

Atlas HSS Section Properties (Square) - CSA G40

Designation	Shape			Design Wall Thickness, t	Mass	Dead Load	Area, A	b/t	h/t	I	S	r	Z	Workable Flat	Torsion		Surface Area
	H	B	t _{nom}												J	C	
	mm	mm	mm												mm	mm	
HSS 22 x 22 x 7/8	558.8	558.8	22.23	22.23	365	3.58	46400	21.1	21.1	2197	7860	218	9260	459	3505000	12800	2.16
HSS 22 x 22 x 3/4	558.8	558.8	19.05	19.05	316	3.10	40200	25.3	25.3	1929	6900	219	8070	473	3050000	11100	2.17
HSS 20 x 20 x 7/8	508	508	22.23	22.23	329	3.23	41900	18.9	18.9	1623	6390	197	7560	408	2604000	10400	1.96
HSS 20 x 20 x 3/4	508	508	19.05	19.05	285	2.79	36300	22.7	22.7	1428	5620	198	6600	422	2271000	9080	1.97
HSS 20 x 20 x 5/8	508	508	15.88	15.88	240	2.35	30600	28.0	28.0	1222	4810	200	5610	437	1925000	7680	1.98
HSS 20 x 20 x 1/2	508	508	12.70	12.70	194	1.90	24700	36.0	36.0	1003	3950	202	4570	451	1565000	6220	1.99
HSS 20 x 20 x 3/8	508	508	9.53	9.53	147	1.44	18800	49.3	49.3	772	3040	203	3490	465	1193000	4730	2.00
HSS 18 x 18 x 7/8	457.2	457.2	22.23	22.23	294	2.88	37400	16.6	16.6	1159	5070	176	6030	357	1873000	8370	1.75
HSS 18 x 18 x 3/4	457.2	457.2	19.05	19.05	255	2.50	32500	20.0	20.0	1023	4480	177	5280	371	1637000	7290	1.76
HSS 18 x 18 x 5/8	457.2	457.2	15.88	15.88	215	2.11	27400	24.8	24.8	878	3840	179	4490	386	1390000	6170	1.77
HSS 18 x 18 x 1/2	457.2	457.2	12.70	12.70	174	1.71	22200	32.0	32.0	723	3160	180	3670	400	1133000	5010	1.79
HSS 18 x 18 x 3/8	457.2	457.2	9.53	9.53	132	1.29	16800	44.0	44.0	558	2440	182	2810	414	865000	3820	1.80
HSS 16 x 16 x 7/8	406.4	406.4	22.23	22.23	258	2.53	32900	14.3	14.3	793	3900	155	4670	306	1292000	6520	1.55
HSS 16 x 16 x 3/4	406.4	406.4	19.05	19.05	224	2.20	28600	17.3	17.3	703	3460	157	4100	321	1133000	5690	1.56
HSS 16 x 16 x 5/8	406.4	406.4	15.88	15.88	190	1.86	24200	21.6	21.6	606	2980	158	3500	335	965000	4830	1.57
HSS 16 x 16 x 1/2	406.4	406.4	12.70	12.70	154	1.51	19600	28.0	28.0	500	2460	160	2870	349	788000	3930	1.58
HSS 16 x 16 x 3/8	406.4	406.4	9.53	9.53	117	1.15	14900	38.6	38.6	388	1910	161	2200	364	604000	3000	1.59
HSS 16 x 16 x 5/16	406.4	406.4	7.95	7.95	98.2	0.960	12500	47.1	47.1	329	1620	162	1860	371	509000	2520	1.60
HSS 14 x 14 x 7/8	355.6	355.6	22.23	22.23	223	2.19	28400	12.0	12.0	513	2890	134	3490	256	846000	4900	1.35
HSS 14 x 14 x 3/4	355.6	355.6	19.05	19.05	194	1.90	24700	14.7	14.7	457	2570	136	3080	270	744000	4290	1.36
HSS 14 x 14 x 5/8	355.6	355.6	15.88	15.88	164	1.61	20900	18.4	18.4	396	2230	138	2640	284	637000	3650	1.37
HSS 14 x 14 x 1/2	355.6	355.6	12.70	12.70	133	1.30	17000	24.0	24.0	329	1850	139	2170	298	522000	2980	1.38
HSS 14 x 14 x 3/8	355.6	355.6	9.53	9.53	102	1.00	13000	33.3	33.3	256	1440	140	1670	313	401000	2280	1.39
HSS 14 x 14 x 5/16	355.6	355.6	7.95	7.95	85.5	0.840	10900	40.7	40.7	218	1230	141	1410	320	338000	1920	1.40
HSS 12 x 12 x 3/4	304.8	304.8	19.05	19.05	164	1.61	20800	12.0	12.0	277	1820	115	2200	219	456000	3080	1.15
HSS 12 x 12 x 5/8	304.8	304.8	15.88	15.88	139	1.36	17700	15.2	15.2	242	1590	117	1890	233	392000	2640	1.16
HSS 12 x 12 x 1/2	304.8	304.8	12.70	12.70	113	1.11	14400	20.0	20.0	202	1330	118	1560	248	323000	2160	1.18
HSS 12 x 12 x 3/8	304.8	304.8	9.53	9.53	86.5	0.848	11000	28.0	28.0	158	1040	120	1210	262	250000	1660	1.19
HSS 12 x 12 x 5/16	304.8	304.8	7.95	7.95	72.8	0.714	9280	34.3	34.3	135	886	121	1030	269	211000	1400	1.19
HSS 12 x 12 x 1/4	304.8	304.8	6.35	6.35	58.7	0.576	7480	44.0	44.0	110	722	121	833	276	171000	1130	1.20
HSS 10 x 10 x 3/4	254	254	19.05	19.05	133	1.30	17000	9.3	9.3	152	1200	94.6	1470	168	254000	2080	0.951
HSS 10 x 10 x 5/8	254	254	15.88	15.88	114	1.12	14500	12.0	12.0	134	1060	96.1	1270	183	220000	1790	0.961
HSS 10 x 10 x 1/2	254	254	12.70	12.70	93.0	0.912	11800	16.0	16.0	113	890	97.9	1060	197	183000	1470	0.972
HSS 10 x 10 x 3/8	254	254	9.53	9.53	71.3	0.699	9090	22.7	22.7	89.3	703	99.1	825	211	142000	1140	0.983
HSS 10 x 10 x 5/16	254	254	7.95	7.95	60.1	0.589	7660	27.9	27.9	76.5	602	100	702	218	120000	961	0.989
HSS 10 x 10 x 1/4	254	254	6.35	6.35	48.6	0.477	6190	36.0	36.0	62.7	494	101	571	225	97800	778	0.994
HSS 10 x 10 x 3/16	254	254	4.78	4.78	36.9	0.362	4700	49.2	49.2	48.4	381	101	438	233	74700	593	1.00

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	mm	mm	mm												mm	mm	
HSS 4 x 4 x 1/2	101.6	101.6	12.70	12.70	32.2	0.316	4100	4.0	4.0	5.12	101	35.3	131	44.5	9070	193	0.363
HSS 4 x 4 x 3/8	101.6	101.6	9.53	9.53	25.7	0.252	3280	6.7	6.7	4.46	87.8	36.9	110	58.7	7640	158	0.374
HSS 4 x 4 x 5/16	101.6	101.6	7.95	7.95	22.1	0.217	2820	8.8	8.8	3.99	78.5	37.6	96.8	65.8	6720	138	0.379
HSS 4 x 4 x 1/4	101.6	101.6	6.35	6.35	18.2	0.178	2320	12.0	12.0	3.42	67.3	38.4	81.4	73.0	5640	114	0.385
HSS 4 x 4 x 3/16	101.6	101.6	4.78	4.78	14.1	0.138	1790	17.3	17.3	2.75	54.1	39.2	64.3	80.1	4440	89.2	0.390
HSS 4 x 4 x 1/8	101.6	101.6	3.18	3.18	9.61	0.0942	1230	27.9	27.9	1.96	38.6	39.9	44.9	87.3	3080	61.5	0.395
HSS 3.5 x 3.5 x 3/8	88.9	88.9	9.53	9.53	21.9	0.215	2790	5.3	5.3	2.81	63.2	31.7	80.5	46.0	4880	117	0.323
HSS 3.5 x 3.5 x 5/16	88.9	88.9	7.95	7.95	18.9	0.185	2410	7.2	7.2	2.54	57.1	32.5	71.4	53.1	4340	102	0.328
HSS 3.5 x 3.5 x 1/4	88.9	88.9	6.35	6.35	15.6	0.153	1990	10.0	10.0	2.20	49.5	33.2	60.5	60.3	3670	85.6	0.334
HSS 3.5 x 3.5 x 3/16	88.9	88.9	4.78	4.78	12.2	0.120	1550	14.6	14.6	1.79	40.3	34.0	48.2	67.4	2920	67.2	0.339
HSS 3.5 x 3.5 x 1/8	88.9	88.9	3.18	3.18	8.34	0.0818	1060	24.0	24.0	1.29	29.0	34.9	33.9	74.6	2040	46.6	0.345
HSS 3 x 3 x 3/8	76.2	76.2	9.53	9.53	18.1	0.178	2310	4.0	4.0	1.62	42.5	26.5	55.5	33.3	2870	81.4	0.272
HSS 3 x 3 x 5/16	76.2	76.2	7.95	7.95	15.8	0.155	2010	5.6	5.6	1.49	39.1	27.2	49.8	40.4	2590	72.1	0.278
HSS 3 x 3 x 1/4	76.2	76.2	6.35	6.35	13.1	0.128	1670	8.0	8.0	1.31	34.4	28.0	42.8	47.6	2230	61.0	0.283
HSS 3 x 3 x 3/16	76.2	76.2	4.78	4.78	10.2	0.100	1310	11.9	11.9	1.09	28.6	28.8	34.4	54.7	1790	48.3	0.288
HSS 3 x 3 x 1/8	76.2	76.2	3.18	3.18	7.08	0.0694	903	20.0	20.0	0.790	20.7	29.6	24.5	61.9	1260	33.8	0.294
HSS 2.5 x 2.5 x 1/4	63.5	63.5	6.35	6.35	10.6	0.104	1350	6.0	6.0	0.705	22.2	22.9	28.1	34.9	1220	40.5	0.232
HSS 2.5 x 2.5 x 3/16	63.5	63.5	4.78	4.78	8.34	0.0818	1060	9.3	9.3	0.594	18.7	23.7	23.0	42.0	995	32.5	0.238
HSS 2.5 x 2.5 x 1/8	63.5	63.5	3.18	3.18	5.81	0.0570	741	16.0	16.0	0.441	13.9	24.4	16.6	49.2	715	23.0	0.243
HSS 2 x 2 x 1/4	50.8	50.8	6.35	6.35	8.05	0.0789	1030	4.0	4.0	0.320	12.6	17.6	16.4	22.2	567	24.1	0.181
HSS 2 x 2 x 3/16	50.8	50.8	4.78	4.78	6.44	0.0632	821	6.6	6.6	0.279	11.0	18.4	13.8	29.3	479	19.8	0.187
HSS 2 x 2 x 1/8	50.8	50.8	3.18	3.18	4.54	0.0445	580	12.0	12.0	0.214	8.43	19.2	10.2	36.5	353	14.3	0.192
HSS 1.5 x 1.5 x 1/4	38.1	38.1	6.35	6.35	5.52	0.0541	703	2.0	2.0	0.109	5.72	12.5	7.88	9.53	199	11.8	0.131
HSS 1.5 x 1.5 x 3/16	38.1	38.1	4.78	4.78	4.54	0.0445	578	4.0	4.0	0.101	5.30	13.2	6.95	16.6	180	10.2	0.136
HSS 1.5 x 1.5 x 1/8	38.1	38.1	3.18	3.18	3.28	0.0322	418	8.0	8.0	0.0823	4.32	14.0	5.35	23.8	139	7.63	0.141
HSS 1.5 x 1.5 x 0.100	38.1	38.1	2.54	2.54	2.71	0.0266	345	11.0	11.0	0.0708	3.72	14.3	4.52	26.7	117	6.36	0.144
HSS 1.25 x 1.25 x 3/16	31.75	31.75	4.78	4.78	3.58	0.0351	457	2.6	2.6	0.0518	3.26	10.6	4.39	10.3	93.4	6.53	0.111
HSS 1.25 x 1.25 x 1/8	31.75	31.75	3.18	3.18	2.64	0.0259	337	6.0	6.0	0.0441	2.78	11.4	3.51	17.5	76.1	5.07	0.116
HSS 1.25 x 1.25 x 0.100	31.75	31.75	2.54	2.54	2.20	0.0216	280	8.5	8.5	0.0386	2.43	11.7	3.00	20.3	65.1	4.27	0.118

Notes:

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

Indicates Jumbo HSS.