

HSS

DIMENSIONS AND SECTION PROPERTIES ASTM A1085

HSS: TECHNICAL BROCHURE

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C	Torsional shear constant of cross-section (in. ³)
D	Outside diameter of round HSS (in.)
h	Nominal depth minus 3 times the design wall thickness, t (in.)
I	Moment of inertia of cross-section (in. ⁴)
J	Torsional stiffness constant of cross-section (in. ⁴)
r	Radius of gyration (in.)
S	Elastic section modulus (in. ³)
t	Design wall thickness (in.)
Z	Plastic section modulus (in. ³)

FOREWARD

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DIMENSIONS AND SECTION PROPERTIES OF ROUND HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	D/t	I	S	r	Z	Torsion	
	in.	lb/ft	in. ²		in. ⁴	in. ³	in.	in. ³	J	C
					in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³
HSS20X0.500	0.500	104.23	30.6	40.0	1460	146	6.90	190	2910	291
X0.375	0.375	78.67	23.1	53.3	1110	111	6.94	144	2230	223
HSS18X0.500	0.500	93.54	27.5	36.0	1050	117	6.19	153	2110	234
X0.375	0.375	70.66	20.8	48.0	807	89.6	6.23	117	1610	179
HSS16X0.625	0.625	102.73	30.2	25.6	894	112	5.44	148	1790	223
X0.500	0.500	82.85	24.3	32.0	732	91.5	5.48	120	1460	183
X0.438	0.438	72.87	21.4	36.5	649	81.1	5.50	106	1300	162
X0.375	0.375	62.64	18.4	42.7	562	70.3	5.53	91.6	1120	140
X0.312	0.312	52.32	15.4	51.3	473	59.2	5.55	76.8	946	118
X0.250	0.250	42.09	12.4	64.0	384	48.0	5.57	62.0	767	95.9
HSS14X0.625	0.625	89.36	26.3	22.4	589	84.1	4.73	112	1180	168
X0.500	0.500	72.16	21.2	28.0	484	69.1	4.78	91.2	968	138
X0.375	0.375	54.62	16.1	37.3	373	53.3	4.82	69.6	746	106
X0.312	0.312	45.65	13.4	44.9	314	44.9	4.84	58.5	629	89.7
X0.250	0.250	36.75	10.8	56.0	255	36.5	4.86	47.3	511	72.9
HSS12.75X0.500	0.500	65.48	19.2	25.5	362	56.7	4.33	75.1	723	113
X0.375	0.375	49.61	14.6	34.0	279	43.8	4.38	57.4	559	87.5
X0.250	0.250	33.41	9.82	51.0	192	30.1	4.42	39.1	384	60.1
HSS10.75X0.500	0.500	54.79	16.1	21.5	212	39.4	3.63	52.6	424	78.5
X0.375	0.375	41.59	12.2	28.7	165	30.6	3.67	40.4	329	61.1
X0.250	0.250	28.06	8.25	43.0	114	21.2	3.71	27.6	227	42.3
HSS10X0.625	0.625	62.64	18.4	16.0	203	40.6	3.32	55.0	406	80.6
X0.500	0.500	50.78	14.9	20.0	169	33.8	3.36	45.2	338	67.2
X0.375	0.375	38.58	11.3	26.7	132	26.3	3.41	34.8	263	52.5
X0.312	0.312	32.31	9.50	32.1	112	22.3	3.43	29.3	223	44.5
X0.250	0.250	26.06	7.66	40.0	91.1	18.2	3.45	23.8	182	36.4
X0.188	0.188	19.72	5.80	53.2	69.8	14.0	3.47	18.1	140	27.9



DIMENSIONS AND SECTION PROPERTIES OF ROUND HSS

Shape	Design Wall Thickness, t 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
HSS9.625X0.500	0.500	48.77	14.3	19.2	150	31.1	3.23	41.7	299	61.9
X0.375	0.375	37.08	10.9	25.7	117	24.3	3.27	32.1	233	48.4
X0.312	0.312	31.06	9.13	30.8	99.1	20.6	3.29	27.1	198	41.1
X0.250	0.250	25.06	7.36	38.5	81.0	16.8	3.32	22.0	162	33.6
X0.188	0.188	18.97	5.57	51.2	62.1	12.9	3.34	16.7	124	25.8
HSS8.625X0.625	0.625	53.45	15.7	13.8	126	29.3	2.84	40.1	253	58.0
X0.500	0.500	43.43	12.8	17.2	106	24.5	2.88	33.0	211	48.7
X0.375	0.375	33.07	9.72	23.0	82.9	19.2	2.92	25.5	166	38.3
X0.322	0.322	28.58	8.40	26.8	72.5	16.8	2.94	22.2	145	33.5
X0.250	0.250	22.38	6.58	34.5	57.7	13.4	2.96	17.5	115	26.7
X0.188	0.188	16.96	4.98	45.9	44.4	10.3	2.98	13.4	88.7	20.6
HSS7.625X0.375	0.375	29.06	8.54	20.3	56.3	14.8	2.57	19.7	113	29.4
0.328	0.328	25.59	7.52	23.2	50.1	13.2	2.58	17.5	100	26.2
HSS7.5X0.500	0.500	37.42	11.0	15.0	67.7	18.1	2.48	24.5	135	35.8
X0.375	0.375	28.56	8.39	20.0	53.4	14.2	2.52	19.1	107	28.4
X0.312	0.312	23.97	7.05	24.0	45.6	12.2	2.54	16.1	91.2	24.2
X0.250	0.250	19.38	5.69	30.0	37.5	9.99	2.56	13.1	74.9	19.9
X0.188	0.188	14.70	4.32	39.9	28.9	7.70	2.59	10.1	57.8	15.4
HSS7X0.500	0.500	34.74	10.2	14.0	54.2	15.5	2.30	21.2	108	30.7
X0.375	0.375	26.56	7.80	18.7	43.0	12.3	2.35	16.5	85.9	24.4
X0.312	0.312	22.31	6.56	22.4	36.7	10.5	2.37	14.0	73.5	20.9
X0.250	0.250	18.04	5.30	28.0	30.2	8.64	2.39	11.4	60.5	17.2
X0.188	0.188	13.69	4.02	37.2	23.4	6.67	2.41	8.73	46.7	13.3
HSS6.875X0.500	0.500	34.07	10.0	13.8	51.2	14.9	2.26	20.4	102	29.5
X0.375	0.375	26.06	7.66	18.3	40.6	11.8	2.30	15.9	81.2	23.5
X0.312	0.312	21.89	6.43	22.0	34.7	10.1	2.32	13.4	69.4	20.1
X0.250	0.250	17.71	5.20	27.5	28.6	8.32	2.34	11.0	57.2	16.6
X0.188	0.188	13.44	3.95	36.6	22.1	6.43	2.37	8.41	44.2	12.8



DIMENSIONS AND SECTION PROPERTIES OF ROUND HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	D/t	I	S	r	Z	Torsion	
	in.	lb/ft	in. ²		in. ⁴	in. ³	in.	in. ³	J	C
HSS6.625X0.500	0.500	32.74	9.62	13.2	45.4	13.7	2.17	18.8	90.8	27.1
X0.432	0.432	28.60	8.40	15.3	40.5	12.2	2.19	16.6	81.0	24.2
X0.375	0.375	25.06	7.36	17.7	36.1	10.9	2.21	14.7	72.2	21.6
X0.312	0.312	21.06	6.19	21.2	30.9	9.33	2.23	12.4	61.8	18.6
X0.280	0.280	18.99	5.58	23.7	28.1	8.50	2.25	11.3	56.3	16.9
X0.250	0.250	17.04	5.01	26.5	25.5	7.69	2.26	10.2	50.9	15.3
X0.188	0.188	12.94	3.80	35.2	19.7	5.95	2.28	7.79	39.4	11.9
HSS6X0.500	0.500	29.40	8.64	12.0	32.9	11.0	1.95	15.2	65.9	21.6
X0.375	0.375	22.55	6.63	16.0	26.3	8.78	1.99	11.9	52.7	17.4
X0.312	0.312	18.97	5.58	19.2	22.6	7.54	2.01	10.1	45.2	15.0
X0.280	0.280	17.12	5.03	21.4	20.6	6.88	2.02	9.17	41.3	13.7
X0.250	0.250	15.37	4.52	24.0	18.7	6.23	2.03	8.27	37.4	12.4
X0.188	0.188	11.68	3.43	31.9	14.5	4.84	2.06	6.35	29.0	9.66
HSS5.563X0.500	0.500	27.06	7.95	11.1	25.7	9.25	1.80	12.9	51.5	18.2
X0.375	0.375	20.80	6.11	14.8	20.7	7.43	1.84	10.1	41.3	14.7
X0.258	0.258	14.63	4.30	21.6	15.2	5.45	1.88	7.27	30.3	10.9
X0.188	0.188	10.80	3.17	29.6	11.5	4.13	1.90	5.43	23.0	8.24
HSS5.5X0.500	0.500	26.73	7.85	11.0	24.8	9.01	1.78	12.5	49.6	17.7
X0.375	0.375	20.55	6.04	14.7	19.9	7.25	1.82	9.87	39.9	14.4
X0.258	0.258	14.46	4.25	21.3	14.6	5.32	1.86	7.10	29.3	10.6
HSS5X0.500	0.500	24.05	7.07	10.0	18.1	7.25	1.60	10.2	36.2	14.2
X0.375	0.375	18.54	5.45	13.3	14.7	5.87	1.64	8.04	29.3	11.6
X0.312	0.312	15.64	4.6	16.0	12.7	5.07	1.66	6.87	25.4	10.1
X0.258	0.258	13.08	3.84	19.4	10.8	4.33	1.68	5.81	21.7	8.62
X0.250	0.250	12.69	3.73	20.0	10.6	4.22	1.68	5.65	21.1	8.40
X0.188	0.188	9.67	2.84	26.6	8.24	3.30	1.70	4.36	16.5	6.57



DIMENSIONS AND SECTION PROPERTIES OF ROUND HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	D/t	I	S	r	Z	Torsion	
	in.	lb/ft	in. ²		in. ⁴	in. ³	in.	in. ³	J	C
									in. ⁴	in. ³
HSS4.5X0.375	0.375	16.54	4.86	12.0	10.4	4.63	1.46	6.40	20.8	9.13
X0.337	0.337	15.00	4.41	13.4	9.61	4.27	1.48	5.85	19.2	8.45
X0.237	0.237	10.80	3.17	19.0	7.23	3.21	1.51	4.31	14.5	6.39
X0.188	0.188	8.67	2.55	23.9	5.93	2.64	1.53	3.50	11.9	5.25
HSS4X0.313	0.313	12.34	3.63	12.8	6.21	3.10	1.31	4.27	12.4	6.13
X0.250	0.250	10.02	2.95	16.0	5.20	2.60	1.33	3.52	10.4	5.16
X0.237	0.237	9.53	2.8	16.9	4.98	2.49	1.33	3.36	10.0	4.94
X0.226	0.226	9.12	2.68	17.7	4.79	2.39	1.34	3.22	9.58	4.76
X0.220	0.220	8.89	2.61	18.2	4.68	2.34	1.34	3.15	9.36	4.65
X0.188	0.188	7.66	2.25	21.3	4.10	2.05	1.35	2.73	8.20	4.08
HSS3.5X0.313	0.313	10.66	3.13	11.2	4.02	2.30	1.13	3.19	8.03	4.52
X0.300	0.300	10.26	3.02	11.7	3.89	2.23	1.14	3.08	7.79	4.38
X0.250	0.250	8.69	2.55	14.0	3.39	1.94	1.15	2.65	6.78	3.83
X0.216	0.216	7.58	2.23	16.2	3.02	1.72	1.16	2.33	6.03	3.42
X0.203	0.203	7.15	2.10	17.2	2.87	1.64	1.17	2.21	5.74	3.26
X0.188	0.188	6.66	1.96	18.6	2.69	1.54	1.17	2.06	5.38	3.06
HSS3X0.250	0.250	7.35	2.16	12.0	2.06	1.37	0.976	1.90	4.12	2.71
X0.216	0.216	6.43	1.89	13.9	1.84	1.23	0.987	1.68	3.68	2.43
X0.203	0.203	6.07	1.78	14.8	1.75	1.17	0.991	1.59	3.51	2.32
X0.188	0.188	5.65	1.66	16.0	1.65	1.10	1.00	1.49	3.30	2.18
X0.152	0.152	4.63	1.36	19.7	1.38	0.922	1.01	1.23	2.77	1.83
HSS2.875X0.250	0.250	7.02	2.06	11.5	1.79	1.25	0.932	1.73	3.58	2.45
X0.203	0.203	5.80	1.70	14.2	1.53	1.06	0.947	1.45	3.06	2.11
X0.188	0.188	5.40	1.59	15.3	1.44	1.00	0.952	1.36	2.88	1.99
HSS2.5X0.250	0.250	6.01	1.77	10.0	1.13	0.906	0.800	1.27	2.26	1.77
X0.188	0.188	4.65	1.37	13.3	0.918	0.735	0.820	1.01	1.84	1.45
HSS2.375X0.250	0.250	5.68	1.67	9.50	0.955	0.804	0.756	1.13	1.91	1.57
X0.218	0.218	5.03	1.48	10.9	0.868	0.731	0.766	1.02	1.74	1.44
X0.188	0.188	4.40	1.29	12.6	0.778	0.655	0.776	0.901	1.56	1.29
X0.154	0.154	3.66	1.07	15.4	0.666	0.561	0.787	0.761	1.33	1.11
HSS1.9X0.188	0.188	3.44	1.01	10.1	0.375	0.395	0.609	0.553	0.750	0.773



DIMENSIONS AND SECTION PROPERTIES OF SQUARE HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	I	S	r	Z	Torsion		Surface Area
	in.	lb/ft	in. ²							J	C	
										in. ⁴	in. ³	
HSS22X22X7/8	0.875	244.88	72.0	21.5	21.5	5280	480	8.56	565	8420	778	7.08
X3/4	0.750	212.00	62.3	25.7	25.7	4630	421	8.62	492	7330	676	7.12
HSS20X20X7/8	0.875	221.06	65.0	19.3	19.3	3900	390	7.75	461	6260	638	6.42
X3/4	0.750	191.58	56.3	23.1	23.1	3430	343	7.81	403	5460	554	6.45
X5/8	0.625	161.40	47.4	28.4	28.4	2940	294	7.88	342	4620	468	6.49
X1/2	0.500	130.52	38.4	36.4	36.4	2410	241	7.92	279	3760	380	6.52
HSS18X18X7/8	0.875	197.24	58.0	17.0	17.0	2780	309	6.92	368	4500	511	5.75
X3/4	0.750	171.16	50.3	20.4	20.4	2460	273	6.99	322	3930	445	5.79
X5/8	0.625	144.39	42.4	25.2	25.2	2110	234	7.05	274	3340	376	5.82
X1/2	0.500	116.91	34.4	32.4	32.4	1740	193	7.11	224	2720	306	5.86
HSS16X16X7/8	0.875	173.43	51.0	14.7	14.7	1900	238	6.10	285	3100	398	5.08
X3/4	0.750	150.75	44.3	17.7	17.7	1690	211	6.18	250	2720	347	5.12
X5/8	0.625	127.37	37.4	22.0	22.0	1450	181	6.23	214	2320	295	5.15
X1/2	0.500	103.30	30.4	28.4	28.4	1200	150	6.28	175	1890	240	5.19
X3/8	0.375	78.52	23.1	39.5	39.5	931	116	6.35	134	1450	183	5.23
X5/16	0.313	65.87	19.4	47.9	47.9	790	98.8	6.38	114	1220	154	5.24
HSS14X14X7/8	0.875	149.61	44.0	12.4	12.4	1230	176	5.29	213	2030	299	4.42
X3/4	0.750	130.33	38.3	15.1	15.1	1100	157	5.36	188	1790	262	4.45
X5/8	0.625	110.36	32.4	18.8	18.8	952	136	5.42	161	1530	223	4.49
X1/2	0.500	89.68	26.4	24.4	24.4	791	113	5.47	132	1250	182	4.52
X3/8	0.375	68.31	20.1	34.1	34.1	615	87.9	5.53	102	960	139	4.56
X5/16	0.313	57.36	16.9	41.5	41.5	523	74.7	5.56	86.2	810	117	4.58
HSS12X12X3/4	0.750	109.91	32.3	12.4	12.4	666	111	4.54	134	1100	188	3.79
X5/8	0.625	93.34	27.4	15.6	15.6	580	96.7	4.60	116	943	161	3.82
X1/2	0.500	76.07	22.4	20.4	20.4	486	81.0	4.66	95.4	777	132	3.86
X3/8	0.375	58.10	17.1	28.8	28.8	380	63.3	4.71	73.9	599	101	3.89
X5/16	0.313	48.86	14.4	35.1	35.1	324	54.0	4.74	62.6	507	85.4	3.91
X1/4	0.250	39.43	11.6	44.8	44.8	265	44.2	4.78	50.8	410	69.0	3.93
X3/16	0.188	29.84	8.79	60.6	60.6	203	33.8	4.81	38.8	313	52.4	3.95



DIMENSIONS AND SECTION PROPERTIES OF SQUARE HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	I	S	r	Z	Torsion		Surface Area
	in.	lb/ft	in. ²							J	C	
HSS10X10X3/4	0.750	89.50	26.3	9.73	9.7	364	72.8	3.72	89.4	610	127	3.12
X5/8	0.625	76.33	22.4	12.4	12.4	321	64.2	3.79	77.6	529	109	3.15
X1/2	0.500	62.46	18.4	16.4	16.4	271	54.2	3.84	64.6	439	89.8	3.19
X3/8	0.375	47.90	14.1	23.5	23.5	214	42.8	3.90	50.4	341	69.3	3.23
X5/16	0.313	40.35	11.9	28.7	28.7	184	36.8	3.93	42.8	289	58.6	3.24
X1/4	0.250	32.63	9.59	36.8	36.8	151	30.2	3.97	34.9	235	47.5	3.26
X3/16	0.188	24.73	7.29	50.0	50.0	116	23.2	3.99	26.7	180	36.2	3.28
HSS9X9X5/8	0.625	67.82	19.9	10.8	10.8	227	50.4	3.38	61.5	377	86.7	2.82
X1/2	0.500	55.66	16.4	14.4	14.4	193	42.9	3.43	51.4	315	71.8	2.86
X3/8	0.375	42.79	12.6	20.8	20.8	154	34.2	3.50	40.3	246	55.6	2.89
X5/16	0.313	36.10	10.6	25.6	25.6	132	29.3	3.53	34.3	209	47.1	2.91
X1/4	0.250	29.23	8.59	32.8	32.8	109	24.2	3.56	28.0	170	38.2	2.93
X3/16	0.188	22.18	6.54	44.7	44.7	84.0	18.7	3.58	21.5	130	29.2	2.95
HSS8X8X5/8	0.625	59.32	17.4	9.20	9.20	153	38.2	2.97	47.2	258	67.0	2.49
X1/2	0.500	48.85	14.4	12.4	12.4	131	32.8	3.02	39.7	217	55.8	2.52
X3/8	0.375	37.69	11.1	18.1	18.1	106	26.5	3.09	31.3	170	43.4	2.56
X5/16	0.313	31.84	9.37	22.4	22.4	91.0	22.8	3.12	26.8	145	36.9	2.58
X1/4	0.250	25.82	7.59	28.8	28.8	75.2	18.8	3.15	21.9	118	30.0	2.60
X3/16	0.188	19.63	5.78	39.4	39.4	58.4	14.6	3.18	16.9	90.8	22.9	2.61
HSS7X7X5/8	0.625	50.81	14.9	7.60	7.60	97.6	27.9	2.56	34.8	166	49.9	2.15
X1/2	0.500	42.05	12.4	10.4	10.4	84.7	24.2	2.61	29.6	141	41.8	2.19
X3/8	0.375	32.58	9.58	15.5	15.5	68.7	19.6	2.68	23.5	112	32.7	2.23
X5/16	0.313	27.59	8.12	19.2	19.2	59.6	17.0	2.71	20.1	95.7	27.9	2.24
X1/4	0.250	22.42	6.59	24.8	24.8	49.4	14.1	2.74	16.5	78.3	22.7	2.26
X3/16	0.188	17.08	5.03	34.0	34.0	38.6	11.0	2.77	12.8	60.3	17.4	2.28



DIMENSIONS AND SECTION PROPERTIES OF SQUARE HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	I	S	r	Z	Torsion		Surface Area
	in.	lb/ft	in. ²							J	C	
HSS6X6X5/8	0.625	42.30	12.4	6.00	6.00	57.4	19.1	2.15	24.3	99.5	35.2	1.82
X1/2	0.500	35.24	10.4	8.40	8.40	50.5	16.8	2.20	20.9	85.6	29.8	1.86
X3/8	0.375	27.48	8.08	12.8	12.8	41.6	13.9	2.27	16.8	68.5	23.5	1.89
X5/16	0.313	23.34	6.87	16.0	16.0	36.3	12.1	2.30	14.5	59.0	20.1	1.91
X1/4	0.250	19.02	5.59	20.8	20.8	30.3	10.1	2.33	11.9	48.5	16.5	1.93
X3/16	0.188	14.53	4.28	28.7	28.7	23.8	7.93	2.36	9.26	37.5	12.7	1.95
HSS5-1/2X5-1/2X3/8	0.375	24.93	7.33	11.5	11.5	31.3	11.4	2.07	13.8	51.9	19.5	1.73
X5/16	0.313	21.21	6.24	14.4	14.4	27.4	10.0	2.10	12.0	44.8	16.7	1.74
X1/4	0.250	17.32	5.09	18.8	18.8	23.0	8.36	2.13	9.91	37.0	13.7	1.76
X3/16	0.188	13.25	3.90	26.1	26.1	18.1	6.58	2.15	7.71	28.7	10.6	1.78
HSS5X5X1/2	0.500	28.43	8.36	6.40	6.40	27.1	10.8	1.80	13.7	46.8	19.8	1.52
X3/8	0.375	22.37	6.58	10.1	10.1	22.8	9.12	1.86	11.2	38.2	15.8	1.56
X5/16	0.313	19.08	5.62	12.8	12.8	20.1	8.04	1.89	9.71	33.1	13.6	1.58
X1/4	0.250	15.62	4.59	16.8	16.8	16.9	6.76	1.92	8.07	27.4	11.2	1.60
X3/16	0.188	11.97	3.53	23.4	23.4	13.4	5.36	1.95	6.31	21.4	8.68	1.61
HSS4-1/2X4-1/2X1/2	0.500	25.03	7.36	5.40	5.40	18.7	8.31	1.59	10.7	32.7	15.5	1.36
X3/8	0.375	19.82	5.83	8.80	8.80	16.0	7.11	1.66	8.81	27.1	12.6	1.39
X5/16	0.313	16.96	4.99	11.2	11.2	14.2	6.31	1.69	7.69	23.6	10.9	1.41
X1/4	0.250	13.91	4.09	14.8	14.8	12.1	5.38	1.72	6.43	19.7	8.97	1.43
X3/16	0.188	10.70	3.15	20.7	20.7	9.62	4.28	1.75	5.05	15.4	6.97	1.45
HSS4X4X1/2	0.500	21.63	6.36	4.40	4.40	12.3	6.15	1.39	8.02	21.8	11.8	1.19
X3/8	0.375	17.27	5.08	7.47	7.47	10.7	5.35	1.45	6.72	18.4	9.65	1.23
X5/16	0.313	14.83	4.36	9.58	9.58	9.59	4.80	1.48	5.91	16.1	8.39	1.24
X1/4	0.250	12.21	3.59	12.8	12.8	8.22	4.11	1.51	4.97	13.5	6.97	1.26
X3/16	0.188	9.42	2.78	18.1	18.1	6.61	3.30	1.54	3.92	10.7	5.44	1.28
HSS3-1/2X3-1/2X3/8	0.375	14.72	4.33	6.13	6.13	6.74	3.85	1.25	4.91	11.7	7.12	1.06
X5/16	0.313	12.70	3.74	7.98	7.98	6.11	3.49	1.28	4.36	10.4	6.24	1.08
X1/4	0.250	10.51	3.09	10.8	10.8	5.29	3.02	1.31	3.69	8.82	5.22	1.10
X3/16	0.188	8.15	2.40	15.4	15.4	4.30	2.46	1.34	2.94	7.00	4.10	1.11



DIMENSIONS AND SECTION PROPERTIES OF SQUARE HSS

Shape	Design Wall Thickness, t in.	Nominal Wt lb/ft	Area, A in. ²	b/t	h/t	I in. ⁴	S in. ³	r in.	Z in. ³	Torsion		Surface Area ft ² /ft
										J in. ⁴	C in. ³	
HSS3X3X3/8	0.375	12.17	3.58	4.80	4.80	3.89	2.59	1.04	3.38	6.89	4.96	0.893
X5/16	0.313	10.58	3.11	6.38	6.38	3.59	2.39	1.07	3.04	6.22	4.40	0.910
X1/4	0.250	8.81	2.59	8.80	8.80	3.16	2.11	1.10	2.61	5.35	3.72	0.928
X3/16	0.188	6.87	2.02	12.8	12.8	2.61	1.74	1.14	2.10	4.29	2.95	0.946
HSS2-1/2X2-1/2X5/16	0.313	8.45	2.49	4.79	4.79	1.88	1.50	0.869	1.96	3.33	2.88	0.744
X1/4	0.250	7.11	2.09	6.80	6.80	1.69	1.35	0.899	1.71	2.92	2.47	0.762
X3/16	0.188	5.59	1.65	10.1	10.1	1.43	1.14	0.931	1.40	2.39	1.98	0.780
HSS2-1/4X2-1/4X1/4	0.250	6.26	1.84	5.80	5.80	1.17	1.04	0.797	1.33	2.05	1.94	0.678
X3/16	0.188	4.96	1.46	8.77	8.77	1.00	0.889	0.828	1.10	1.70	1.57	0.696
HSS2X2X1/4	0.250	5.41	1.59	4.80	4.80	0.769	0.769	0.695	1.00	1.36	1.47	0.595
X3/16	0.188	4.32	1.27	7.44	7.44	0.670	0.670	0.726	0.841	1.15	1.21	0.613



DIMENSIONS AND SECTION PROPERTIES OF RECTANGULAR HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area
	in.	lb/ft	in. ²			l	S	r	Z	l	S	r	Z	J	C	
						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
HSS24X12X3/4	0.750	171.16	50.3	12.4	28.4	3650	304	8.52	382	1240	207	4.97	235	3030	391	5.79
X5/8	0.625	144.39	42.4	15.6	34.8	3130	261	8.59	325	1070	178	5.02	201	2590	331	5.82
X1/2	0.500	116.91	34.4	20.4	44.4	2580	215	8.66	266	883	147	5.07	164	2120	270	5.86
HSS20X12X3/4	0.750	150.75	44.3	12.4	23.1	2320	232	7.24	287	1050	175	4.87	202	2360	323	5.12
X5/8	0.625	127.37	37.4	15.6	28.4	2000	200	7.31	245	904	151	4.92	172	2010	275	5.15
X1/2	0.500	103.30	30.4	20.4	36.4	1650	165	7.37	201	750	125	4.97	141	1650	224	5.19
X3/8	0.375	78.52	23.1	28.8	50.1	1280	128	7.44	154	583	97.2	5.02	109	1270	171	5.23
X5/16	0.313	65.87	19.4	35.1	60.7	1080	108	7.46	130	495	82.5	5.05	91.9	1070	144	5.24
HSS20X8X5/8	0.625	110.36	32.4	9.20	28.4	1530	153	6.87	197	358	89.5	3.32	103	973	178	4.49
X1/2	0.500	89.68	26.4	12.4	36.4	1270	127	6.94	162	300	75.0	3.37	84.7	806	146	4.52
X3/8	0.375	68.31	20.1	18.1	50.1	988	98.8	7.01	125	236	59.0	3.43	65.6	625	112	4.56
X5/16	0.313	57.36	16.9	22.4	60.7	840	84.0	7.05	106	202	50.5	3.46	55.6	530	94.6	4.58
HSS20X4X1/2	0.500	76.07	22.4	4.40	36.4	889	88.9	6.30	123	61.6	30.8	1.66	36.0	205	67.8	3.86
X3/8	0.375	58.10	17.1	7.47	50.1	699	69.9	6.39	95.3	50.3	25.2	1.72	28.5	165	53.2	3.89
X5/16	0.313	48.86	14.4	9.58	60.7	597	59.7	6.44	80.9	43.7	21.8	1.74	24.4	143	45.3	3.91
X1/4	0.250	39.43	11.6	12.8	76.8	488	48.8	6.49	65.7	36.4	18.2	1.77	20.0	118	37.0	3.93
HSS18X6X5/8	0.625	93.34	27.4	6.00	25.2	977	109	5.97	144	166	55.3	2.46	64.6	489	116	3.82
X1/2	0.500	76.07	22.4	8.40	32.4	818	90.9	6.04	119	142	47.3	2.52	53.9	410	95.8	3.86
X3/8	0.375	58.10	17.1	12.8	44.8	641	71.2	6.12	92.2	113	37.7	2.57	42.1	322	74.2	3.89
X5/16	0.313	48.86	14.4	16.0	54.3	547	60.8	6.16	78.2	97.1	32.4	2.60	35.8	275	62.8	3.91
X1/4	0.250	39.43	11.6	20.8	68.8	447	49.7	6.21	63.5	80.0	26.7	2.63	29.2	224	51.0	3.93
HSS16X12X3/4	0.750	130.33	38.3	12.4	17.7	1340	168	5.91	205	856	143	4.73	168	1710	256	4.45
X5/8	0.625	110.36	32.4	15.6	22.0	1160	145	5.98	175	742	124	4.79	144	1460	218	4.49
X1/2	0.500	89.68	26.4	20.4	28.4	962	120	6.04	144	618	103	4.84	118	1200	178	4.52
X3/8	0.375	68.31	20.1	28.8	39.5	748	93.5	6.10	111	482	80.3	4.90	91.3	922	136	4.56
X5/16	0.313	57.36	16.9	35.1	47.9	636	79.5	6.13	93.9	410	68.3	4.93	77.3	779	115	4.58



DIMENSIONS AND SECTION PROPERTIES OF RECTANGULAR HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area
						I	S	r	Z	I	S	r	Z	J	C	
	in.	lb/ft	in. ²	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in. ⁴	in. ³	ft ² /ft				
HSS16X8X5/8	0.625	93.34	27.4	9.20	22.0	863	108	5.61	137	290	72.5	3.25	84.1	723	141	3.82
X1/2	0.500	76.07	22.4	12.4	28.4	722	90.2	5.68	113	244	61.0	3.30	69.7	599	116	3.86
X3/8	0.375	58.10	17.1	18.1	39.5	565	70.6	5.75	87.6	193	48.2	3.36	54.2	465	89.2	3.89
X5/16	0.313	48.86	14.4	22.4	47.9	482	60.2	5.79	74.3	165	41.2	3.39	46.0	395	75.4	3.91
X1/4	0.250	39.43	11.6	28.8	60.8	393	49.1	5.82	60.3	135	33.8	3.41	37.4	321	61.0	3.93
HSS16X4X5/8	0.625	76.33	22.4	2.80	22.0	568	71.0	5.04	98.5	56.4	28.2	1.59	34.2	182	63.9	3.15
X1/2	0.500	62.46	18.4	4.40	28.4	481	60.1	5.11	82.2	49.3	24.6	1.64	29.0	157	53.8	3.19
X3/8	0.375	47.90	14.1	7.47	39.5	382	47.8	5.21	64.2	40.4	20.2	1.69	23.0	127	42.3	3.23
X5/16	0.313	40.35	11.9	9.58	47.9	328	41.0	5.25	54.6	35.2	17.6	1.72	19.8	110	36.1	3.24
X1/4	0.250	32.63	9.59	12.8	60.8	269	33.6	5.30	44.5	29.3	14.6	1.75	16.2	90.6	29.5	3.26
X3/16	0.188	24.73	7.29	18.1	81.9	208	26.0	5.34	34.1	23.0	11.5	1.78	12.5	70.3	22.6	3.28
HSS14X10X5/8	0.625	93.34	27.4	12.4	18.8	728	104	5.15	127	431	86.2	3.97	101	885	156	3.82
X1/2	0.500	76.07	22.4	16.4	24.4	608	86.9	5.21	105	361	72.2	4.01	83.6	730	128	3.86
X3/8	0.375	58.10	17.1	23.5	34.1	476	68.0	5.28	81.5	284	56.8	4.08	64.8	564	98.2	3.89
X5/16	0.313	48.86	14.4	28.7	41.5	406	58.0	5.31	69.1	242	48.4	4.10	55.0	478	82.9	3.91
X1/4	0.250	39.43	11.6	36.8	52.8	331	47.3	5.34	56.0	198	39.6	4.13	44.6	387	67.0	3.93
HSS14X6X5/8	0.625	76.33	22.4	6.00	18.8	504	72.0	4.74	94.0	130	43.3	2.41	51.2	352	88.9	3.15
X1/2	0.500	62.46	18.4	8.40	24.4	426	60.9	4.81	78.3	111	37.0	2.46	42.9	296	73.8	3.19
X3/8	0.375	47.90	14.1	12.8	34.1	337	48.1	4.89	61.1	89.1	29.7	2.51	33.6	233	57.3	3.23
X5/16	0.313	40.35	11.9	16.0	41.5	289	41.3	4.93	51.9	76.9	25.6	2.54	28.7	199	48.6	3.24
X1/4	0.250	32.63	9.59	20.8	52.8	237	33.9	4.97	42.3	63.4	21.1	2.57	23.4	162	39.5	3.26
X3/16	0.188	24.73	7.29	28.7	71.3	182	26.0	5.00	32.4	49.2	16.4	2.60	18.0	125	30.2	3.28
HSS14X4X5/8	0.625	67.82	19.9	2.80	18.8	392	56.0	4.44	77.3	49.2	24.6	1.57	30.0	154	55.5	2.82
X1/2	0.500	55.66	16.4	4.40	24.4	335	47.9	4.52	64.8	43.1	21.6	1.62	25.5	134	46.8	2.86
X3/8	0.375	42.79	12.6	7.47	34.1	267	38.1	4.60	50.8	35.4	17.7	1.68	20.3	108	36.8	2.89
X5/16	0.313	36.10	10.6	9.58	41.5	230	32.9	4.66	43.4	30.9	15.4	1.71	17.4	93.2	31.5	2.91
X1/4	0.250	29.23	8.59	12.8	52.8	189	27.0	4.69	35.4	25.8	12.9	1.73	14.3	77.0	25.7	2.93
X3/16	0.188	22.18	6.54	18.1	71.3	147	21.0	4.74	27.2	20.3	10.2	1.76	11.1	59.8	19.8	2.95



DIMENSIONS AND SECTION PROPERTIES OF RECTANGULAR HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area
						I	S	r	Z	I	S	r	Z	J	C	
	in.	lb/ft	in. ²	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in. ⁴	in. ³	in. ³	in. ⁴	in. ³	ft ² /ft	
HSS12X10X1/2	0.500	69.27	20.4	16.4	20.4	419	69.8	4.53	83.9	316	63.2	3.94	74.1	581	109	3.52
X3/8	0.375	53.00	15.6	23.5	28.8	330	55.0	4.60	65.2	249	49.8	4.00	57.6	450	83.7	3.56
X5/16	0.313	44.60	13.1	28.7	35.1	282	47.0	4.64	55.3	213	42.6	4.03	48.9	381	70.8	3.58
X1/4	0.250	36.03	10.6	36.8	44.8	230	38.3	4.66	44.9	174	34.8	4.05	39.7	309	57.2	3.60
HSS12X8X5/8	0.625	76.33	22.4	9.20	15.6	419	69.8	4.32	87.1	221	55.2	3.14	65.6	481	104	3.15
X1/2	0.500	62.46	18.4	12.4	20.4	353	58.8	4.38	72.4	188	47.0	3.20	54.7	401	85.8	3.19
X3/8	0.375	47.90	14.1	18.1	28.8	279	46.5	4.45	56.5	149	37.2	3.25	42.7	312	66.3	3.23
X5/16	0.313	40.35	11.9	22.4	35.1	239	39.8	4.48	48.0	128	32.0	3.28	36.4	265	56.1	3.24
X1/4	0.250	32.63	9.59	28.8	44.8	196	32.7	4.52	39.1	105	26.2	3.31	29.6	216	45.5	3.26
X3/16	0.188	24.73	7.29	39.4	60.6	151	25.2	4.55	29.9	81.3	20.3	3.34	22.7	165	34.7	3.28
HSS12X6X5/8	0.625	67.82	19.9	6.00	15.6	338	56.3	4.12	72.9	112	37.3	2.37	44.5	286	75.5	2.82
X1/2	0.500	55.66	16.4	8.40	20.4	287	47.8	4.18	60.9	96.0	32.0	2.42	37.4	241	62.8	2.86
X3/8	0.375	42.79	12.6	12.8	28.8	228	38.0	4.25	47.7	77.3	25.8	2.48	29.4	190	48.8	2.89
X5/16	0.313	36.10	10.6	16.0	35.1	196	32.7	4.30	40.7	66.7	22.2	2.51	25.1	162	41.5	2.91
X1/4	0.250	29.23	8.59	20.8	44.8	161	26.8	4.33	33.2	55.2	18.4	2.53	20.6	132	33.7	2.93
X3/16	0.188	22.18	6.54	28.7	60.6	125	20.8	4.37	25.5	42.9	14.3	2.56	15.8	102	25.8	2.95
HSS12X4X5/8	0.625	59.32	17.4	2.80	15.6	257	42.8	3.84	58.6	42.0	21.0	1.55	25.8	127	47.0	2.49
X1/2	0.500	48.85	14.4	4.40	20.4	221	36.8	3.92	49.4	37.0	18.5	1.60	22.0	110	39.8	2.52
X3/8	0.375	37.69	11.1	7.47	28.8	178	29.7	4.00	39.0	30.5	15.2	1.66	17.6	89.0	31.4	2.56
X5/16	0.313	31.84	9.37	9.58	35.1	153	25.5	4.04	33.4	26.7	13.4	1.69	15.1	77.0	26.9	2.58
X1/4	0.250	25.82	7.59	12.8	44.8	127	21.2	4.09	27.3	22.3	11.2	1.71	12.5	63.6	22.0	2.60
X3/16	0.188	19.63	5.8	18.1	60.6	98.4	16.4	4.12	21.0	17.5	8.75	1.74	9.66	49.4	16.9	2.61
HSS12X3-1/2X3/8	0.375	36.41	10.7	6.13	28.8	165	27.5	3.93	36.8	22.4	12.8	1.45	14.9	68.3	27.0	2.48
X5/16	0.313	30.78	9.06	7.98	35.1	143	23.8	3.97	31.6	19.7	11.3	1.47	12.8	59.4	23.2	2.49
HSS12X3X5/16	0.313	29.72	8.75	6.38	35.1	132	22.0	3.88	29.7	13.8	9.20	1.26	10.6	43.7	19.5	2.41
X1/4	0.250	24.12	7.09	8.80	44.8	109	18.2	3.92	24.4	11.7	7.80	1.28	8.80	36.5	16.1	2.43
X3/16	0.188	18.35	5.41	12.8	60.6	85	14.2	3.96	18.8	9.30	6.20	1.31	6.86	28.7	12.5	2.45



DIMENSIONS AND SECTION PROPERTIES OF RECTANGULAR HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area
						I	S	r	Z	I	S	r	Z	J	C	
	in.	lb/ft	in. ²	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in. ⁴	in. ³	ft ² /ft				
HSS12X2X5/16	0.313	27.59	8.12	3.19	35.1	111	18.5	3.70	26.1	5.33	5.33	0.810	6.39	18.4	12.2	2.24
X1/4	0.250	22.42	6.59	4.80	44.8	92.2	15.4	3.74	21.4	4.62	4.62	0.837	5.38	15.9	10.2	2.26
X3/16	0.188	17.08	5.03	7.44	60.6	72.2	12.0	3.79	16.6	3.77	3.77	0.866	4.25	12.8	8.02	2.28
HSS10X8X5/8	0.625	67.82	19.9	9.20	12.4	266	53.2	3.66	65.9	187	46.8	3.07	56.4	367	85.5	2.82
X1/2	0.500	55.66	16.4	12.4	16.4	226	45.2	3.71	55.1	160	40.0	3.12	47.2	306	70.8	2.86
X3/8	0.375	42.79	12.6	18.1	23.5	180	36.0	3.78	43.1	127	31.8	3.17	37.0	239	54.8	2.89
X5/16	0.313	36.10	10.6	22.4	28.7	154	30.8	3.81	36.8	110	27.5	3.22	31.6	203	46.5	2.91
X1/4	0.250	29.23	8.59	28.8	36.8	127	25.4	3.85	30.0	90.2	22.6	3.24	25.8	166	37.7	2.93
X3/16	0.188	22.18	6.54	39.4	50.0	98.1	19.6	3.87	23.0	69.8	17.4	3.27	19.8	127	28.8	2.95
HSS10X6X5/8	0.625	59.32	17.4	6.00	12.4	211	42.2	3.48	54.2	93.6	31.2	2.32	37.7	221	62.0	2.49
X1/2	0.500	48.85	14.4	8.40	16.4	181	36.2	3.55	45.6	80.9	27.0	2.37	31.9	187	51.8	2.52
X3/8	0.375	37.69	11.1	12.8	23.5	145	29.0	3.61	35.9	65.4	21.8	2.43	25.2	147	40.4	2.56
X5/16	0.313	31.84	9.37	16.0	28.7	125	25.0	3.65	30.7	56.6	18.9	2.46	21.6	126	34.4	2.58
X1/4	0.250	25.82	7.59	20.8	36.8	103	20.6	3.68	25.1	46.9	15.6	2.49	17.7	103	28.0	2.60
X3/16	0.188	19.63	5.78	28.7	50.0	80.0	16.0	3.72	19.3	36.5	12.2	2.51	13.6	79.3	21.4	2.61
HSS10X5X3/8	0.375	35.13	10.3	10.1	23.5	128	25.6	3.53	32.3	42.9	17.2	2.04	19.9	107	33.2	2.39
X5/16	0.313	29.72	8.75	12.8	28.7	110	22.0	3.55	27.7	37.3	14.9	2.06	17.0	91.6	28.3	2.41
X1/4	0.250	24.12	7.09	16.8	36.8	91.2	18.2	3.59	22.7	31.1	12.4	2.09	14.0	75.2	23.1	2.43
X3/16	0.188	18.35	5.41	23.4	50.0	70.9	14.2	3.62	17.5	24.3	9.72	2.12	10.8	58.1	17.7	2.45
HSS10X4X5/8	0.625	50.81	14.9	2.80	12.4	156	31.2	3.24	42.5	34.8	17.4	1.53	21.6	100	38.6	2.15
X1/2	0.500	42.05	12.4	4.40	16.4	136	27.2	3.31	36.1	30.8	15.4	1.58	18.5	86.9	32.8	2.19
X3/8	0.375	32.58	9.58	7.47	23.5	110	22.0	3.39	28.7	25.5	12.8	1.63	14.9	70.4	26.0	2.23
X5/16	0.313	27.59	8.12	9.58	28.7	95.6	19.1	3.43	24.6	22.4	11.2	1.66	12.8	60.9	22.2	2.24
X1/4	0.250	22.42	6.59	12.8	36.8	79.3	15.9	3.47	20.2	18.8	9.40	1.69	10.6	50.4	18.2	2.26
X3/16	0.188	17.08	5.03	18.1	50.0	61.9	12.4	3.51	15.6	14.8	7.40	1.72	8.22	39.2	14.0	2.28



DIMENSIONS AND SECTION PROPERTIES OF RECTANGULAR HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area
	in.	lb/ft	in. ²			l	S	r	Z	l	S	r	Z	J	C	
						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
HSS10X3-1/2X1/2	0.500	40.34	11.9	3.40	16.4	124	24.8	3.23	33.7	22.3	12.7	1.37	15.5	66.2	28.0	2.11
X3/8	0.375	31.31	9.20	6.13	23.5	102	20.4	3.33	26.9	18.7	10.7	1.43	12.5	54.3	22.4	2.14
X5/16	0.313	26.53	7.81	7.98	28.7	88.2	17.6	3.36	23.1	16.5	9.43	1.45	10.8	47.3	19.2	2.16
X1/4	0.250	21.57	6.34	10.8	36.8	73.4	14.7	3.40	19.0	13.9	7.94	1.48	8.98	39.3	15.8	2.18
X3/16	0.188	16.44	4.84	15.4	50.0	57.4	11.5	3.44	14.7	11.0	6.29	1.51	6.99	30.7	12.2	2.20
HSS10X3X3/8	0.375	30.03	8.83	4.80	23.5	92.8	18.6	3.24	25.1	13.0	8.67	1.21	10.3	39.8	18.7	2.06
X5/16	0.313	25.46	7.49	6.38	28.7	80.9	16.2	3.29	21.6	11.5	7.67	1.24	8.93	34.9	16.2	2.08
X1/4	0.250	20.72	6.09	8.80	36.8	67.4	13.5	3.33	17.8	9.79	6.53	1.27	7.42	29.3	13.3	2.10
X3/16	0.188	15.80	4.66	12.8	50.0	52.8	10.6	3.37	13.8	7.82	5.21	1.30	5.80	23.0	10.3	2.11
HSS10X2X3/8	0.375	27.48	8.08	2.13	23.5	75.4	15.1	3.05	21.5	4.87	4.87	0.776	6.05	16.5	11.5	1.89
X5/16	0.313	23.34	6.87	3.19	28.7	66.2	13.2	3.10	18.6	4.43	4.43	0.803	5.34	14.9	10.1	1.91
X1/4	0.250	19.02	5.59	4.80	36.8	55.6	11.1	3.15	15.4	3.85	3.85	0.830	4.50	12.8	8.47	1.93
X3/16	0.188	14.53	4.28	7.44	50.0	43.8	8.8	3.20	11.9	3.15	3.15	0.858	3.57	10.4	6.66	1.95
HSS9X7X5/8	0.625	59.32	17.4	7.60	10.8	183	40.7	3.24	51.0	123	35.1	2.66	42.8	248	65.8	2.49
X1/2	0.500	48.85	14.4	10.4	14.4	157	34.9	3.30	42.9	106	30.3	2.71	36.1	209	54.8	2.52
X3/8	0.375	37.69	11.1	15.5	20.8	126	28.0	3.37	33.8	85.2	24.3	2.77	28.4	164	42.7	2.56
X5/16	0.313	31.84	9.37	19.2	25.6	108	24.0	3.40	28.9	73.6	21.0	2.80	24.3	140	36.2	2.58
X1/4	0.250	25.82	7.59	24.8	32.8	89.4	19.9	3.43	23.6	60.8	17.4	2.83	19.9	114	29.5	2.60
X3/16	0.188	19.63	5.78	34.0	44.7	69.4	15.4	3.47	18.2	47.3	13.5	2.86	15.3	87.9	22.5	2.61
HSS9X5X5/8	0.625	50.81	14.9	4.40	10.8	139	30.9	3.05	40.5	54.1	21.6	1.91	26.6	135	44.9	2.15
X1/2	0.500	42.05	12.4	6.40	14.4	121	26.9	3.12	34.4	47.4	19.0	1.96	22.7	115	37.8	2.19
X3/8	0.375	32.58	9.58	10.1	20.8	97.8	21.7	3.20	27.3	38.9	15.6	2.02	18.1	92.2	29.7	2.23
X5/16	0.313	27.59	8.12	12.8	25.6	84.7	18.8	3.23	23.4	33.9	13.6	2.04	15.6	79.3	25.4	2.24
X1/4	0.250	22.42	6.59	16.8	32.8	70.3	15.6	3.27	19.3	28.2	11.3	2.07	12.8	65.2	20.7	2.26
X3/16	0.188	17.08	5.03	23.4	44.7	54.8	12.2	3.30	14.9	22.1	8.84	2.10	9.93	50.4	15.9	2.28
HSS9X3X1/2	0.500	35.24	10.4	2.40	14.4	84.5	18.8	2.85	25.9	13.7	9.13	1.15	11.3	41.6	20.8	1.86
X3/8	0.375	27.48	8.08	4.80	20.8	69.9	15.5	2.94	20.9	11.7	7.80	1.20	9.29	34.9	16.8	1.89
X5/16	0.313	23.34	6.87	6.38	25.6	61.1	13.6	2.98	18.0	10.4	6.93	1.23	8.09	30.6	14.5	1.91
X1/4	0.250	19.02	5.59	8.80	32.8	51.1	11.4	3.02	14.9	8.85	5.90	1.26	6.73	25.6	12.0	1.93
X3/16	0.188	14.53	4.28	12.8	44.7	40.2	8.93	3.06	11.6	7.07	4.71	1.29	5.27	20.2	9.29	1.95



DIMENSIONS AND SECTION PROPERTIES OF RECTANGULAR HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area
	in.	lb/ft	in. ²			l	S	r	Z	l	S	r	Z	J	C	
						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
HSS8X6X5/8	0.625	50.81	14.9	6.00	9.20	119	29.8	2.83	38.0	75.5	25.2	2.25	31.0	158	48.6	2.15
X1/2	0.500	42.05	12.4	8.40	12.4	103	25.8	2.88	32.2	65.7	21.9	2.30	26.4	135	40.8	2.19
X3/8	0.375	32.58	9.58	12.8	18.1	83.7	20.9	2.96	25.6	53.5	17.8	2.36	21.0	107	32.0	2.23
X5/16	0.313	27.59	8.12	16.0	22.4	72.5	18.1	2.99	22.0	46.5	15.5	2.39	18.0	91.4	27.2	2.24
X1/4	0.250	22.42	6.59	20.8	28.8	60.1	15.0	3.02	18.0	38.6	12.9	2.42	14.8	74.9	22.2	2.26
X3/16	0.188	17.08	5.03	28.7	39.4	46.9	11.7	3.05	13.9	30.2	10.1	2.45	11.4	57.7	17.0	2.28
HSS8X4X5/8	0.625	42.30	12.4	2.80	9.20	85.2	21.3	2.62	28.8	27.6	13.8	1.49	17.3	73.2	30.2	1.82
X1/2	0.500	35.24	10.4	4.40	12.4	75.2	18.8	2.69	24.7	24.6	12.3	1.54	15.0	64.1	25.8	1.86
X3/8	0.375	27.48	8.08	7.47	18.1	61.9	15.5	2.77	19.9	20.6	10.3	1.60	12.2	52.2	20.5	1.89
X5/16	0.313	23.34	6.87	9.58	22.4	54.0	13.5	2.80	17.1	18.1	9.05	1.62	10.5	45.2	17.6	1.91
X1/4	0.250	19.02	5.59	12.8	28.8	45.1	11.3	2.84	14.1	15.3	7.65	1.65	8.72	37.5	14.5	1.93
X3/16	0.188	14.53	4.28	18.1	39.4	35.4	8.85	2.88	11.0	12.1	6.05	1.68	6.79	29.2	11.2	1.95
HSS8X3X1/2	0.500	31.84	9.36	2.40	12.4	61.1	15.3	2.55	21.0	12.1	8.07	1.14	10.1	35.7	18.3	1.69
X3/8	0.375	24.93	7.33	4.80	18.1	51.0	12.8	2.64	17.0	10.4	6.93	1.19	8.31	29.9	14.8	1.73
X5/16	0.313	21.21	6.24	6.38	22.4	44.8	11.2	2.68	14.7	9.26	6.17	1.22	7.25	26.3	12.8	1.74
X1/4	0.250	17.32	5.09	8.80	28.8	37.6	9.40	2.72	12.2	7.90	5.27	1.25	6.05	22.1	10.6	1.76
X3/16	0.188	13.25	3.90	12.8	39.4	29.7	7.42	2.76	9.51	6.33	4.22	1.27	4.74	17.4	8.23	1.78
HSS8X2X3/8	0.375	22.37	6.58	2.13	18.1	40.1	10.0	2.47	14.2	3.86	3.86	0.766	4.83	12.6	9.09	1.56
X5/16	0.313	19.08	5.62	3.19	22.4	35.5	8.88	2.51	12.3	3.53	3.53	0.793	4.28	11.4	8.00	1.58
X1/4	0.250	15.62	4.59	4.80	28.8	30.1	7.52	2.56	10.3	3.08	3.08	0.819	3.63	9.84	6.72	1.60
X3/16	0.188	11.97	3.53	7.44	39.4	23.9	5.98	2.60	8.04	2.53	2.53	0.847	2.89	7.95	5.30	1.61
HSS7X5X1/2	0.500	35.24	10.4	6.40	10.4	63.5	18.1	2.47	23.1	37.3	14.9	1.89	18.2	79.9	28.8	1.86
X3/8	0.375	27.48	8.08	10.1	15.5	52.2	14.9	2.54	18.5	30.8	12.3	1.95	14.6	64.2	22.8	1.89
X5/16	0.313	23.34	6.87	12.8	19.2	45.5	13.0	2.57	16.0	27.0	10.8	1.98	12.6	55.4	19.5	1.91
X1/4	0.250	19.02	5.59	16.8	24.8	38.0	10.9	2.61	13.2	22.6	9.04	2.01	10.4	45.6	16.0	1.93
X3/16	0.188	14.53	4.28	23.4	34.0	29.8	8.51	2.64	10.2	17.8	7.12	2.04	8.12	35.3	12.3	1.95



DIMENSIONS AND SECTION PROPERTIES OF RECTANGULAR HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area
	in.	lb/ft	in. ²			l	S	r	Z	l	S	r	Z	J	C	
						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
HSS7X4X1/2	0.500	31.84	9.36	4.40	10.4	52.9	15.1	2.38	19.8	21.6	10.8	1.52	13.3	53.0	22.3	1.69
X3/8	0.375	24.93	7.33	7.47	15.5	44.0	12.6	2.45	16.0	18.1	9.05	1.57	10.8	43.3	17.8	1.73
X5/16	0.313	21.21	6.24	9.58	19.2	38.5	11.0	2.48	13.9	16.0	8.00	1.60	9.37	37.6	15.3	1.74
X1/4	0.250	17.32	5.09	12.8	24.8	32.3	9.23	2.52	11.5	13.5	6.75	1.63	7.78	31.2	12.6	1.76
X3/16	0.188	13.25	3.90	18.1	34.0	25.5	7.29	2.56	8.93	10.7	5.35	1.66	6.07	24.3	9.74	1.78
HSS7X3X1/2	0.500	28.43	8.36	2.40	10.4	42.3	12.1	2.25	16.6	10.5	7.00	1.12	8.84	29.8	15.8	1.52
X3/8	0.375	22.37	6.58	4.80	15.5	35.7	10.2	2.33	13.5	9.10	6.07	1.18	7.32	25.1	12.8	1.56
X5/16	0.313	19.08	5.62	6.38	19.2	31.5	9.00	2.37	11.8	8.13	5.42	1.20	6.41	22.1	11.1	1.58
X1/4	0.250	15.62	4.59	8.80	24.8	26.6	7.60	2.41	9.8	6.95	4.63	1.23	5.36	18.5	9.22	1.60
X3/16	0.188	11.97	3.53	12.8	34.0	21.1	6.03	2.44	7.65	5.58	3.72	1.26	4.21	14.6	7.18	1.61
HSS7X2X1/4	0.250	13.91	4.09	4.80	24.8	20.9	5.97	2.26	8.10	2.70	2.70	0.812	3.19	8.36	5.85	1.43
3X16	0.188	10.70	3.15	7.44	34.0	16.7	4.77	2.30	6.37	2.22	2.22	0.840	2.54	6.76	4.62	1.45
HSS6X5X1/2	0.500	31.84	9.36	6.40	8.40	43.0	14.3	2.14	18.1	32.2	12.9	1.85	16.0	62.9	24.3	1.69
X3/8	0.375	24.93	7.33	10.1	12.8	35.7	11.9	2.21	14.7	26.8	10.7	1.91	12.9	50.9	19.3	1.73
X5/16	0.313	21.21	6.24	12.8	16.0	31.3	10.4	2.24	12.7	23.5	9.40	1.94	11.2	44.0	16.6	1.74
X1/4	0.250	17.32	5.09	16.8	20.8	26.2	8.73	2.27	10.5	19.8	7.92	1.97	9.26	36.3	13.6	1.76
X3/16	0.188	13.25	3.90	23.4	28.7	20.7	6.90	2.30	8.17	15.6	6.24	2.00	7.21	28.2	10.5	1.78
HSS6X4X1/2	0.500	28.43	8.36	4.40	8.40	35.4	11.8	2.06	15.4	18.5	9.25	1.49	11.5	42.1	18.8	1.52
X3/8	0.375	22.37	6.58	7.47	12.8	29.7	9.9	2.12	12.5	15.7	7.85	1.54	9.44	34.6	15.1	1.56
X5/16	0.313	19.08	5.62	9.58	16.0	26.2	8.73	2.16	10.9	13.9	6.95	1.57	8.22	30.1	13.0	1.58
X1/4	0.250	15.62	4.59	12.8	20.8	22.1	7.37	2.19	9.06	11.7	5.85	1.60	6.84	25.0	10.7	1.60
X3/16	0.188	11.97	3.53	18.1	28.7	17.5	5.83	2.23	7.07	9.34	4.67	1.63	5.36	19.6	8.30	1.61
HSS6X3X1/2	0.500	25.03	7.36	2.40	8.40	27.8	9.27	1.94	12.6	8.96	5.97	1.10	7.59	23.9	13.3	1.36
X3/8	0.375	19.82	5.83	4.80	12.8	23.8	7.93	2.02	10.4	7.80	5.20	1.16	6.34	20.3	10.9	1.39
X5/16	0.313	16.96	4.99	6.38	16.0	21.1	7.03	2.06	9.12	6.99	4.66	1.18	5.56	17.9	9.45	1.41
X1/4	0.250	13.91	4.09	8.80	20.8	17.9	5.97	2.09	7.62	6.00	4.00	1.21	4.67	15.1	7.85	1.43
X3/16	0.188	10.70	3.15	12.8	28.7	14.3	4.77	2.13	5.98	4.84	3.23	1.24	3.69	11.9	6.12	1.45



DIMENSIONS AND SECTION PROPERTIES OF RECTANGULAR HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area
	in.	lb/ft	in. ²			l	S	r	Z	l	S	r	Z	J	C	
						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
HSS6X2X3/8	0.375	17.27	5.08	2.13	12.8	17.8	5.93	1.87	8.33	2.85	2.85	0.749	3.61	8.72	6.65	1.23
X5/16	0.313	14.83	4.36	3.19	16.0	16.1	5.37	1.92	7.34	2.62	2.62	0.775	3.23	7.94	5.89	1.24
X1/4	0.250	12.21	3.59	4.80	20.8	13.8	4.60	1.96	6.18	2.31	2.31	0.802	2.75	6.88	4.97	1.26
X3/16	0.188	9.42	2.78	7.44	28.7	11.1	3.70	2.00	4.89	1.91	1.91	0.829	2.20	5.58	3.93	1.28
HSS5X4X1/2	0.500	25.03	7.36	4.40	6.40	22.0	8.80	1.73	11.5	15.4	7.70	1.45	9.77	31.7	15.3	1.36
X3/8	0.375	19.82	5.83	7.47	10.1	18.8	7.52	1.80	9.44	13.2	6.60	1.50	8.08	26.3	12.4	1.39
X5/16	0.313	16.96	4.99	9.58	12.8	16.6	6.64	1.82	8.25	11.7	5.85	1.53	7.06	22.9	10.7	1.41
X1/4	0.250	13.91	4.09	12.8	16.8	14.1	5.64	1.86	6.89	10.0	5.00	1.56	5.90	19.1	8.85	1.43
X3/16	0.188	10.70	3.15	18.1	23.4	11.3	4.52	1.89	5.40	7.98	3.99	1.59	4.64	15.0	6.87	1.45
HSS5X3X1/2	0.500	21.63	6.36	2.40	6.40	16.9	6.76	1.63	9.20	7.37	4.91	1.08	6.34	18.2	10.8	1.19
X3/8	0.375	17.27	5.08	4.80	10.1	14.7	5.88	1.70	7.71	6.50	4.33	1.13	5.35	15.6	8.90	1.23
X5/16	0.313	14.83	4.36	6.38	12.8	13.2	5.28	1.74	6.78	5.86	3.91	1.16	4.72	13.8	7.77	1.24
X1/4	0.250	12.21	3.59	8.80	16.8	11.3	4.52	1.77	5.70	5.05	3.37	1.19	3.98	11.7	6.47	1.26
X3/16	0.188	9.42	2.78	12.8	23.4	9.08	3.63	1.81	4.50	4.09	2.73	1.21	3.16	9.23	5.06	1.28
HSS5X2-1/2X1/4	0.250	11.36	3.34	6.80	16.8	9.9	3.96	1.72	5.11	3.28	2.62	0.991	3.12	8.36	5.28	1.18
X3/16	0.188	8.78	2.59	10.1	23.4	7.99	3.20	1.76	4.05	2.69	2.15	1.02	2.49	6.68	4.16	1.20
HSS5X2X3/8	0.375	14.72	4.33	2.13	10.1	10.72	4.29	1.57	5.98	2.35	2.35	0.737	3.00	6.82	5.43	1.06
X5/16	0.313	12.70	3.74	3.19	12.8	9.76	3.90	1.62	5.31	2.17	2.17	0.762	2.70	6.24	4.83	1.08
X1/4	0.250	10.51	3.09	4.80	16.8	8.48	3.39	1.66	4.51	1.93	1.93	0.790	2.32	5.43	4.10	1.10
X3/16	0.188	8.15	2.40	7.44	23.4	6.90	2.76	1.70	3.59	1.60	1.60	0.816	1.86	4.41	3.25	1.11
HSS4X3X3/8	0.375	14.72	4.33	4.80	7.47	8.23	4.12	1.38	5.36	5.19	3.46	1.09	4.37	11.1	6.93	1.06
X5/16	0.313	12.70	3.74	6.38	9.58	7.46	3.73	1.41	4.75	4.72	3.15	1.12	3.88	9.90	6.08	1.08
X1/4	0.250	10.51	3.09	8.80	12.8	6.46	3.23	1.45	4.03	4.11	2.74	1.15	3.30	8.41	5.10	1.10
X3/16	0.188	8.15	2.40	12.8	18.1	5.24	2.62	1.48	3.21	3.35	2.23	1.18	2.63	6.68	4.00	1.11
HSS4X2-1/2X3/8	0.375	13.44	3.95	3.47	7.47	7.00	3.50	1.33	4.68	3.27	2.62	0.910	3.33	7.86	5.57	0.976
X5/16	0.313	11.64	3.42	4.79	9.58	6.39	3.20	1.37	4.18	3.01	2.41	0.938	2.99	7.09	4.93	0.994
X1/4	0.250	9.66	2.84	6.80	12.8	5.58	2.79	1.40	3.56	2.65	2.12	0.966	2.56	6.09	4.16	1.01
X3/16	0.188	7.51	2.21	10.1	18.1	4.56	2.28	1.44	2.85	2.18	1.74	0.993	2.05	4.89	3.29	1.03



DIMENSIONS AND SECTION PROPERTIES OF RECTANGULAR HSS

Shape	Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	Axis X-X				Axis Y-Y				Torsion		Surface Area
	in.	lb/ft	in. ²			l	S	r	Z	l	S	r	Z	J	C	
						in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	in.	in. ³	in. ⁴	in. ³	
HSS4X2X3/8	0.375	12.17	3.58	2.13	7.47	5.76	2.88	1.27	4.00	1.84	1.84	0.717	2.39	4.97	4.21	0.893
X5/16	0.313	10.58	3.11	3.19	9.58	5.33	2.66	1.31	3.60	1.72	1.72	0.744	2.17	4.58	3.78	0.910
X1/4	0.250	8.81	2.59	4.80	12.8	4.70	2.35	1.35	3.09	1.54	1.54	0.771	1.88	4.01	3.22	0.928
X3/16	0.188	6.87	2.02	7.44	18.1	3.88	1.94	1.39	2.49	1.29	1.29	0.799	1.52	3.27	2.57	0.946
HSS3-1/2X2-1/2X3/8	0.375	12.17	3.58	3.47	6.13	4.90	2.80	1.17	3.74	2.84	2.27	0.891	2.94	6.38	4.78	0.893
X5/16	0.313	10.58	3.11	4.79	7.98	4.51	2.58	1.20	3.36	2.63	2.10	0.920	2.64	5.79	4.24	0.910
X1/4	0.250	8.81	2.59	6.80	10.8	3.97	2.27	1.24	2.88	2.33	1.86	0.948	2.28	4.99	3.60	0.928
X3/16	0.188	6.87	2.02	10.1	15.4	3.27	1.87	1.27	2.32	1.93	1.54	0.977	1.83	4.02	2.85	0.946
HSS3-1/2X2X1/4	0.250	7.96	2.34	4.80	10.8	3.31	1.89	1.19	2.48	1.35	1.35	0.760	1.66	3.31	2.78	0.845
X3/16	0.188	6.23	1.84	7.44	15.4	2.75	1.57	1.22	2.01	1.13	1.13	0.784	1.35	2.71	2.23	0.863
HSS3-1/2X1-1/2X1/4	0.250	7.11	2.09	2.80	10.8	2.65	1.51	1.13	2.07	0.659	0.879	0.562	1.11	1.86	1.97	0.762
X3/16	0.188	5.59	1.65	4.78	15.4	2.24	1.28	1.17	1.70	0.569	0.759	0.587	0.917	1.57	1.61	0.780
HSS3X2-1/2X5/16	0.313	9.51	2.80	4.79	6.38	3.02	2.01	1.04	2.62	2.26	1.81	0.898	2.30	4.53	3.56	0.827
X1/4	0.250	7.96	2.34	6.80	8.80	2.68	1.79	1.07	2.27	2.01	1.61	0.927	1.99	3.93	3.03	0.845
X3/16	0.188	6.23	1.84	10.1	12.8	2.23	1.49	1.10	1.84	1.68	1.34	0.956	1.62	3.19	2.42	0.863
HSS3X2X5/16	0.313	8.45	2.49	3.19	6.38	2.45	1.63	0.992	2.20	1.27	1.27	0.714	1.64	2.97	2.72	0.744
X1/4	0.250	7.11	2.09	4.80	8.80	2.21	1.47	1.03	1.92	1.15	1.15	0.742	1.44	2.63	2.35	0.762
X3/16	0.188	5.59	1.65	7.44	12.8	1.86	1.24	1.06	1.57	0.980	0.980	0.771	1.18	2.17	1.89	0.780
HSS3X1-1/2X1/4	0.250	6.26	1.84	2.80	8.80	1.74	1.16	0.972	1.58	0.560	0.747	0.552	0.949	1.50	1.66	0.678
X3/16	0.188	4.96	1.46	4.78	12.8	1.49	0.993	1.01	1.31	0.488	0.651	0.578	0.794	1.27	1.36	0.696
HSS3X1X3/16	0.188	4.32	1.27	2.12	12.8	1.12	0.747	0.939	1.04	0.178	0.356	0.374	0.452	0.546	0.833	0.613
HSS2-1/2X2X1/4	0.250	6.26	1.84	4.80	6.80	1.38	1.10	0.866	1.43	0.962	0.962	0.723	1.22	1.98	1.91	0.678
X3/16	0.188	4.96	1.46	7.44	10.1	1.17	0.936	0.895	1.18	0.825	0.825	0.752	1.01	1.64	1.55	0.696
HSS2-1/2X1-1/2X1/4	0.250	5.41	1.59	2.80	6.80	1.06	0.848	0.816	1.15	0.461	0.615	0.538	0.793	1.14	1.35	0.595
HSS2-1/2X1-1/2X3/16	0.188	4.32	1.27	4.78	10.1	0.923	0.738	0.853	0.965	0.407	0.543	0.566	0.670	0.977	1.11	0.613
HSS2-1/2X1X3/16	0.188	3.68	1.08	2.12	10.1	0.671	0.537	0.788	0.748	0.147	0.294	0.369	0.376	0.427	0.680	0.530
HSS2-1/4X2X3/16	0.188	4.64	1.37	7.44	8.77	0.901	0.801	0.811	1.01	0.748	0.748	0.739	0.927	1.39	1.38	0.655
HSS2X1-1/2X3/16	0.188	3.68	1.08	4.78	7.44	0.515	0.515	0.691	0.671	0.325	0.433	0.549	0.547	0.696	0.868	0.530
HSS2X1X3/16	0.188	3.04	0.896	2.12	7.44	0.360	0.360	0.634	0.501	0.115	0.230	0.358	0.300	0.311	0.528	0.446

