	28.9	17.5	5.83	2.23	7.07	9.34	4.67	1.63	5.36	19.6	8.30	1.61	5 3/16	3 3/16
HSS 6 x 3 x 1/2	6	3	0.5	0.500	25.03	7.36	3.0	9.0	27.8	9.27	1.94	12.6	8.96	5.97	1.10	7.59	23.9	13.3	1.36	3 3/4	--
x 3/8	6	3	0.375	0.375	19.82	5.83	5.0	13.0	23.8	7.93	2.02	10.4	7.80	5.20	1.16	6.34	20.3	10.9	1.39	4 5/16	--
x 5/16	6	3	0.3125	0.313	16.96	4.99	6.6	16.2	21.1	7.03	2.06	9.12	6.99	4.66	1.18	5.56	17.9	9.45	1.41	4 5/8	--
x 1/4	6	3	0.25	0.250	13.91	4.09	9.0	21.0	17.9	5.97	2.09	7.62	6.00	4.00	1.21	4.67	15.1	7.85	1.43	4 7/8	--
x 3/16	6	3	0.1875	0.188	10.70	3.15	13.0	28.9	14.3	4.77	2.13	5.98	4.84	3.23	1.24	3.69	11.9	6.12	1.45	5 3/16	2 3/16
HSS 6 x 2 x 3/8	6	2	0.375	0.375	17.27	5.08	2.3	13.0	17.8	5.93	1.87	8.33	2.85	2.85	0.749	3.61	8.72	6.65	1.23	4 5/16	--
x 5/16	6	2	0.3125	0.313	14.83	4.36	3.4	16.2	16.1	5.37	1.92	7.34	2.62	2.62	0.775	3.23	7.94	5.89	1.24	4 5/8	--
x 1/4	6	2	0.25	0.250	12.21	3.59	5.0	21.0	13.8	4.60	1.96	6.18	2.31	2.31	0.802	2.75	6.88	4.97	1.26	4 7/8	--
x 3/16	6	2	0.1875	0.188	9.42	2.78	7.6	28.9	11.1	3.70	2.00	4.89	1.91	1.91	0.829	2.20	5.58	3.93	1.28	5 3/16	--
HSS 5 x 4 x 1/2	5	4	0.5	0.500	25.03	7.36	5.0	7.0	22.0	8.80	1.73	11.5	15.4	7.70	1.45	9.77	31.7	15.3	1.36	2 3/4	--
x 3/8	5	4	0.375	0.375	19.82	5.83	7.7	10.3	18.8	7.52	1.80	9.44	13.2	6.60	1.50	8.08	26.3	12.4	1.39	3 5/16	2 5/16
x 5/16	5	4	0.3125	0.313	16.96	4.99	9.8	13.0	16.6	6.64	1.82	8.25	11.7	5.85	1.53	7.06	22.9	10.7	1.41	3 5/8	2 5/8
x 1/4	5	4	0.25	0.250	13.91	4.09	13.0	17.0	14.1	5.64	1.86	6.89	9.98	4.99	1.56	5.90	19.1	8.85	1.43	3 7/8	2 7/8
x 3/16	5	4	0.1875	0.188	10.70	3.15	18.3	23.6	11.3	4.52	1.89	5.40	7.98	3.99	1.59	4.64	15.0	6.87	1.45	4 3/16	3 3/16
HSS 5 x 3 x 1/2	5	3	0.5	0.500	21.63	6.36	3.0	7.0	16.9	6.76	1.63	9.20	7.37	4.91	1.08	6.34	18.2	10.8	1.19	2 3/4	--
x 3/8	5	3	0.375	0.375	17.27	5.08	5.0	10.3	14.7	5.88	1.70	7.71	6.50	4.33	1.13	5.35	15.6	8.90	1.23	3 5/16	--
x 5/16	5	3	0.3125	0.313	14.83	4.36	6.6	13.0	13.2	5.28	1.74	6.78	5.86	3.91	1.16	4.72	13.8	7.77	1.24	3 5/8	--
x 1/4	5	3	0.25	0.250	12.21	3.59	9.0	17.0	11.3	4.52	1.77	5.70	5.05	3.37	1.19	3.98	11.7	6.47	1.26	3 7/8	--
x 3/16	5	3	0.1875	0.188	9.42	2.78	13.0	23.6	9.08	3.63	1.81	4.50	4.09	2.73	1.21	3.16	9.23	5.06	1.28	4 3/16	2 3/16
HSS 5 x 2-1/2 x 1/4	5	2.5	0.25	0.250	11.36	3.34	7.0	17.0	9.89	3.96	1.72	5.11	3.28	2.62	0.991	3.12	8.36	5.28	1.18	3 7/8	--
x 3/16	5	2.5	0.1875	0.188	8.78	2.59	10.3	23.6	7.99	3.20	1.76	4.05	2.69	2.15	1.02	2.49	6.68	4.16	1.20	4 3/16	--

A1085 Rectangular HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area	Workable Flat	
	h	b	t _{nom}						I	S	r	Z	I	S	r	Z	J	C		Depth	Width
	in	in	in						in ⁴	in ³	in	in ³	in ⁴	in ³	in.	in ³	in ⁴	in ³	ft ² /ft	in	in
HSS 5 x 2-1/2 x 8GA	5	2.5	0.165	0.165	7.81	2.30	12.2	27.3	7.20	2.88	1.77	3.62	2.43	1.94	1.03	2.23	5.99	3.71	1.20	4 1/4	--
HSS 5 x 2 x 3/8	5	2	0.375	0.375	14.72	4.33	2.3	10.3	10.7	4.28	1.57	5.98	2.35	2.35	0.737	3.00	6.82	5.43	1.06	3 5/16	--
x 5/16	5	2	0.3125	0.313	12.70	3.74	3.4	13.0	9.76	3.90	1.62	5.31	2.17	2.17	0.762	2.70	6.24	4.83	1.08	3 5/8	--
x 1/4	5	2	0.25	0.250	10.51	3.09	5.0	17.0	8.48	3.39	1.66	4.51	1.93	1.93	0.790	2.32	5.43	4.10	1.10	3 7/8	--
x 3/16	5	2	0.1875	0.188	8.15	2.40	7.6	23.6	6.90	2.76	1.70	3.59	1.60	1.60	0.816	1.86	4.41	3.25	1.11	4 3/16	--
HSS 4 x 3 x 3/8	4	3	0.375	0.375	14.72	4.33	5.0	7.7	8.23	4.12	1.38	5.36	5.19	3.46	1.09	4.37	11.1	6.93	1.06	2 5/16	--
x 5/16	4	3	0.3125	0.313	12.70	3.74	6.6	9.8	7.46	3.73	1.41	4.75	4.72	3.15	1.12	3.88	9.90	6.08	1.08	2 5/8	--
x 1/4	4	3	0.25	0.250	10.51	3.09	9.0	13.0	6.46	3.23	1.45	4.03	4.11	2.74	1.15	3.30	8.41	5.10	1.10	2 7/8	--
x 3/16	4	3	0.1875	0.188	8.15	2.40	13.0	18.3	5.24	2.62	1.48	3.21	3.35	2.23	1.18	2.63	6.68	4.00	1.11	3 3/16	2 3/16
HSS 4 x 2-1/2 x 3/8	4	2.5	0.375	0.375	13.44	3.95	3.7	7.7	7.00	3.50	1.33	4.68	3.27	2.62	0.910	3.33	7.86	5.57	0.976	2 5/16	--
x 5/16	4	2.5	0.3125	0.313	11.64	3.42	5.0	9.8	6.39	3.20	1.37	4.18	3.01	2.41	0.938	2.99	7.09	4.93	0.994	2 5/8	--
x 1/4	4	2.5	0.25	0.250	9.66	2.84	7.0	13.0	5.58	2.79	1.40	3.56	2.65	2.12	0.966	2.56	6.09	4.16	1.01	2 7/8	--
x 3/16	4	2.5	0.1875	0.188	7.51	2.21	10.3	18.3	4.56	2.28	1.44	2.85	2.18	1.74	0.993	2.05	4.89	3.29	1.03	3 3/16	--
HSS 4 x 2 x 3/8	4	2	0.375	0.375	12.17	3.58	2.3	7.7	5.76	2.88	1.27	4.00	1.84	1.84	0.717	2.39	4.97	4.21	0.893	2 5/16	--
x 5/16	4	2	0.3125	0.313	10.58	3.11	3.4	9.8	5.33	2.67	1.31	3.60	1.72	1.72	0.744	2.17	4.58	3.78	0.910	2 5/8	--
x 1/4	4	2	0.25	0.250	8.81	2.59	5.0	13.0	4.70	2.35	1.35	3.09	1.54	1.54	0.771	1.88	4.01	3.22	0.928	2 7/8	--
x 3/16	4	2	0.1875	0.188	6.87	2.02	7.6	18.3	3.88	1.94	1.39	2.49	1.29	1.29	0.799	1.52	3.27	2.57	0.946	3 3/16	--
x 8GA	4	2	0.165	0.165	6.13	1.80	9.1	21.2	3.52	1.76	1.40	2.24	1.18	1.18	0.810	1.37	2.95	2.30	0.953	3 1/4	--
HSS 4 x 1-1/2 x 1/4	4	1.5	0.25	0.250	7.96	2.34	3.0	13.0	3.82	1.91	1.28	2.62	0.758	1.01	0.569	1.26	2.23	2.28	0.845	2 7/8	--
x 3/16	4	1.5	0.1875	0.188	6.23	1.84	5.0	18.3	3.19	1.60	1.32	2.13	0.651	0.868	0.595	1.04	1.87	1.85	0.863	3 3/16	--
x 8GA	4	1.5	0.165	0.165	5.57	1.64	6.1	21.2	2.91	1.46	1.33	1.92	0.600	0.800	0.605	0.944	1.71	1.67	0.869	3 1/4	--
HSS 3-1/2 x 2-1/2 x 3/8	3.5	2.5	0.375	0.375	12.17	3.58	3.7	6.3	4.90	2.80	1.17	3.74	2.84	2.27	0.891	2.94	6.38	4.78	0.893	--	--
x 5/16	3.5	2.5	0.3125	0.313	10.58	3.11	5.0	8.2	4.51	2.58	1.20	3.36	2.63	2.10	0.920	2.64	5.79	4.24	0.910	2 1/8	--
x 1/4	3.5	2.5	0.25	0.250	8.81	2.59	7.0	11.0	3.97	2.27	1.24	2.88	2.33	1.86	0.948	2.28	4.99	3.60	0.928	2 3/8	--
x 3/16	3.5	2.5	0.1875	0.188	6.87	2.02	10.3	15.6	3.27	1.87	1.27	2.32	1.93	1.54	0.977	1.83	4.02	2.85	0.946	2 11/16	--
x 8GA	3.5	2.5	0.165	0.165	6.13	1.80	12.2	18.2	2.97	1.70	1.28	2.08	1.75	1.40	0.986	1.65	3.62	2.55	0.953	2 3/4	--
HSS 3-1/2 x 2 x 1/4	3.5	2	0.25	0.250	7.96	2.34	5.0	11.0	3.31	1.89	1.19	2.48	1.35	1.35	0.760	1.66	3.31	2.78	0.845	2 3/8	--
x 3/16	3.5	2	0.1875	0.188	6.23	1.84	7.6	15.6	2.75	1.57	1.22	2.01	1.13	1.13	0.784	1.35	2.71	2.23	0.863	2 11/16	--
HSS 3-1/2 x 1-1/2 x 1/4	3.5	1.5	0.25	0.250	7.11	2.09	3.0	11.0	2.65	1.51	1.13	2.07	0.659	0.879	0.562	1.11	1.86	1.97	0.762	2 3/8	--
x 3/16	3.5	1.5	0.1875	0.188	5.59	1.65	5.0	15.6	2.24	1.28	1.17	1.70	0.569	0.759	0.587	0.917	1.57	1.61	0.780	2 11/16	--

A1085 Rectangular HSS Dimensions and Properties

Shape	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area	Workable Flat	
	h	b	t _{nom}						I	S	r	Z	I	S	r	Z	J	C		Depth	Width
	in	in	in						in ⁴	in ³	in	in ³	in ⁴	in ³	in.	in ³	in ⁴	in ³		in	in
HSS 3-1/2 x 1-1/2 x 8GA	3.5	1.5	0.165	0.165	5.01	1.47	6.1	18.2	2.05	1.17	1.18	1.53	0.526	0.701	0.598	0.833	1.43	1.45	0.786	2 3/4	--
HSS 3 x 2-1/2 x 5/16	3	2.5	0.3125	0.313	9.51	2.80	5.0	6.6	3.02	2.01	1.04	2.62	2.26	1.81	0.898	2.30	4.53	3.56	0.827	--	--
x 1/4	3	2.5	0.25	0.250	7.96	2.34	7.0	9.0	2.68	1.79	1.07	2.27	2.01	1.61	0.927	1.99	3.93	3.03	0.845	--	--
x 3/16	3	2.5	0.1875	0.188	6.23	1.84	10.3	13.0	2.23	1.49	1.10	1.84	1.68	1.34	0.956	1.62	3.19	2.42	0.863	2 3/16	--
HSS 3 x 2 x 5/16	3	2	0.3125	0.313	8.45	2.49	3.4	6.6	2.45	1.63	0.992	2.20	1.27	1.27	0.714	1.64	2.97	2.72	0.744	--	--
x 1/4	3	2	0.25	0.250	7.11	2.09	5.0	9.0	2.21	1.47	1.03	1.92	1.15	1.15	0.742	1.44	2.63	2.35	0.762	--	--
x 3/16	3	2	0.1875	0.188	5.59	1.65	7.6	13.0	1.86	1.24	1.06	1.57	0.980	0.980	0.771	1.18	2.17	1.89	0.780	2 3/16	--
x 8GA	3	2	0.165	0.165	5.01	1.47	9.1	15.2	1.70	1.13	1.08	1.42	0.899	0.899	0.782	1.07	1.96	1.70	0.786	2 1/4	--
HSS 3 x 1-1/2 x 1/4	3	1.5	0.25	0.250	6.26	1.84	3.0	9.0	1.74	1.16	0.972	1.58	0.560	0.747	0.552	0.949	1.50	1.66	0.678	--	--
x 3/16	3	1.5	0.1875	0.188	4.96	1.46	5.0	13.0	1.49	0.993	1.01	1.31	0.488	0.651	0.578	0.794	1.27	1.36	0.696	2 3/16	--
x 7GA	3	1.5	0.18	0.180	4.79	1.41	5.3	13.7	1.45	0.967	1.01	1.27	0.476	0.635	0.581	0.770	1.23	1.32	0.698	2 3/16	--
x 8GA	3	1.5	0.165	0.165	4.44	1.31	6.1	15.2	1.37	0.913	1.02	1.19	0.452	0.603	0.587	0.723	1.16	1.23	0.703	2 1/4	--
HSS 3 x 1 x 1/4	3	1	0.25	0.250	5.41	1.59	1.0	9.0	1.26	0.840	0.890	1.23	0.195	0.390	0.350	0.521	0.593	0.971	0.595	--	--
x 3/16	3	1	0.1875	0.188	4.32	1.27	2.3	13.0	1.12	0.747	0.939	1.04	0.178	0.356	0.374	0.452	0.546	0.833	0.613	2 3/16	--
x 8GA	3	1	0.165	0.165	3.88	1.14	3.1	15.2	1.04	0.693	0.955	0.953	0.168	0.336	0.384	0.417	0.511	0.764	0.619	2 1/4	--
HSS 2-1/2 x 2 x 1/4	2.5	2	0.25	0.250	6.26	1.84	5.0	7.0	1.38	1.10	0.866	1.43	0.962	0.962	0.723	1.22	1.98	1.91	0.678	--	--
x 3/16	2.5	2	0.1875	0.188	4.96	1.46	7.6	10.3	1.17	0.936	0.895	1.18	0.825	0.825	0.752	1.01	1.64	1.55	0.696	--	--
x 8GA	2.5	2	0.165	0.165	4.44	1.31	9.1	12.2	1.08	0.864	0.908	1.07	0.759	0.759	0.761	0.919	1.49	1.40	0.703	--	--
HSS 2-1/2 x 1-1/2 x 1/4	2.5	1.5	0.25	0.250	5.41	1.59	3.0	7.0	1.06	0.848	0.816	1.15	0.461	0.615	0.538	0.793	1.14	1.35	0.595	--	--
x 3/16	2.5	1.5	0.1875	0.188	4.32	1.27	5.0	10.3	0.923	0.738	0.853	0.965	0.407	0.543	0.566	0.670	0.977	1.11	0.613	--	--
x 8GA	2.5	1.5	0.165	0.165	3.88	1.14	6.1	12.2	0.853	0.682	0.865	0.881	0.378	0.504	0.576	0.613	0.896	1.01	0.619	--	--
HSS 2-1/2 x 1 x 3/16	2.5	1	0.1875	0.188	3.68	1.08	2.3	10.3	0.671	0.537	0.788	0.748	0.147	0.294	0.369	0.376	0.427	0.680	0.530	--	--
HSS 2-1/4 x 2 x 3/16	2.25	2	0.1875	0.188	4.64	1.37	7.6	9.0	0.901	0.801	0.811	1.01	0.748	0.748	0.739	0.927	1.39	1.38	0.655	--	--
HSS 2 x 1-1/2 x 3/16	2	1.5	0.1875	0.188	3.68	1.08	5.0	7.6	0.515	0.515	0.691	0.671	0.325	0.433	0.549	0.547	0.696	0.868	0.530	--	--
x 8GA	2	1.5	0.165	0.165	3.32	0.976	6.1	9.1	0.481	0.481	0.702	0.616	0.304	0.405	0.558	0.503	0.641	0.791	0.536	--	--
HSS 2 x 1 x 3/16	2	1	0.1875	0.188	3.04	0.896	2.3	7.6	0.360	0.360	0.634	0.501	0.115	0.230	0.358	0.300	0.311	0.528	0.446	--	--
x 8GA	2	1	0.165	0.165	2.76	0.811	3.1	9.1	0.342	0.342	0.649	0.465	0.110	0.220	0.368	0.280	0.294	0.488	0.453	--	--