

### Atlas HSS Section Properties ( Square) - CSA G40

Designation	Shape			Design Wall Thickness, t	Nominal Wt	Area, A	b/t	h/t	I	S	r	Z	Workable Flat	Torsion		Surface Area
	H	B	t <sub>nom</sub>											J	C	
	in	in	in											in. <sup>4</sup>	in. <sup>3</sup>	
HSS 22 x 22 x 7/8	22	22	0.875	0.875	244.88	72.0	21.1	21.1	5280	480	8.56	565	18.063	8420	778	7.08
HSS 22 x 22 x 3/4	22	22	0.750	0.750	212.00	62.3	25.3	25.3	4630	421	8.62	492	18.625	7330	676	7.12
HSS 20 x 20 x 7/8	20	20	0.875	0.875	221.06	65.0	18.9	18.9	3900	390	7.75	461	16.063	6260	638	6.42
HSS 20 x 20 x 3/4	20	20	0.750	0.750	191.58	56.3	22.7	22.7	3430	343	7.81	403	16.625	5460	554	6.45
HSS 20 x 20 x 5/8	20	20	0.625	0.625	161.40	47.4	28.0	28.0	2940	294	7.88	342	17.188	4620	468	6.49
HSS 20 x 20 x 1/2	20	20	0.500	0.500	130.52	38.4	36.0	36.0	2410	241	7.92	279	17.750	3760	380	6.52
HSS 20 x 20 x 3/8	20	20	0.375	0.375	98.94	29.1	49.3	49.3	1850	185	7.97	213	18.313	2870	289	6.56
HSS 18 x 18 x 7/8	18	18	0.875	0.875	197.24	58.0	16.6	16.6	2780	309	6.92	368	14.063	4500	511	5.75
HSS 18 x 18 x 3/4	18	18	0.750	0.750	171.16	50.3	20.0	20.0	2460	273	6.99	322	14.625	3930	445	5.79
HSS 18 x 18 x 5/8	18	18	0.625	0.625	144.39	42.4	24.8	24.8	2110	234	7.05	274	15.188	3340	376	5.82
HSS 18 x 18 x 1/2	18	18	0.500	0.500	116.91	34.4	32.0	32.0	1740	193	7.11	224	15.750	2720	306	5.86
HSS 18 x 18 x 3/8	18	18	0.375	0.375	88.73	26.1	44.0	44.0	1340	149	7.17	172	16.313	2080	233	5.89
HSS 16 x 16 x 7/8	16	16	0.875	0.875	173.43	51.0	14.3	14.3	1900	238	6.10	285	12.063	3100	398	5.08
HSS 16 x 16 x 3/4	16	16	0.750	0.750	150.75	44.3	17.3	17.3	1690	211	6.18	250	12.625	2720	347	5.12
HSS 16 x 16 x 5/8	16	16	0.625	0.625	127.37	37.4	21.6	21.6	1450	181	6.23	214	13.188	2320	295	5.15
HSS 16 x 16 x 1/2	16	16	0.500	0.500	103.30	30.4	28.0	28.0	1200	150	6.28	175	13.750	1890	240	5.19
HSS 16 x 16 x 3/8	16	16	0.375	0.375	78.52	23.1	38.7	38.7	931	116	6.35	134	14.313	1450	183	5.23
HSS 16 x 16 x 5/16	16	16	0.313	0.313	65.87	19.4	47.1	47.1	790	98.8	6.38	114	14.594	1220	154	5.24
HSS 14 x 14 x 7/8	14	14	0.875	0.875	149.61	44.0	12.0	12.0	1230	176	5.29	213	10.063	2030	299	4.42
HSS 14 x 14 x 3/4	14	14	0.750	0.750	130.33	38.3	14.7	14.7	1100	157	5.36	188	10.625	1790	262	4.45
HSS 14 x 14 x 5/8	14	14	0.625	0.625	110.36	32.4	18.4	18.4	952	136	5.42	161	11.188	1530	223	4.49
HSS 14 x 14 x 1/2	14	14	0.500	0.500	89.68	26.4	24.0	24.0	791	113	5.47	132	11.750	1250	182	4.52
HSS 14 x 14 x 3/8	14	14	0.375	0.375	68.31	20.1	33.3	33.3	615	87.9	5.53	102	12.313	963	139	4.56
HSS 14 x 14 x 5/16	14	14	0.313	0.313	57.36	16.9	40.7	40.7	523	74.7	5.56	86	12.594	813	117	4.58
HSS 12 x 12 x 3/4	12	12	0.750	0.750	109.91	32.3	12.0	12.0	666	111	4.54	134	8.625	1100	188	3.79
HSS 12 x 12 x 5/8	12	12	0.625	0.625	93.34	27.4	15.2	15.2	580	96.7	4.60	116	9.188	943	161	3.82
HSS 12 x 12 x 1/2	12	12	0.500	0.500	76.07	22.4	20.0	20.0	486	81.0	4.66	95.4	9.750	777	132	3.86
HSS 12 x 12 x 3/8	12	12	0.375	0.375	58.10	17.1	28.0	28.0	380	63.3	4.71	73.9	10.313	599	101.2	3.89
HSS 12 x 12 x 5/16	12	12	0.313	0.313	48.86	14.4	34.3	34.3	324	54.0	4.74	62.6	10.594	507	85.4	3.91
HSS 12 x 12 x 1/4	12	12	0.250	0.250	39.43	11.6	44.0	44.0	265	44.2	4.78	50.8	10.875	410	69.0	3.93
HSS 10 x 10 x 3/4	10	10	0.750	0.750	89.50	26.3	9.3	9.3	364	72.8	3.72	89.4	6.625	610	127	3.12
HSS 10 x 10 x 5/8	10	10	0.625	0.625	76.33	22.4	12.0	12.0	321	64.2	3.79	77.6	7.188	529	109	3.15
HSS 10 x 10 x 1/2	10	10	0.500	0.500	62.46	18.4	16.0	16.0	271	54.2	3.84	64.6	7.750	439	89.8	3.19
HSS 10 x 10 x 3/8	10	10	0.375	0.375	47.90	14.1	22.7	22.7	214	42.8	3.90	50.4	8.313	341	69.3	3.23
HSS 10 x 10 x 5/16	10	10	0.313	0.313	40.35	11.9	27.9	27.9	184	36.8	3.93	42.8	8.594	289	58.6	3.24
HSS 10 x 10 x 1/4	10	10	0.250	0.250	32.63	9.59	36.0	36.0	151	30.2	3.97	34.9	8.875	235	47.5	3.26
HSS 10 x 10 x 3/16	10	10	0.188	0.188	24.73	7.29	49.2	49.2	116	23.2	3.99	26.7	9.156	180	36.2	3.28

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	H	B	t <sub>nom</sub>											J	C	
	in	in	in											in. <sup>4</sup>	in. <sup>3</sup>	
HSS 9 x 9 x 5/8	9	9	0.625	0.625	67.82	19.9	10.4	10.4	227	50.4	3.38	61.5	6.188	377	86.7	2.82
HSS 9 x 9 x 1/2	9	9	0.500	0.500	55.66	16.4	14.0	14.0	193	42.9	3.43	51.4	6.750	315	71.8	2.86
HSS 9 x 9 x 3/8	9	9	0.375	0.375	42.79	12.6	20.0	20.0	154	34.2	3.50	40.3	7.313	246	55.6	2.89
HSS 9 x 9 x 5/16	9	9	0.313	0.313	36.10	10.62	24.8	24.8	132	29.3	3.53	34.3	7.594	209	47.1	2.91
HSS 9 x 9 x 1/4	9	9	0.250	0.250	29.23	8.59	32.0	32.0	109	24.2	3.56	28.0	7.875	170	38.2	2.93
HSS 9 x 9 x 3/16	9	9	0.188	0.188	22.18	6.54	43.9	43.9	84.0	18.7	3.58	21.5	8.156	130	29.2	2.95
HSS 8 x 8 x 5/8	8	8	0.625	0.625	59.32	17.4	8.8	8.8	153	38.3	2.97	47.2	5.188	258	67.0	2.49
HSS 8 x 8 x 1/2	8	8	0.500	0.500	48.85	14.4	12.0	12.0	131	32.8	3.02	39.7	5.750	217	55.8	2.52
HSS 8 x 8 x 3/8	8	8	0.375	0.375	37.69	11.1	17.3	17.3	106	26.5	3.09	31.3	6.313	170	43.4	2.56
HSS 8 x 8 x 5/16	8	8	0.313	0.313	31.84	9.37	21.6	21.6	91.0	22.8	3.12	26.8	6.594	145	36.9	2.58
HSS 8 x 8 x 1/4	8	8	0.250	0.250	25.82	7.59	28.0	28.0	75.2	18.8	3.15	21.9	6.875	118	30.0	2.60
HSS 8 x 8 x 3/16	8	8	0.188	0.188	19.63	5.78	38.6	38.6	58.4	14.6	3.18	16.9	7.156	90.8	22.9	2.61
HSS 7 x 7 x 5/8	7	7	0.625	0.625	50.81	14.9	7.2	7.2	97.6	27.9	2.56	34.8	4.188	166	49.9	2.15
HSS 7 x 7 x 1/2	7	7	0.500	0.500	42.05	12.4	10.0	10.0	84.7	24.2	2.61	29.6	4.750	141	41.8	2.19
HSS 7 x 7 x 3/8	7	7	0.375	0.375	32.58	9.58	14.7	14.7	68.7	19.6	2.68	23.5	5.313	112	32.7	2.23
HSS 7 x 7 x 5/16	7	7	0.313	0.313	27.59	8.12	18.4	18.4	59.6	17.0	2.71	20.1	5.594	95.7	27.9	2.24
HSS 7 x 7 x 1/4	7	7	0.250	0.250	22.42	6.59	24.0	24.0	49.4	14.1	2.74	16.5	5.875	78.3	22.7	2.26
HSS 7 x 7 x 3/16	7	7	0.188	0.188	17.08	5.03	33.2	33.2	38.6	11.0	2.77	12.8	6.156	60.3	17.4	2.28
HSS 6 x 6 x 5/8	6	6	0.625	0.625	42.30	12.43	5.6	5.6	57.4	19.1	2.15	24.3	3.188	99.5	35.2	1.82
HSS 6 x 6 x 1/2	6	6	0.500	0.500	35.24	10.36	8.0	8.0	50.5	16.8	2.21	20.9	3.750	85.6	29.8	1.86
HSS 6 x 6 x 3/8	6	6	0.375	0.375	27.48	8.08	12.0	12.0	41.6	13.9	2.27	16.8	4.313	68.5	23.5	1.89
HSS 6 x 6 x 5/16	6	6	0.313	0.313	23.34	6.87	15.2	15.2	36.3	12.1	2.30	14.5	4.594	59.0	20.1	1.91
HSS 6 x 6 x 1/4	6	6	0.250	0.250	19.02	5.59	20.0	20.0	30.3	10.10	2.33	11.9	4.875	48.5	16.5	1.93
HSS 6 x 6 x 3/16	6	6	0.188	0.188	14.53	4.28	27.9	27.9	23.8	7.93	2.36	9.26	5.156	37.5	12.7	1.95
HSS 5 x 5 x 1/2	5	5	0.500	0.500	28.43	8.36	6.0	6.0	27.1	10.8	1.80	13.7	2.750	46.8	19.8	1.52
HSS 5 x 5 x 3/8	5	5	0.375	0.375	22.37	6.58	9.3	9.3	22.8	9.12	1.86	11.2	3.313	38.2	15.8	1.56
HSS 5 x 5 x 5/16	5	5	0.313	0.313	19.08	5.62	12.0	12.0	20.1	8.04	1.89	9.71	3.594	33.1	13.6	1.58
HSS 5 x 5 x 1/4	5	5	0.250	0.250	15.62	4.59	16.0	16.0	16.9	6.76	1.92	8.07	3.875	27.4	11.2	1.60
HSS 5 x 5 x 3/16	5	5	0.188	0.188	11.97	3.53	22.6	22.6	13.4	5.36	1.95	6.31	4.156	21.4	8.68	1.61
HSS 5 x 5 x 1/8	5	5	0.125	0.125	8.16	2.40	36.0	36.0	9.41	3.76	1.98	4.36	4.438	14.7	5.93	1.63
HSS 4.5 x 4.5 x 1/2	4.5	4.5	0.500	0.500	25.03	7.36	5.0	5.0	18.7	8.31	1.59	10.67	2.250	32.7	15.5	1.36
HSS 4.5 x 4.5 x 3/8	4.5	4.5	0.375	0.375	19.82	5.83	8.0	8.0	16.0	7.11	1.66	8.81	2.813	27.1	12.6	1.39
HSS 4.5 x 4.5 x 5/16	4.5	4.5	0.313	0.313	16.96	4.99	10.4	10.4	14.2	6.31	1.69	7.69	3.094	23.6	10.9	1.41
HSS 4.5 x 4.5 x 1/4	4.5	4.5	0.250	0.250	13.91	4.09	14.0	14.0	12.1	5.38	1.72	6.43	3.375	19.7	8.97	1.43
HSS 4.5 x 4.5 x 3/16	4.5	4.5	0.188	0.188	10.70	3.15	19.9	19.9	9.62	4.28	1.75	5.05	3.656	15.4	6.97	1.45
HSS 4.5 x 4.5 x 1/8	4.5	4.5	0.125	0.125	7.31	2.15	32.0	32.0	6.78	3.01	1.78	3.50	3.938	10.63	4.78	1.46

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	H	B	t <sub>nom</sub>											J	C	
	in	in	in											in. <sup>4</sup>	in. <sup>3</sup>	
HSS 4 x 4 x 1/2	4	4	0.500	0.500	21.63	6.36	4.0	4.0	12.3	6.15	1.39	8.02	1.750	21.8	11.8	1.19
HSS 4 x 4 x 3/8	4	4	0.375	0.375	17.27	5.08	6.7	6.7	10.7	5.35	1.45	6.72	2.313	18.4	9.65	1.23
HSS 4 x 4 x 5/16	4	4	0.313	0.313	14.83	4.36	8.8	8.8	9.59	4.80	1.48	5.91	2.594	16.1	8.39	1.24
HSS 4 x 4 x 1/4	4	4	0.250	0.250	12.21	3.59	12.0	12.0	8.22	4.11	1.51	4.97	2.875	13.5	6.97	1.26
HSS 4 x 4 x 3/16	4	4	0.188	0.188	9.42	2.78	17.3	17.3	6.61	3.31	1.54	3.92	3.156	10.7	5.44	1.28
HSS 4 x 4 x 1/8	4	4	0.125	0.125	6.46	1.90	28.0	28.0	4.70	2.35	1.57	2.74	3.438	7.40	3.75	1.30
HSS 3.5 x 3.5 x 3/8	3.5	3.5	0.375	0.375	14.72	4.33	5.3	5.3	6.74	3.85	1.25	4.91	1.813	11.7	7.12	1.06
HSS 3.5 x 3.5 x 5/16	3.5	3.5	0.313	0.313	12.70	3.74	7.2	7.2	6.11	3.49	1.28	4.36	2.094	10.42	6.24	1.08
HSS 3.5 x 3.5 x 1/4	3.5	3.5	0.250	0.250	10.51	3.09	10.0	10.0	5.29	3.02	1.31	3.69	2.375	8.82	5.22	1.10
HSS 3.5 x 3.5 x 3/16	3.5	3.5	0.188	0.188	8.15	2.40	14.6	14.6	4.30	2.46	1.34	2.94	2.656	7.00	4.10	1.11
HSS 3.5 x 3.5 x 1/8	3.5	3.5	0.125	0.125	5.61	1.65	24.0	24.0	3.09	1.77	1.37	2.07	2.938	4.90	2.84	1.13
HSS 3 x 3 x 3/8	3	3	0.375	0.375	12.17	3.58	4.0	4.0	3.89	2.59	1.04	3.38	1.313	6.89	4.96	0.893
HSS 3 x 3 x 5/16	3	3	0.313	0.313	10.58	3.11	5.6	5.6	3.59	2.39	1.07	3.04	1.594	6.22	4.40	0.910
HSS 3 x 3 x 1/4	3	3	0.250	0.250	8.81	2.59	8.0	8.0	3.16	2.11	1.10	2.61	1.875	5.35	3.72	0.928
HSS 3 x 3 x 3/16	3	3	0.188	0.188	6.87	2.02	12.0	12.0	2.61	1.74	1.14	2.10	2.156	4.29	2.95	0.946
HSS 3 x 3 x 1/8	3	3	0.125	0.125	4.75	1.40	20.0	20.0	1.90	1.27	1.16	1.49	2.438	3.03	2.06	0.964
HSS 2.5 x 2.5 x 1/4	2.5	2.5	0.250	0.250	7.11	2.09	6.0	6.0	1.69	1.35	0.899	1.71	1.375	2.92	2.47	0.762
HSS 2.5 x 2.5 x 3/16	2.5	2.5	0.188	0.188	5.59	1.65	9.3	9.3	1.43	1.14	0.931	1.40	1.656	2.39	1.98	0.780
HSS 2.5 x 2.5 x 1/8	2.5	2.5	0.125	0.125	3.90	1.15	16.0	16.0	1.059	0.847	0.960	1.009	1.938	1.71	1.40	0.798
HSS 2 x 2 x 1/4	2	2	0.250	0.250	5.41	1.59	4.0	4.0	0.769	0.769	0.695	1.003	0.875	1.36	1.47	0.595
HSS 2 x 2 x 3/16	2	2	0.188	0.188	4.32	1.27	6.6	6.6	0.670	0.670	0.726	0.841	1.156	1.15	1.21	0.613
HSS 2 x 2 x 1/8	2	2	0.125	0.125	3.05	0.90	12.0	12.0	0.514	0.514	0.756	0.621	1.438	0.846	0.871	0.631
HSS 1.5 x 1.5 x 1/4	1.5	1.5	0.250	0.250	3.71	1.09	2.0	2.0	0.263	0.351	0.491	0.481	0.375	0.48	0.72	0.428
HSS 1.5 x 1.5 x 3/16	1.5	1.5	0.188	0.188	3.04	0.90	4.0	4.0	0.244	0.325	0.521	0.424	0.656	0.43	0.62	0.446
HSS 1.5 x 1.5 x 1/8	1.5	1.5	0.125	0.125	2.20	0.65	8.0	8.0	0.197	0.263	0.551	0.326	0.938	0.334	0.465	0.464
HSS 1.5 x 1.5 x 0.100	1.5	1.5	0.100	0.100	1.82	0.53	11.0	11.0	0.170	0.227	0.566	0.276	1.050	0.28	0.39	0.471
HSS 1.25 x 1.25 x 3/16	1.25	1.25	0.188	0.188	2.41	0.71	2.6	2.6	0.124	0.198	0.418	0.268	0.404	0.224	0.398	0.363
HSS 1.25 x 1.25 x 1/8	1.25	1.25	0.125	0.125	1.78	0.52	6.0	6.0	0.106	0.170	0.451	0.214	0.688	0.183	0.309	0.381
HSS 1.25 x 1.25 x 0.100	1.25	1.25	0.100	0.100	1.48	0.43	8.5	8.5	0.093	0.149	0.465	0.183	0.800	0.156	0.261	0.388

**Notes:**

Always refer to the Atlas Tube Availability Chart to avoid selecting sections that are more difficult to source.

Indicates Jumbo HSS.