

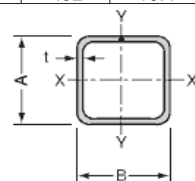
Section properties Square : 2 in. x 2 in. to 22 in. x 22 in.

Dimensions		Mass			Area	Second moment of area		Radius of gyration		Elastic section modulus		Plastic section modulus		Nominal length per tonne
Nominal size	Thickness	M1 kg/ft	M2 lb/ft	M3 kg/m	A in. ²	I _x in. ⁴	I _y in. ⁴	i _x in.	i _y in.	Z _x in. ³	Z _y in. ³	Z _{px} in. ³	Z _{py} in. ³	ft
2 x 2	0.180	1.89	4.17	6.21	1.227	0.653	0.653	0.729	0.729	0.653	0.653	0.817	0.817	529
	0.188	1.96	4.31	6.42	1.269	0.668	0.668	0.726	0.726	0.668	0.668	0.841	0.841	510
	0.250	2.45	5.40	8.04	1.589	0.766	0.766	0.694	0.694	0.766	0.766	1.00	1.00	408
3 x 3	0.180	3.00	6.61	9.85	1.947	2.52	2.52	1.14	1.14	1.68	1.68	2.03	2.03	333
	0.188	3.11	6.86	10.2	2.019	2.60	2.60	1.13	1.13	1.73	1.73	2.10	2.10	322
	0.250	3.99	8.79	13.1	2.589	3.16	3.16	1.10	1.10	2.10	2.10	2.61	2.61	251
3.5 x 3.5	0.180	3.56	7.83	11.7	2.307	4.16	4.16	1.34	1.34	2.38	2.38	2.84	2.84	281
	0.188	3.69	8.13	12.1	2.394	4.29	4.29	1.34	1.34	2.45	2.45	2.93	2.93	271
	0.250	4.76	10.5	15.6	3.089	5.29	5.29	1.31	1.31	3.02	3.02	3.69	3.69	210
4 x 4	0.180	4.11	9.06	13.5	2.667	6.38	6.38	1.55	1.55	3.19	3.19	3.78	3.78	243
	0.188	4.27	9.40	14.0	2.769	6.59	6.59	1.54	1.54	3.30	3.30	3.91	3.91	234
	0.250	5.53	12.2	18.2	3.589	8.22	8.22	1.51	1.51	4.11	4.11	4.97	4.97	181
	0.375	7.83	17.2	25.7	5.076	10.7	10.7	1.45	1.45	5.35	5.35	6.72	6.72	128
4.5 x 4.5	0.180	4.67	10.3	15.3	3.027	9.28	9.28	1.75	1.75	4.13	4.13	4.86	4.86	214
	0.188	4.85	10.7	15.9	3.144	9.60	9.60	1.75	1.75	4.27	4.27	5.03	5.03	206
	0.250	6.31	13.9	20.7	4.089	12.1	12.1	1.72	1.72	5.36	5.36	6.43	6.43	158
5 x 5	0.180	5.22	11.5	17.1	3.387	12.9	12.9	1.96	1.96	5.18	5.18	6.07	6.07	192
	0.188	5.43	11.9	17.8	3.519	13.4	13.4	1.95	1.95	5.36	5.36	6.29	6.29	184
	0.250	7.08	15.6	23.2	4.589	16.9	16.9	1.92	1.92	6.78	6.78	8.07	8.07	141
	0.375	10.1	22.3	33.3	6.576	22.8	22.8	1.86	1.86	9.11	9.11	11.2	11.2	99.0
	0.500	12.9	28.4	42.3	8.356	27.0	27.0	1.80	1.80	10.8	10.8	13.7	13.7	77.5
6 x 6	0.180	6.33	13.9	20.8	4.107	22.9	22.9	2.36	2.36	7.65	7.65	8.90	8.90	158
	0.188	6.58	14.5	21.6	4.269	23.8	23.8	2.36	2.36	7.93	7.93	9.24	9.24	152
	0.250	8.62	19.0	28.3	5.589	30.3	30.3	2.33	2.33	10.1	10.1	11.9	11.9	116
	0.375	12.5	27.4	40.9	8.076	41.6	41.6	2.27	2.27	13.9	13.9	16.8	16.8	80.0
	0.500	16.0	35.2	52.4	10.36	50.5	50.5	2.21	2.21	16.8	16.8	20.9	20.9	62.5
7 x 7	0.180	7.44	16.4	24.4	4.827	37.1	37.1	2.77	2.77	10.6	10.6	12.3	12.3	134
	0.188	7.74	17.0	25.4	5.019	38.5	38.5	2.77	2.77	11.0	11.0	12.7	12.7	129
	0.250	10.2	22.4	33.3	6.589	49.4	49.4	2.74	2.74	14.1	14.1	16.5	16.5	98.0
	0.313	12.5	27.5	41.0	8.108	59.5	59.5	2.71	2.71	17.0	17.0	20.1	20.1	80.0
	0.375	14.8	32.5	48.4	9.576	68.7	68.7	2.68	2.68	19.6	19.6	23.5	23.5	67.6
	0.500	19.1	42.0	62.5	12.36	84.6	84.6	2.62	2.62	24.2	24.2	29.6	29.6	52.4
8 x 8	0.180	8.55	18.8	28.1	5.547	56.1	56.1	3.18	3.18	14.0	14.0	16.2	16.2	117
	0.188	8.90	19.6	29.2	5.769	58.2	58.2	3.18	3.18	14.6	14.6	16.8	16.8	112
	0.250	11.7	25.8	38.4	7.589	75.1	75.1	3.15	3.15	18.8	18.8	21.9	21.9	85.5
	0.313	14.4	31.8	47.3	9.358	90.9	90.9	3.12	3.12	22.7	22.7	26.7	26.7	69.4
	0.375	17.1	37.6	56.0	11.08	106	106	3.09	3.09	26.4	26.4	31.3	31.3	58.5
	0.500	22.1	48.8	72.6	14.36	131	131	3.03	3.03	32.9	32.9	39.7	39.7	45.2
10 x 10	0.250	14.8	32.6	48.5	9.589	151	151	3.96	3.96	30.1	30.1	34.9	34.9	67.6
	0.313	18.3	40.3	60.0	11.86	183	183	3.93	3.93	36.7	36.7	42.8	42.8	54.6
	0.375	21.7	47.8	71.2	14.08	214	214	3.90	3.90	42.9	42.9	50.4	50.4	46.1
	0.500	28.3	62.3	92.9	18.36	271	271	3.84	3.84	54.2	54.2	64.6	64.6	35.3
	0.625	34.6	76.2	113	22.43	321	321	3.78	3.78	64.2	64.2	77.6	77.6	28.9
12 x 12	0.250	17.9	39.4	58.6	11.59	265	265	4.78	4.78	44.1	44.1	50.8	50.8	55.9
	0.313	22.1	48.8	72.6	14.36	324	324	4.75	4.75	54.0	54.0	62.6	62.6	45.2
	0.375	26.3	58.0	86.4	17.08	380	380	4.72	4.72	63.4	63.4	73.9	73.9	38.0
	0.500	34.5	75.9	113	22.36	485	485	4.66	4.66	80.9	80.9	95.4	95.4	29.0
	0.625	42.3	93.2	139	27.43	580	580	4.60	4.60	96.7	96.7	116	116	23.6
	0.750	49.8	110	163	32.30	665	665	4.54	4.54	111	111	134	134	20.1
14 x 14	0.313	26.0	57.2	85.3	16.86	522	522	5.57	5.57	74.6	74.6	86.1	86.1	38.5
	0.375	31.0	68.2	102	20.08	615	615	5.54	5.54	87.9	87.9	102	102	32.3
	0.500	40.6	89.5	133	26.36	791	791	5.48	5.48	113	113	132	132	24.6
	0.625	50.0	110	164	32.43	952	952	5.42	5.42	136	136	161	161	20.0
	0.750	59.1	130	194	38.30	1,100	1,100	5.36	5.36	157	157	188	188	16.9
	0.875	67.8	149	222	43.97	1,230	1,230	5.30	5.30	176	176	213	213	14.7
16 x 16	0.375	35.6	78.4	117	23.08	931	931	6.35	6.35	116	116	134	134	28.1
	0.500	46.8	103	154	30.36	1,200	1,200	6.29	6.29	150	150	175	175	21.4
	0.625	57.7	127	189	37.43	1,450	1,450	6.23	6.23	182	182	214	214	17.3
	0.750	68.3	150	224	44.30	1,690	1,690	6.17	6.17	211	211	250	250	14.6
	0.875	78.6	173	258	50.97	1,900	1,900	6.11	6.11	238	238	285	285	12.7
18 x 18	0.500	53.0	117	174	34.36	1,740	1,740	7.11	7.11	193	193	224	224	18.9
	0.625	65.4	144	215	42.43	2,110	2,110	7.05	7.05	234	234	274	274	15.3
	0.750	77.6	171	254	50.30	2,460	2,460	6.99	6.99	273	273	322	322	12.9
	0.875	89.4	197	293	57.97	2,780	2,780	6.93	6.93	309	309	368	368	11.2
20 x 20	0.500	59.1	130	194	38.36	2,410	2,410	7.93	7.93	241	241	279	279	16.9
	0.625	73.1	161	240	47.43	2,940	2,940	7.87	7.87	294	294	342	342	13.7
	0.750	86.8	191	285	56.30	3,430	3,430	7.81	7.81	343	343	403	403	11.5
	0.875	100	221	329	64.97	3,900	3,900	7.75	7.75	390	390	461	461	10.0
22 x 22	0.750	96.1	212	315	62.30	4,630	4,630	8.62	8.62	421	421	492	492	10.4

NOTE

The calculation of section properties are based on the following corner geometry, as standard.

Thickness(T)	Inside corner profile	Outside corner profile
nominal	1.0T	2.0T



Section properties Rectangular : 3 in. x 2 in. to 24 in. x 12 in.

Dimensions		Mass			Area	Second moment of area		Radius of gyration		Elastic section modulus		Plastic section modulus		Nominal length per tonne
Nominal size	Thickness	M1 kg/ft	M2 lb/ft	M3 kg/m	A in. ²	I _x in. ⁴	I _y in. ⁴	i _x in.	i _y in.	Z _x in. ³	Z _y in. ³	Z _{px} in. ³	Z _{py} in. ³	ft
3 x 2	0.180	2.45	5.39	8.03	1.587	1.81	0.952	1.07	0.775	1.20	0.952	1.52	1.14	408
	0.188	2.53	5.58	8.32	1.644	1.86	0.977	1.06	0.771	1.24	0.977	1.57	1.18	395
	0.250	3.22	7.09	10.6	2.089	2.21	1.15	1.03	0.742	1.47	1.15	1.92	1.44	311
4 x 2	0.180	3.00	6.61	9.85	1.947	3.75	1.25	1.39	0.802	1.88	1.25	2.40	1.47	333
	0.188	3.11	6.86	10.2	2.019	3.87	1.29	1.38	0.798	1.93	1.29	2.48	1.52	322
	0.250	3.99	8.79	13.1	2.589	4.69	1.54	1.35	0.770	2.35	1.54	3.09	1.88	251
4 x 3	0.180	3.56	7.83	11.7	2.307	5.07	3.24	1.48	1.19	2.53	2.16	3.09	2.54	281
	0.188	3.69	8.13	12.1	2.394	5.23	3.34	1.48	1.18	2.62	2.23	3.20	2.62	271
	0.250	4.76	10.5	15.6	3.089	6.45	4.10	1.45	1.15	3.23	2.74	4.03	3.30	210
5 x 2	0.180	3.56	7.83	11.7	2.307	6.67	1.55	1.70	0.820	2.67	1.55	3.47	1.80	281
	0.188	3.69	8.13	12.1	2.394	6.89	1.60	1.70	0.816	2.75	1.60	3.59	1.86	271
	0.250	4.76	10.5	15.6	3.089	8.48	1.92	1.66	0.789	3.39	1.92	4.51	2.32	