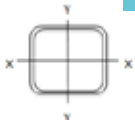


SQUARE Hollow Sections

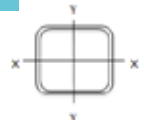


BS EN 10219/MANUFACTURER'S STANDARD

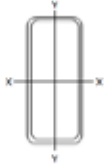
Designation		Weight			Cross Sectional Area	Ratio for Local Buckling	Second Moment Of Area	Radius Of Gyration	Elastic Modulus	Plastic Modulus	Torsional Constant		Superficial Area per metre length	Nominal Length per tonne
Size	Thickness										J	C		
B x B	T	M			A	B/t	I	R	Z	S	J	C	As	L
mm	mm	Kg/m	Kg/ft	lb/ft	cm ²		cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m
25 x 25	1.60	1.12	0.343	0.76	1.43	10.6	1.28	0.94	1.02	1.24	2.12	1.54	0.095	889.8
	2.00	1.36	0.416	0.92	1.74	7.5	1.48	0.92	1.19	1.47	2.53	1.80	0.093	733.4
	2.30	1.53	0.467	1.03	1.95	5.9	1.61	0.91	1.29	1.62	2.80	1.97	0.098	652.5
	2.50	1.64	0.500	1.10	2.09	5.0	1.69	0.90	1.35	1.71	2.97	2.07	0.091	609.8
	3.00	1.89	0.576	1.27	2.41	3.3	1.84	0.87	1.47	1.91	3.33	2.27	0.090	529.0
38 x 38	1.60	1.78	0.542	1.19	2.26	18.8	4.92	1.47	2.59	3.06	7.90	3.90	0.147	562.8
	2.00	2.18	0.664	1.46	2.78	14.0	5.88	1.46	3.10	3.70	9.60	4.67	0.145	458.7
	2.30	2.47	0.753	1.66	3.15	11.5	6.54	1.44	3.44	4.15	10.80	5.20	0.144	404.6
	2.50	2.66	0.811	1.79	3.39	10.2	6.95	1.43	3.66	4.44	11.60	5.53	0.143	375.9
	3.00	3.12	0.949	2.09	3.97	7.7	7.86	1.41	4.14	5.10	13.30	6.28	0.142	321.0
	4.00	3.95	1.203	2.65	5.03	4.5	9.28	1.36	4.88	6.22	16.40	7.48	0.138	253.4
50 x 50	1.60	2.38	0.725	1.60	3.03	26.3	11.70	1.96	4.68	5.46	18.50	7.03	0.195	420.2
	1.90	2.80	0.852	1.88	3.56	21.3	13.60	1.95	5.42	6.37	21.60	8.15	0.193	357.6
	2.00	2.93	0.894	1.97	3.74	20.0	14.10	1.95	5.66	6.66	22.60	8.51	0.193	340.9
	2.30	3.34	1.020	2.24	4.25	16.7	15.90	1.93	6.34	7.52	25.60	9.55	0.192	299.6
	2.50	3.60	1.100	2.42	4.59	15.0	16.90	1.92	6.78	8.07	27.50	10.22	0.191	277.6
	3.00	4.25	1.290	2.85	5.41	11.7	19.50	1.90	7.79	9.39	32.10	11.80	0.190	235.5
	4.00	5.45	1.660	3.67	6.95	7.5	23.70	1.85	9.49	11.70	40.40	14.40	0.186	183.3
	4.50	6.02	1.830	4.05	7.67	6.1	25.50	1.82	10.20	12.80	44.10	15.60	0.185	166.1
	5.00	6.56	2.000	4.41	8.36	5.0	27.00	1.80	10.80	13.70	47.50	16.60	0.183	152.4
	6.00	7.56	2.300	5.08	9.63	3.3	29.50	1.75	11.80	15.30	53.20	18.20	0.179	132.2
65 x 65	2.00	3.88	1.180	2.60	4.94	27.5	32.30	2.56	9.90	11.60	50.90	14.90	0.253	258.0
	2.30	4.42	1.350	2.97	5.63	23.3	36.40	2.54	11.20	13.10	57.90	16.90	0.252	226.2
	2.50	4.78	1.460	3.21	6.09	21.0	39.10	2.53	12.00	14.10	62.40	18.10	0.251	209.2
	3.00	5.66	1.720	3.80	7.21	16.7	45.40	2.51	14.00	16.60	73.30	21.00	0.250	176.7
	4.00	7.34	2.240	4.93	9.35	11.3	56.60	2.46	17.40	21.00	93.70	26.30	0.246	136.3
	4.50	8.14	2.480	5.47	10.37	9.4	61.60	2.44	18.90	23.10	103.10	28.70	0.245	122.9
	5.00	8.91	2.720	5.99	11.36	8.0	66.10	2.41	20.30	25.00	112.00	30.90	0.243	112.2
	6.00	10.39	3.170	6.98	13.23	5.8	73.90	2.36	22.70	28.50	128.20	34.70	0.239	96.3

SQUARE Hollow Sections

BS EN 10219/MANUFACTURER'S STANDARD



Designation		Weight			Cross Sectional Area	Ratio for Local Buckling	Second Moment Of Area	Radius Of Gyration	Elastic Modulus	Plastic Modulus	Torsional Constant		Superficial Area per metre length	Nominal Length per tonne
Size	Thickness										J	C		
B x B	T	M			A	B/t	I	R	Z	S	J	C	As	L
mm	mm	Kg/m	Kg/ft	lb/ft	cm ²		cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m
75 x 75	2.30	5.14	1.570	3.46	6.55	27.6	57.10	2.95	15.20	17.70	90.00	22.90	0.292	194.4
	2.50	5.56	1.700	3.74	7.09	25.0	61.40	2.94	16.40	19.10	97.10	24.60	0.291	179.7
	3.00	6.60	2.010	4.44	8.41	20.0	71.60	2.92	19.10	22.50	114.50	28.70	0.290	151.5
	4.00	8.59	2.620	5.77	10.95	13.8	90.20	2.87	24.10	28.80	147.30	36.30	0.286	116.4
	4.50	9.55	2.910	6.42	12.17	11.7	98.60	2.85	26.30	31.70	162.70	39.70	0.285	104.7
	5.00	10.48	3.200	7.05	13.36	10.0	106.30	2.82	28.40	34.50	177.40	42.90	0.283	95.4
100 x 100	2.30	6.95	2.120	4.67	8.85	38.5	139.70	3.97	27.90	32.30	217.50	41.90	0.392	143.9
	3.00	8.96	2.730	6.02	11.41	28.3	177.00	3.94	35.40	41.20	278.70	53.20	0.390	111.7
	4.00	11.73	3.580	7.88	14.95	20.0	226.40	3.89	45.30	53.30	362.00	68.10	0.386	85.2
	4.50	13.08	3.990	8.79	16.67	17.2	249.30	3.87	49.90	59.00	401.90	75.10	0.385	76.4
	5.00	14.41	4.390	9.68	18.36	15.0	271.10	3.84	54.20	64.60	440.50	81.70	0.383	69.4
	6.00	16.98	5.180	11.41	21.63	11.7	311.50	3.79	62.30	75.10	514.20	94.10	0.379	58.9
	6.30	17.47	5.320	11.74	22.25	10.9	314.20	3.76	62.80	76.40	536.00	97.00	0.373	57.3
	8.00	21.39	6.520	14.37	27.24	7.5	365.90	3.67	73.20	91.10	644.60	114.20	0.366	46.8
	9.00	23.53	7.170	15.81	29.98	6.1	390.60	3.61	78.10	98.60	700.40	122.80	0.361	42.5
125 x 125	3.00	11.31	3.450	7.60	14.41	36.7	354.50	4.96	56.70	65.60	552.70	85.10	0.490	88.4
	4.00	14.87	4.530	9.99	18.95	26.3	457.20	4.91	73.20	85.30	722.00	109.90	0.486	67.2
	4.50	16.62	5.060	11.17	21.17	22.8	505.80	4.89	80.90	94.80	803.90	121.70	0.485	60.2
	5.00	18.33	5.590	12.32	23.36	20.0	552.60	4.86	88.40	104.10	883.80	133.00	0.483	54.5
	6.00	21.69	6.610	14.58	27.63	15.8	640.90	4.82	102.50	121.90	1038.10	154.50	0.479	46.1
	6.30	22.41	6.830	15.06	28.55	14.8	652.60	4.78	104.40	124.90	1086.50	160.10	0.473	44.6
	8.00	27.67	8.430	18.59	35.24	10.6	775.30	4.69	124.10	151.00	1325.40	191.70	0.466	36.1
	9.00	30.60	9.330	20.56	38.98	8.9	837.80	4.64	134.10	164.90	1454.10	208.20	0.461	32.7
150 x 150	3.00	13.67	4.170	9.18	17.41	45.0	622.70	5.98	83.00	95.50	964.60	124.60	0.590	73.2
	4.00	18.01	5.490	12.10	22.95	32.5	807.80	5.93	107.70	124.90	1264.80	161.70	0.586	55.5
	4.50	20.15	6.140	13.54	25.67	28.3	896.30	5.91	119.50	139.10	1410.80	179.50	0.585	49.5
	5.00	22.26	6.780	14.96	28.36	25.0	982.10	5.89	130.90	153.00	1554.10	196.80	0.583	44.9
	6.00	26.40	8.050	17.74	33.63	20.0	1145.90	5.84	152.80	179.90	1832.70	229.80	0.579	37.9
	6.30	27.36	8.340	18.38	34.85	18.8	1173.70	5.80	156.50	185.10	1921.60	238.80	0.573	36.6
	8.00	33.95	10.350	22.81	43.24	13.8	1411.80	5.71	188.20	226.00	2364.20	289.00	0.566	29.5
	9.00	37.66	11.480	25.31	47.98	11.7	1537.40	5.66	205.00	248.20	2608.10	316.00	0.561	26.6
	12.50	48.70	14.850	32.73	62.04	7.0	1817.40	5.41	242.30	305.60	3321.30	389.30	0.536	20.5



RECTANGULAR Hollow Sections

BS EN 10219/MANUFACTURER'S STANDARD

Designation		Weight			Area Of Section	Ratio for Local Buckling		Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Torsional Constant		Superficial Area per metre length	Nominal Length per tonne
Size	Thickness					Flange	Web	Axis	Axis	Axis	Axis	Axis	Axis	Axis	Axis	J	C		
H x B	T	M			A	B/t	H/t	x-x	y-y	x-x	y-y	x-x	y-y			As	L		
mm	mm	Kg/m	Kg/ft	lb/ft	cm ²			cm ⁴	cm ⁴	cm	cm	cm ³	cm ³	cm ³	cm ³	cm ⁴	cm ⁴	m ² /m	m
50 x 25	1.60	1.75	0.534	1.18	2.23	10.6	26.3	7.0	2.37	1.77	1.03	2.81	1.90	3.53	2.17	5.85	3.29	0.145	570.8
	2.00	2.15	0.655	1.44	2.74	7.5	20.0	8.4	2.81	1.75	1.01	3.35	2.25	4.26	2.62	7.06	3.92	0.143	465.4
	2.30	2.44	0.742	1.64	3.10	5.9	16.7	9.3	3.10	1.73	1.00	3.72	2.48	4.78	2.92	7.90	4.34	0.142	410.6
	2.50	2.62	0.799	1.76	3.34	5.0	15.0	9.9	3.28	1.72	0.99	3.95	2.62	5.11	3.12	8.43	4.60	0.141	381.5
	3.00	3.07	0.935	2.06	3.91	3.3	11.7	11.2	3.67	1.69	0.97	4.47	2.93	5.86	3.56	9.64	5.18	0.140	325.9
65 x 38	1.60	2.46	0.748	1.65	3.13	18.8	35.6	17.8	7.79	2.39	1.58	5.49	4.10	6.70	4.63	17.40	6.91	0.201	407.3
	1.90	2.89	0.880	1.94	3.68	15.0	29.2	20.7	9.00	2.37	1.56	6.36	4.74	7.82	5.40	20.30	8.00	0.199	346.5
	2.00	3.03	0.923	2.03	3.86	14.0	27.5	21.6	9.39	2.37	1.56	6.64	4.94	8.18	5.64	21.20	8.35	0.199	330.3
	2.30	3.45	1.050	2.32	4.39	11.5	23.3	24.2	10.50	2.35	1.55	7.46	5.53	9.24	6.37	24.00	9.36	0.198	290.2
	2.50	3.72	1.130	2.50	4.74	10.2	21.0	25.9	11.20	2.34	1.54	7.97	5.90	9.92	6.83	25.80	10.00	0.197	268.8
	3.00	4.39	1.340	2.95	5.59	7.7	16.7	29.8	12.80	2.31	1.51	9.18	6.75	11.50	7.93	30.00	11.50	0.196	228.0
	4.00	5.64	1.720	3.79	7.19	4.5	11.3	36.5	15.50	2.25	1.47	11.24	8.17	14.50	9.89	37.50	14.00	0.192	177.2
75 x 50	1.90	3.54	1.080	2.38	4.51	21.3	34.5	35.5	19.10	2.81	2.05	9.48	7.62	11.40	8.70	39.50	12.50	0.243	282.3
	2.00	3.72	1.130	2.50	4.74	20.0	32.5	37.2	19.90	2.80	2.05	9.91	7.96	12.00	9.10	41.40	13.10	0.243	268.9
	2.30	4.24	1.290	2.85	5.40	16.7	27.6	41.9	22.40	2.79	2.04	11.17	8.96	13.60	10.30	46.90	14.80	0.242	235.8
	2.50	4.58	1.400	3.08	5.84	15.0	25.0	45.0	24.00	2.77	2.03	11.99	9.60	14.60	11.00	50.50	15.90	0.241	218.2
	3.00	5.42	1.650	3.64	6.91	11.7	20.0	52.2	27.80	2.75	2.00	13.91	11.10	17.10	12.90	59.30	18.40	0.240	184.4
	4.00	7.02	2.140	4.72	8.95	7.5	13.8	65.0	34.30	2.69	1.96	17.32	13.70	21.70	16.30	75.30	22.90	0.236	142.4
	4.50	7.79	2.370	5.23	9.92	6.1	11.7	70.6	37.20	2.67	1.94	18.82	14.90	23.80	17.90	82.70	24.90	0.235	128.4
	5.00	8.52	2.600	5.73	10.86	5.0	10.0	75.6	39.70	2.64	1.91	20.17	15.90	25.70	19.30	89.50	26.70	0.233	117.3
	6.00	9.92	3.020	6.66	12.63	3.3	7.5	84.4	44.10	2.58	1.87	22.50	17.60	29.20	21.90	101.80	29.80	0.229	100.8
100 x 50	1.90	4.29	1.310	2.88	5.45	21.3	47.6	71.6	24.50	3.62	2.12	14.30	9.80	17.60	10.90	58.70	16.90	0.293	233.2
	2.00	4.50	1.370	3.03	5.74	20.0	45.0	75.0	25.70	3.62	2.12	15.00	10.30	18.50	11.50	61.60	17.70	0.293	222.0
	2.30	5.14	1.570	3.46	6.55	16.7	38.5	84.8	29.00	3.60	2.10	17.00	11.60	21.00	13.00	69.90	20.00	0.292	194.4
	2.50	5.56	1.700	3.74	7.09	15.0	35.0	91.2	31.10	3.59	2.09	18.20	12.40	22.70	14.00	75.40	21.50	0.291	179.7
	3.00	6.60	2.010	4.44	8.41	11.7	28.3	106.5	36.10	3.56	2.07	21.30	14.40	26.70	16.40	88.60	25.00	0.290	151.5
	4.00	8.59	2.620	5.77	10.95	7.5	20.0	134.1	44.90	3.50	2.03	26.80	18.00	34.10	20.90	113.00	31.30	0.286	116.4
	4.50	9.55	2.910	6.42	12.17	6.1	17.2	146.6	48.90	3.47	2.00	29.30	19.50	37.60	23.00	124.30	34.20	0.285	104.7
	5.00	10.48	3.200	7.05	13.36	5.0	15.0	158.2	52.50	3.44	1.98	31.60	21.00	40.80	25.00	134.90	36.80	0.283	95.4
	6.00	12.27	3.740	8.25	15.63	3.3	11.7	178.8	58.70	3.38	1.94	35.80	23.50	46.90	28.50	154.20	41.40	0.279	81.5
	6.30	12.52	3.820	8.41	15.95	2.9	10.9	175.7	58.20	3.32	1.91	35.10	23.30	46.90	28.60	158.10	42.10	0.273	79.9

RECTANGULAR Hollow Sections

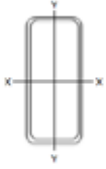


BS EN 10219/MANUFACTURER'S STANDARD

Designation		Weight			Area Of Section	Ratio for Local Buckling		Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Torsional Constant		Superficial Area per metre length	Nominal Length per tonne
Size	Thickness					Flange	Web	Axis	Axis	Axis	Axis	Axis	Axis	Axis	Axis	J	C		
H x B	T	M			A	B/t	H/t	x-x	y-y	x-x	y-y	x-x	y-y			As	L		
mm	mm	Kg/m	Kg/ft	lb/ft	cm ²			cm ⁴	cm ⁴	cm	cm	cm ³	cm ³	cm ⁴	cm ⁴	m ² /m	m		
100 x 75	3.00	7.78	2.370	5.23	9.91	20.0	28.3	141.8	91.10	3.78	3.03	28.40	24.30	33.90	27.90	176.60	39.10	0.340	128.6
	3.20	8.26	2.520	5.55	10.53	18.4	26.3	149.8	96.20	3.77	3.02	30.00	25.60	35.90	29.50	187.30	41.30	0.339	121.0
	4.00	10.16	3.100	6.83	12.95	13.8	20.0	180.2	115.40	3.73	2.99	36.00	30.80	43.70	35.90	228.20	49.70	0.336	98.4
	4.50	11.32	3.450	7.61	14.42	11.7	17.2	197.9	126.50	3.71	2.96	39.60	33.70	48.30	39.60	252.70	54.60	0.335	88.4
	5.00	12.45	3.790	8.36	15.86	10.0	15.0	214.6	137.00	3.68	2.94	42.90	36.50	52.70	43.20	276.20	59.20	0.333	80.3
	6.00	14.63	4.460	9.83	18.63	7.5	11.7	245.1	156.00	3.63	2.89	49.00	41.60	61.00	49.90	320.40	67.70	0.329	68.4
	6.30	14.99	4.570	10.07	19.10	6.9	10.9	244.9	156.30	3.58	2.86	49.00	41.70	61.60	50.50	332.50	69.50	0.323	66.7
125 x 50	2.50	6.55	2.000	4.40	8.34	15.0	45.0	159.6	38.10	4.37	2.14	25.50	15.20	32.30	17.00	101.30	27.10	0.341	152.8
	3.00	7.78	2.370	5.23	9.91	11.7	36.7	187.0	44.40	4.34	2.12	29.90	17.70	38.10	20.00	119.00	31.60	0.340	128.6
	4.00	10.16	3.100	6.83	12.95	7.5	26.3	237.5	55.60	4.28	2.07	38.00	22.20	49.00	25.50	152.10	39.80	0.336	98.4
	4.50	11.32	3.450	7.61	14.42	6.1	22.8	260.7	60.60	4.25	2.05	41.70	24.20	54.20	28.10	167.40	43.50	0.335	88.4
	5.00	12.45	3.790	8.36	15.86	5.0	20.0	282.5	65.20	4.22	2.03	45.20	26.10	59.10	30.60	182.00	47.00	0.333	80.3
	6.00	14.63	4.460	9.83	18.63	3.3	15.8	322.0	73.30	4.16	1.98	51.50	29.30	68.30	35.10	208.50	53.10	0.329	68.4
	6.30	14.99	4.570	10.07	19.10	2.9	14.8	319.4	73.30	4.09	1.96	51.10	29.30	68.30	35.50	214.60	54.20	0.323	66.7
125 x 75	3.00	8.96	2.730	6.02	11.41	20.0	36.7	242.8	110.50	4.61	3.11	38.90	29.50	47.30	33.30	242.90	49.50	0.390	111.7
	4.00	11.73	3.580	7.88	14.95	13.8	26.3	310.8	140.70	4.56	3.07	49.70	37.50	61.10	43.00	314.50	63.10	0.386	85.2
	4.50	13.08	3.990	8.79	16.67	11.7	22.8	342.4	154.50	4.53	3.04	54.80	41.20	67.70	47.50	348.60	69.50	0.385	76.4
	5.00	14.41	4.390	9.68	18.36	10.0	20.0	372.5	167.70	4.50	3.02	59.60	44.70	74.10	52.00	381.50	75.60	0.383	69.4
	6.00	16.98	5.180	11.41	21.63	7.5	15.8	428.3	191.80	4.45	2.98	68.50	51.10	86.20	60.30	443.80	86.70	0.379	58.9
	9.00	23.53	7.170	15.81	29.98	3.3	8.9	534.5	238.00	4.22	2.82	85.50	63.50	112.70	78.70	596.40	111.90	0.361	42.5
150 x 50	3.00	8.96	2.730	6.02	11.41	11.7	45.0	298.5	52.60	5.12	2.15	39.80	21.10	51.40	23.50	150.20	38.30	0.390	111.7
	4.00	11.73	3.580	7.88	14.95	7.5	32.5	381.4	66.20	5.05	2.10	50.90	26.50	66.50	30.10	192.10	48.30	0.386	815.2
	4.50	13.08	3.990	8.79	16.67	6.1	28.3	419.8	72.20	5.02	2.08	56.00	28.90	73.60	33.20	211.60	52.90	0.385	76.4
	5.00	14.41	4.390	9.68	18.36	5.0	25.0	456.3	77.90	4.99	2.06	60.80	31.10	80.50	36.20	230.10	57.10	0.383	69.4
	6.00	16.98	5.180	11.41	21.63	3.3	20.0	523.5	87.90	4.92	2.02	69.80	35.20	93.50	41.70	264.00	64.80	0.379	58.9
	6.30	17.47	5.320	11.74	22.25	2.9	18.8	522.8	88.50	4.85	1.99	69.70	35.40	94.60	42.40	272.20	66.30	0.373	57.3

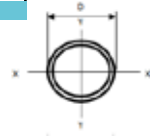
RECTANGULAR Hollow Sections

BS EN 10219/MANUFACTURER'S STANDARD



Designation		Weight			Area Of Section	Ratio for Local Buckling		Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Torsional Constant		Superficial Area per metre length	Nominal Length per tonne
Size	Thickness					Flange	Web	Axis	Axis	Axis	Axis	Axis	Axis	Axis	Axis	J	C		
H x B	T	M			A	B/t	H/t	x-x	y-y	x-x	y-y	x-x	y-y	x-x	y-y	J	C	As	L
mm	mm	Kg/m	Kg/ft	lb/ft	cm ²			cm ⁴	cm ⁴	cm	cm	cm ³	cm ³	cm ³	cm ³	cm ⁴	cm ⁴	m ² /m	m
150 x 75	3.00	10.13	3.090	6.81	12.91	20.0	45.0	379.6	130.00	5.42	3.17	50.60	34.70	62.50	38.70	311.80	59.80	0.440	98.7
	4.00	13.30	4.060	8.94	16.95	13.8	32.5	488.0	165.90	5.37	3.13	65.10	44.20	81.10	50.10	404.30	76.60	0.436	75.2
	4.50	14.85	4.530	9.98	18.92	11.7	28.3	538.9	182.50	5.34	3.11	71.90	48.70	90.00	55.50	448.40	84.40	0.435	67.3
	5.00	16.37	4.990	11.00	20.86	10.0	25.0	587.7	198.40	5.31	3.08	78.40	52.90	98.60	60.70	491.00	91.90	0.433	61.1
	6.00	19.34	5.890	12.99	24.63	7.5	20.0	679.1	227.60	5.25	3.04	90.50	60.70	115.10	70.60	572.00	105.80	0.429	51.7
	6.30	19.94	6.080	13.40	25.40	6.9	18.8	685.6	230.90	5.20	3.01	91.40	61.60	117.20	72.20	595.80	109.10	0.423	50.2
	8.00	24.53	7.480	16.48	31.24	4.4	13.8	806.3	269.00	5.08	2.93	107.50	71.70	140.80	86.30	714.50	128.50	0.416	40.8
	9.00	27.07	8.250	18.19	34.48	3.3	11.7	865.8	287.30	5.01	2.89	115.40	76.60	153.00	93.60	775.20	138.10	0.411	36.9
150 x 100	4.00	14.87	4.530	9.99	18.95	20.0	32.5	594.6	318.60	5.60	4.10	79.30	63.70	95.70	72.50	661.60	104.90	0.486	67.2
	4.50	16.62	5.060	11.17	21.17	17.2	28.3	658.1	352.00	5.58	4.08	87.70	70.40	106.30	80.50	736.10	116.10	0.485	60.2
	5.00	18.33	5.590	12.32	23.36	15.0	25.0	719.2	384.00	5.55	4.05	95.90	76.80	116.70	88.30	808.70	126.80	0.483	54.5
	6.00	21.69	6.610	14.58	27.63	11.7	20.0	834.7	444.20	5.50	4.01	111.30	88.80	136.70	103.30	948.30	147.10	0.479	46.1
	6.30	22.41	6.830	15.06	28.55	10.9	18.8	848.3	452.70	5.45	3.98	113.10	90.50	139.90	105.90	991.60	152.30	0.473	44.6
	8.00	27.67	8.430	18.59	35.24	7.5	13.8	1008.1	535.70	5.35	3.90	134.40	107.10	169.20	127.90	1205.90	181.80	0.466	36.1
	9.00	30.60	9.330	20.56	38.98	6.1	11.7	1089.5	577.50	5.29	3.85	145.30	115.50	184.80	139.50	1320.30	197.20	0.461	32.7
200 x 100	4.00	18.01	5.490	12.10	22.95	20.0	45.0	1199.7	410.80	7.23	4.23	120.00	83.20	148.00	91.70	985.40	141.80	0.586	55.5
	4.50	20.15	6.140	13.54	25.67	17.2	39.4	1331.4	454.60	7.20	4.21	133.10	90.90	164.90	102.00	1097.10	157.10	0.585	49.6
	5.00	22.26	6.780	14.96	28.36	15.0	35.0	1459.3	496.90	7.17	4.19	145.90	99.40	181.40	112.10	1206.30	171.90	0.583	44.9
	6.00	26.40	8.050	17.74	33.63	11.7	28.3	1703.3	576.90	7.12	4.14	170.30	115.40	213.30	131.50	1417.00	200.10	0.579	37.9
	6.30	27.36	8.340	18.38	34.85	10.9	26.7	1739.2	591.10	7.06	4.12	173.90	118.20	219.10	135.40	1482.80	207.60	0.573	36.6
	8.00	33.95	10.350	22.81	43.24	7.5	20.0	2090.8	705.40	6.95	4.04	209.10	141.10	267.30	164.70	1810.70	249.60	0.566	29.5
	9.00	37.66	11.480	25.31	47.98	6.1	17.2	2275.6	764.40	6.89	3.99	227.60	152.90	293.40	180.50	1988.30	271.80	0.561	26.6
	10.00	41.26	12.580	27.73	52.57	5.0	15.0	2444.4	817.70	6.82	3.94	244.40	163.50	318.10	195.20	2154.10	292.10	0.557	24.2
	12.00	47.15	14.370	31.68	60.06	3.3	11.7	2606.7	875.60	6.59	3.82	260.70	175.10	350.00	215.30	2414.40	321.80	0.538	21.2
	12.50	48.70	14.850	32.73	62.04	3.0	11.0	2658.9	892.20	6.55	3.79	265.90	178.40	359.10	220.80	2473.80	328.80	0.536	20.5

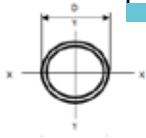
CIRCULAR Hollow Sections



BS EN 10219/MANUFACTURER'S STANDARD

Designation		Weight	Cross Sectional Area	Second Moment of Area	Radius of Gyration	Elastic Modulus	Plastic Modulus	Torsional inertia constant	Torsional modulus constant	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling
Size	Thickness											
OD	T	M	A	I	i	Wel	Wpl	Lt	Ct	As	L	B/T
mm	mm	Kg/m	cm ²	cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m	
21.3	2.0	0.952	1.21	0.57	0.69	0.54	0.75	1.14	1.07	0.07	1050.49	10.65
21.3	2.5	1.159	1.48	0.66	0.67	0.62	0.89	1.33	1.25	0.07	862.75	8.52
21.3	3.0	1.354	1.72	0.74	0.66	0.70	1.01	1.48	1.39	0.07	738.60	7.10
26.9	2.0	1.228	1.56	1.22	0.88	0.91	1.24	2.44	1.81	0.08	814.24	13.45
26.9	2.5	1.504	1.92	1.44	0.87	1.07	1.49	2.88	2.14	0.08	664.74	10.76
26.9	3.0	1.768	2.25	1.63	0.85	1.21	1.72	3.27	2.43	0.08	565.54	8.97
33.7	2.0	1.564	1.99	2.51	1.12	1.49	2.01	5.02	2.98	0.11	639.57	16.85
33.7	2.5	1.924	2.45	3.00	1.11	1.78	2.44	6.00	3.56	0.11	519.86	13.48
33.7	3.0	2.271	2.89	3.44	1.09	2.04	2.84	6.88	4.08	0.11	440.27	11.23
42.4	2.0	1.993	2.54	5.19	1.43	2.45	3.27	10.38	4.90	0.13	501.84	21.20
42.4	2.5	2.460	3.13	6.26	1.41	2.95	3.99	12.52	5.91	0.13	406.51	16.96
42.4	3.0	2.915	3.71	7.25	1.40	3.42	4.67	14.49	6.84	0.13	343.05	14.13
42.4	4.0	3.788	4.83	8.99	1.36	4.24	5.92	17.98	8.48	0.13	263.99	10.60
48.3	2.0	2.284	2.91	7.81	1.64	3.23	4.29	15.62	6.47	0.15	437.89	24.15
48.3	2.5	2.824	3.60	9.46	1.62	3.92	5.25	18.92	7.83	0.15	354.14	19.32
48.3	3.0	3.351	4.27	11.00	1.61	4.55	6.17	22.00	9.11	0.15	298.37	16.10
48.3	4.0	4.370	5.57	13.77	1.57	5.70	7.87	27.54	11.40	0.15	228.83	12.08
48.3	5.0	5.339	6.80	16.15	1.54	6.69	9.42	32.31	13.38	0.15	187.29	9.66
60.3	2.0	2.876	3.66	15.58	2.06	5.17	6.80	31.16	10.34	0.19	347.76	30.15
60.3	2.5	3.564	4.54	18.99	2.05	6.30	8.36	37.99	12.60	0.19	280.62	24.12
60.3	3.0	4.239	5.40	22.22	2.03	7.37	9.86	44.45	14.74	0.19	235.89	20.10
60.3	4.0	5.554	7.07	28.17	2.00	9.34	12.70	56.35	18.69	0.19	180.06	15.08
60.3	5.0	6.819	8.69	33.48	1.96	11.10	15.33	66.95	22.21	0.19	146.65	12.06
76.1	2.0	3.655	4.66	31.98	2.62	8.40	10.98	63.96	16.81	0.24	273.61	38.05
76.1	2.5	4.538	5.78	39.19	2.60	10.30	13.55	78.37	20.60	0.24	220.38	30.44
76.1	3.0	5.408	6.89	46.10	2.59	12.11	16.04	92.19	24.23	0.24	184.90	25.37
76.1	4.0	7.112	9.06	59.06	2.55	15.52	20.81	118.11	31.04	0.24	140.60	19.03
76.1	5.0	8.767	11.17	70.92	2.52	18.64	25.32	141.84	37.28	0.24	114.06	15.22
76.1	6.0	10.373	13.21	81.76	2.49	21.49	29.56	163.52	42.97	0.24	96.41	12.68
76.1	6.3	10.845	13.81	84.82	2.48	22.29	30.78	169.64	44.58	0.24	92.21	12.08
88.9	2.0	4.286	5.46	51.57	3.07	11.60	15.11	103.14	23.20	0.28	233.31	44.45
88.9	2.5	5.327	6.79	63.37	3.06	14.26	18.67	126.75	28.51	0.28	187.73	35.56
88.9	3.0	6.355	8.10	74.76	3.04	16.82	22.15	149.53	33.64	0.28	157.35	29.63
88.9	4.0	8.375	10.67	96.34	3.00	21.67	28.85	192.68	43.35	0.28	119.40	22.23
88.9	5.0	10.346	13.18	116.37	2.97	26.18	35.24	232.75	52.36	0.28	96.66	17.78
88.9	6.0	12.267	15.63	134.94	2.94	30.36	41.31	269.88	60.72	0.28	81.52	14.82
88.9	6.3	12.833	16.35	140.24	2.93	31.55	43.07	280.47	63.10	0.28	77.92	14.11

CIRCULAR Hollow Sections

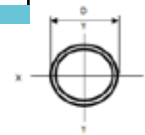


BS EN 10219/MANUFACTURER'S STANDARD

Designation		Weight	Cross Sectional Area	Second Moment of Area	Radius of Gyration	Elastic Modulus	Plastic Modulus	Torsional inertia constant	Torsional modulus constant	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling
Size	Thickness											
OD	T	M	A	I	i	Wel	Wpl	Lt	Ct	As	L	B/T
mm	mm	Kg/m	cm ²	cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m	
101.6	2.0	4.913	6.26	77.63	3.52	15.28	19.84	155.26	30.56	0.32	203.56	50.80
101.6	2.5	6.110	7.78	95.61	3.50	18.82	24.56	191.22	37.64	0.32	163.67	40.64
101.6	3.0	7.295	9.29	113.04	3.49	22.25	29.17	226.07	44.50	0.32	137.08	33.87
101.6	4.0	9.628	12.26	146.28	3.45	28.80	38.12	292.57	57.59	0.32	103.87	25.40
101.6	5.0	11.912	15.17	177.47	3.42	34.93	46.70	354.94	69.87	0.32	83.95	20.32
101.6	6.0	14.146	18.02	206.68	3.39	40.68	54.91	413.35	81.37	0.32	70.69	16.93
101.6	6.3	14.807	18.86	215.07	3.38	42.34	57.30	430.13	84.67	0.32	67.54	16.13
114.3	2.5	6.893	8.78	137.26	3.95	24.02	31.25	274.52	48.03	0.36	145.08	45.72
114.3	3.0	8.234	10.49	162.55	3.94	28.44	37.17	325.10	56.88	0.36	121.44	38.10
114.3	4.0	10.881	13.86	211.07	3.90	36.93	48.69	422.13	73.86	0.36	91.91	28.58
114.3	5.0	13.478	17.17	256.92	3.87	44.96	59.77	513.84	89.91	0.36	74.20	22.86
114.3	6.0	16.025	20.41	300.21	3.83	52.53	70.45	600.42	105.06	0.36	62.40	19.05
114.3	6.3	16.780	21.38	312.71	3.82	54.72	73.57	625.43	109.44	0.36	59.60	18.14
114.3	8.0	20.972	26.72	379.49	3.77	66.40	90.57	758.98	132.81	0.36	47.68	14.29
139.7	3.0	10.114	12.88	301.09	4.83	43.11	56.07	602.18	86.21	0.44	98.88	46.57
139.7	4.0	13.386	17.05	392.86	4.80	56.24	73.68	785.72	112.49	0.44	74.70	34.93
139.7	5.0	16.610	21.16	480.54	4.77	68.80	90.76	961.08	137.59	0.44	60.21	27.94
139.7	6.0	19.783	25.20	564.26	4.73	80.78	107.33	1128.52	161.56	0.44	50.55	23.28
139.7	6.3	20.726	26.40	588.62	4.72	84.27	112.20	1177.24	168.54	0.44	48.25	22.17
139.7	8.0	25.983	33.10	720.29	4.66	103.12	138.93	1440.58	206.24	0.44	38.49	17.46
168.3	3.0	12.230	15.58	532.28	5.85	63.25	81.98	1064.57	126.51	0.53	81.77	56.10
168.3	4.0	16.208	20.65	697.09	5.81	82.84	108.00	1394.18	165.68	0.53	61.70	42.08
168.3	5.0	20.136	25.65	855.85	5.78	101.70	133.38	1711.69	203.41	0.53	49.66	33.66
168.3	6.0	24.015	30.59	1008.69	5.74	119.87	158.12	2017.39	239.74	0.53	41.64	28.05
168.3	6.3	25.170	32.06	1053.42	5.73	125.18	165.42	2106.84	250.37	0.53	39.73	26.71
168.3	8.0	31.626	40.29	1297.27	5.67	154.16	205.74	2594.54	308.32	0.53	31.62	21.04
168.3	10.0	39.039	49.73	1563.98	5.61	185.86	250.92	3127.97	371.71	0.53	25.62	16.83
177.8	4.0	17.145	21.84	825.09	6.15	92.81	120.85	1650.17	185.62	0.56	58.33	44.45
177.8	5.0	21.308	27.14	1013.97	6.11	114.06	149.34	2027.94	228.11	0.56	46.93	35.56
177.8	6.0	25.421	32.38	1196.22	6.08	134.56	177.16	2392.43	269.12	0.56	39.34	29.63
177.8	6.3	26.646	33.94	1249.62	6.07	140.56	185.38	2499.24	281.13	0.56	37.53	28.22
177.8	8.0	33.500	42.68	1541.44	6.01	173.39	230.83	3082.87	346.78	0.56	29.85	22.23
177.8	10.0	41.382	52.72	1861.98	5.94	209.45	281.90	3723.96	418.89	0.56	24.17	17.78
177.8	12.0	49.067	62.51	2159.06	5.88	242.86	330.45	4318.11	485.73	0.56	20.38	14.82
177.8	12.5	50.957	64.91	2229.79	5.86	250.82	342.20	4459.59	501.64	0.56	19.62	14.22

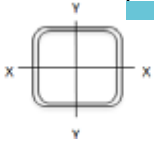
CIRCULAR Hollow Sections

BS EN 10219/MANUFACTURER'S STANDARD



Designation		Weight	Cross Sectional Area	Second Moment of Area	Radius of Gyration	Elastic Modulus	Plastic Modulus	Torsional inertia constant	Torsional modulus constant	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling
Size	Thickness											
OD	T	M	A	I	i	Wel	Wpl	Lt	Ct	As	L	B/T
mm	mm	Kg/m	cm ²	cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m	
193.7	4.0	18.713	23.84	1072.79	6.71	110.77	143.97	2145.58	221.54	0.61	53.44	48.43
193.7	5.0	23.268	29.64	1320.23	6.67	136.32	178.08	2640.46	272.63	0.61	24.98	38.74
193.7	6.0	27.774	35.38	1559.72	6.64	161.05	211.46	3119.45	322.09	0.61	36.01	32.28
193.7	6.3	29.116	37.09	1630.05	6.63	168.31	221.33	3260.09	336.61	0.61	34.35	30.75
193.7	8.0	36.637	46.67	2015.54	6.57	208.11	276.05	4031.07	416.22	0.61	27.29	24.21
193.7	10.0	45.303	57.71	2441.59	6.50	252.10	337.79	4883.18	504.20	0.61	22.07	19.37
193.7	12.0	53.772	68.50	2839.20	6.44	293.15	396.75	5678.40	586.31	0.61	18.60	16.14
193.7	12.5	55.858	71.16	2934.31	6.42	302.97	411.07	5868.62	605.95	0.61	17.90	15.50
219.1	4.0	21.219	27.03	1563.84	7.61	142.75	185.09	3127.67	285.50	0.69	47.13	54.78
219.1	5.0	26.400	33.63	1928.04	7.57	176.00	229.24	3856.09	351.99	0.69	37.88	43.82
219.1	6.0	31.532	40.17	2281.95	7.54	208.30	272.54	4563.89	416.60	0.69	31.71	36.52
219.1	6.3	33.062	42.12	2386.14	7.53	217.81	285.37	4772.28	435.63	0.69	30.25	34.78
219.1	8.0	41.648	53.06	2959.63	7.47	270.16	356.68	5919.27	540.33	0.69	24.01	27.39
219.1	10.0	51.567	65.69	3598.44	7.40	328.47	437.56	7196.88	656.95	0.69	19.39	21.91
219.1	12.0	61.289	78.07	4199.88	7.33	383.38	515.26	8399.76	766.75	0.69	16.32	18.26
219.1	12.5	63.688	81.13	4344.58	7.32	396.58	534.20	8659.16	793.17	0.69	15.70	17.53
244.5	5.0	29.532	37.62	2698.58	8.47	220.74	286.84	5397.16	441.49	0.77	33.86	48.90
244.5	6.0	35.291	44.96	3198.53	8.43	261.64	341.37	6397.07	523.28	0.77	28.34	40.75
244.5	6.3	37.009	47.14	3346.03	8.42	273.70	357.54	6692.05	547.41	0.77	27.02	38.81
244.5	8.0	46.660	59.44	4160.45	8.37	340.32	447.63	8320.89	680.65	0.77	21.43	30.56
244.5	10.0	57.831	73.67	5073.15	8.30	414.98	550.24	10146.29	829.96	0.77	17.29	24.45
244.5	12.0	68.806	87.65	5938.34	8.23	485.75	649.25	11876.69	971.51	0.77	14.53	20.38
244.5	12.5	71.518	91.11	6147.42	8.21	502.86	673.45	12294.84	1005.71	0.77	13.98	19.56
273	5.0	33.046	42.10	3780.81	9.48	276.98	359.16	7561.63	553.97	0.86	30.26	54.60
273	6.0	39.508	50.33	4487.08	9.44	328.72	427.81	8974.17	657.45	0.86	25.31	45.50
273	6.3	41.437	52.79	4695.82	9.43	344.02	448.20	9391.65	688.03	0.86	24.13	43.33
273	8.0	52.282	66.60	5851.71	9.37	428.70	561.97	11703.43	857.39	0.86	19.13	34.13
273	10.0	64.860	82.62	7154.09	9.31	524.11	692.02	14308.19	1048.22	0.86	15.42	27.30
273	12.0	77.240	98.39	8396.14	9.24	615.10	818.03	16792.28	1230.20	0.86	12.95	22.75
273	12.5	80.304	102.30	8697.45	9.22	637.18	848.90	17394.90	1274.35	0.86	12.45	21.84

SQUARE Hollow Sections

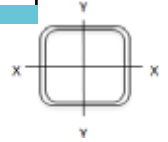


ASTM A-500/MANUFACTURER'S STANDARD

Designation		Weight	Cross Sectional Area	Second Moment of Area	Radius of Gyration	Elastic Modulus	Plastic Modulus	Torsional inertia constant	Torsional modulus constant	Superficial Area per metre length	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling
Size	Thickness												
B x B	T	M	A	I	i	Wel	Wpl	Lt	Ct	As	As	L	Flange
mm	mm	Kg/m	cm ²	cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m ² /m	m	B/T
19 x 19	1.6	0.822	1.05	0.51	0.70	0.54	0.67	0.88	0.82	0.07	0.07	1215.92	6.88
25 x 25	1.6	1.160	1.43	1.28	0.94	1.02	1.24	2.12	1.54	0.09	0.10	889.79	10.63
25 x 25	2.0	1.364	1.74	1.48	0.92	1.19	1.47	2.53	1.80	0.09	0.09	733.39	7.50
25 x 25	2.3	1.600	1.95	1.61	0.91	1.29	1.62	2.80	1.97	0.09	0.09	652.55	5.87
25 x 25	2.5	1.640	2.09	1.69	0.90	1.35	1.71	2.97	2.07	0.09	0.09	609.79	5.00
25 x 25	3.0	2.010	2.41	1.84	0.87	1.47	1.91	3.33	2.27	0.09	0.09	528.97	3.33
32 x 32	1.6	1.510	1.88	2.84	1.23	1.78	2.12	4.62	2.68	0.12	0.12	677.72	15.00
32 x 32	1.8	1.690	2.09	3.11	1.22	1.95	2.33	5.11	2.94	0.12	0.12	609.23	12.78
32 x 32	2.0	1.860	2.30	3.36	1.21	2.10	2.54	5.58	3.18	0.12	0.12	554.59	11.00
32 x 32	2.3	2.110	2.60	3.71	1.20	2.32	2.84	6.24	3.52	0.12	0.12	490.68	8.91
32 x 32	2.5	2.189	2.79	3.92	1.19	2.45	3.02	6.66	3.72	0.12	0.12	456.75	7.80
32 x 32	3.0	2.670	3.25	4.38	1.16	2.74	3.44	7.62	4.18	0.12	0.12	392.18	5.67
32 x 32	3.2	2.830	3.42	4.54	1.15	2.84	3.59	7.96	4.34	0.12	0.12	372.19	5.00
38 x 38	1.6	1.810	2.26	4.92	1.47	2.59	3.06	7.90	3.90	0.15	0.15	562.75	18.75
38 x 38	2.0	2.230	2.78	5.88	1.46	3.10	3.70	9.60	4.67	0.15	0.15	458.73	14.00
38 x 38	2.3	2.540	3.15	6.54	1.44	3.44	4.15	10.80	5.20	0.14	0.14	404.64	11.52
38 x 38	2.5	2.660	3.39	6.94	1.43	3.65	4.44	11.56	5.53	0.14	0.14	375.88	10.20
38 x 38	3.0	3.240	3.97	7.85	1.41	4.13	5.10	13.35	6.28	0.14	0.14	321.02	7.67
38 x 38	4.0	3.947	5.03	9.26	1.36	4.87	6.22	16.38	7.48	0.14	0.14	253.36	4.50
50 x 50	1.6	2.410	3.03	11.71	1.96	4.68	5.46	18.48	7.03	0.19	0.20	420.19	26.25
50 x 50	1.9	2.797	3.56	13.55	1.95	5.42	6.37	21.61	8.15	0.19	0.19	357.57	21.32
50 x 50	2.0	2.934	3.74	14.15	1.95	5.66	6.66	22.63	8.51	0.19	0.19	340.89	20.00
50 x 50	2.3	3.410	4.25	15.86	1.93	6.34	7.52	25.61	9.55	0.19	0.19	299.58	16.74
50 x 50	2.5	3.602	4.59	16.94	1.92	6.78	8.07	27.53	10.22	0.19	0.19	277.59	15.00
50 x 50	3.0	4.245	5.41	19.47	1.90	7.79	9.39	32.13	11.76	0.19	0.19	235.55	11.67
50 x 50	4.0	5.454	6.95	23.74	1.85	9.49	11.73	40.42	14.43	0.19	0.19	183.35	7.50
50 x 50	4.5	6.020	7.67	25.50	1.82	10.20	12.76	44.09	15.56	0.18	0.19	166.12	6.11
50 x 50	5.0	6.560	8.36	27.04	1.80	10.82	13.70	47.46	16.56	0.18	0.18	152.45	5.00
50 x 50	6.0	7.562	9.63	29.45	1.75	11.78	15.32	53.23	18.20	0.18	0.18	132.24	3.33

SQUARE Hollow Sections

ASTM A-500/MANUFACTURER'S STANDARD



Designation		Weight	Cross Sectional Area	Second Moment of Area	Radius of Gyration	Elastic Modulus	Plastic Modulus	Torsional inertia constant	Torsional modulus constant	Superficial Area per metre length	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling
Size	Thickness												
B x B	T	M	A	I	i	Wel	Wpl	Lt	Ct	As	As	L	Flange
mm	mm	Kg/m	cm ²	cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m ² /m	m	B/T
65 x 65	1.6	3.133	3.99	26.52	2.58	8.16	9.44	41.38	12.25	0.25	0.25	319.13	35.63
65 x 65	2.0	3.876	4.94	32.31	2.56	9.94	11.58	50.92	14.93	0.25	0.25	258.03	27.50
65 x 65	2.3	4.421	5.63	36.45	2.54	11.21	13.13	57.86	16.86	0.25	0.25	226.18	23.26
65 x 65	2.5	4.780	6.09	39.10	2.53	12.03	14.14	62.39	18.10	0.25	0.25	209.21	21.00
65 x 65	3.0	5.659	7.21	45.42	2.51	13.97	16.57	73.35	21.05	0.25	0.25	176.72	16.67
65 x 65	4.0	7.338	9.35	56.64	2.46	17.43	21.05	93.72	26.34	0.25	0.25	136.27	11.25
65 x 65	4.5	8.139	10.37	61.59	2.44	18.95	23.10	103.14	28.70	0.24	0.24	122.86	9.44
65 x 65	5.0	8.915	11.36	66.10	2.41	20.34	25.03	112.03	30.88	0.24	0.24	112.17	8.00
65 x 65	6.0	10.388	13.23	73.91	2.36	22.74	28.53	128.23	34.72	0.24	0.24	96.26	5.83
75 x 75	1.6	3.636	4.63	41.29	2.99	11.01	12.69	64.09	16.52	0.29	0.29	275.04	41.88
75 x 75	2.3	5.144	6.55	57.10	2.95	15.23	17.74	89.98	22.88	0.29	0.29	194.42	27.61
75 x 75	2.5	5.565	7.09	61.38	2.94	16.37	19.12	97.13	24.60	0.29	0.29	179.70	25.00
75 x 75	3.0	6.601	8.41	71.62	2.92	19.10	22.49	114.54	28.73	0.29	0.29	151.50	20.00
75 x 75	4.0	8.594	10.95	90.19	2.87	24.05	28.76	147.32	36.28	0.29	0.29	116.36	13.75
75 x 75	4.5	9.552	12.17	98.55	2.85	26.28	31.68	162.68	39.71	0.28	0.28	104.68	11.67
75 x 75	5.0	10.485	13.36	106.33	2.82	28.35	34.46	177.35	42.92	0.28	0.28	95.98	10.00
75 x 75	6.0	12.272	15.63	120.16	2.77	32.04	39.58	204.62	48.70	0.28	0.28	81.49	7.50
100 x 100	2.3	6.494	8.85	139.73	3.97	27.95	32.26	217.48	41.95	0.39	0.39	143.91	38.48
100 x 100	3.0	8.956	11.41	177.05	3.94	35.41	41.21	278.68	53.19	0.39	0.39	111.66	28.33
100 x 100	4.0	11.734	14.95	226.35	3.89	45.27	53.30	362.01	68.10	0.39	0.39	85.22	20.00
100 x 100	4.5	13.085	16.67	249.29	3.87	49.86	59.04	401.87	75.07	0.38	0.38	76.42	17.22
100 x 100	5.0	14.410	18.36	271.10	3.84	54.22	64.59	440.52	81.72	0.38	0.38	69.40	15.00
100 x 100	6.0	16.982	21.63	311.47	3.79	62.29	75.10	514.16	94.12	0.38	0.38	58.89	11.67
125 x 125	3.0	11.311	14.41	354.50	4.96	56.72	65.56	552.66	85.14	0.49	0.49	88.41	36.67
125 x 125	4.0	14.874	18.95	457.23	4.91	73.16	85.33	721.99	109.92	0.49	0.49	67.23	26.25
125 x 125	4.5	16.617	21.17	505.83	4.89	80.93	94.84	803.85	121.67	0.48	0.48	60.18	22.78
125 x 125	5.0	18.335	23.36	552.62	4.86	88.42	104.10	883.82	133.01	0.48	0.48	54.54	20.00
125 x 125	6.0	21.692	27.63	640.89	4.82	102.54	121.87	1038.10	154.49	0.48	0.48	46.10	15.83
150 x 150	3.0	13.666	17.41	622.73	5.98	83.03	95.53	964.61	124.60	0.59	0.59	73.18	45.00
150 x 150	4.0	18.014	22.95	807.82	5.93	107.71	124.87	1264.76	161.73	0.59	0.59	55.51	32.50
150 x 150	4.5	20.150	25.67	896.30	5.91	119.51	139.08	1410.79	179.51	0.58	0.58	49.63	28.33
150 x 150	5.0	22.260	28.36	982.12	5.89	130.95	152.98	1554.13	196.79	0.58	0.58	44.92	25.00
150 x 150	6.0	26.402	33.63	1145.91	5.84	152.79	179.88	1832.69	229.84	0.58	0.58	37.88	20.00



RECTANGULAR Hollow Sections

ASTM A-500/MANUFACTURER'S STANDARD

Designation		Weight	Cross Sectional Area	Second Moment of Area	Second Moment of Area	Radius of Gyration	Radius of Gyration	Elastic Modulus	Elastic Modulus	Plastic Modulus	Plastic Modulus	Torsional inertia constant	Torsional modulus constant	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling	Ratio for Local Buckling
Size	Thickness																
B x H	T	M	A	I _x	I _y	r _x	r _y	Z _x	Z _y	S _x	S _y	J	C	A _s	L	Flange	Web
mm	mm	Kg/m	cm ²	cm ⁴	cm ⁴	cm	cm	cm ³	cm ³	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m	B/T	H/T
19 x 38	1.6	1.330	1.66	2.91	0.97	1.33	0.77	1.53	1.02	1.95	1.20	2.46	1.79	0.11	769.41	6.88	18.75
25 x 50	1.6	1.790	2.23	7.02	2.37	1.77	1.03	2.81	1.90	3.53	2.17	5.85	3.29	0.14	570.82	10.63	26.25
25 x 50	2.0	2.149	2.74	8.38	2.81	1.75	1.01	3.35	2.25	4.26	2.62	7.06	3.92	0.14	465.43	7.50	20.00
25 x 50	2.3	2.510	3.10	9.31	3.10	1.73	1.00	3.72	2.48	4.78	2.92	7.90	4.34	0.14	410.64	5.87	16.74
25 x 50	2.5	2.621	3.34	9.89	3.28	1.72	0.99	3.95	2.62	5.11	3.12	8.43	4.60	0.14	381.51	5.00	15.00
25 x 50	3.0	3.190	3.91	11.17	3.67	1.69	0.97	4.47	2.93	5.86	3.56	9.64	5.18	0.14	325.95	3.33	11.67
25 x 75	1.6	2.380	3.03	19.74	3.47	2.55	1.07	5.26	2.78	6.81	3.11	9.93	5.05	0.19	420.19	10.63	41.88
25 x 75	1.9	2.797	3.56	22.84	3.98	2.53	1.06	6.09	3.18	7.94	3.61	11.50	5.80	0.19	357.57	8.16	34.47
25 x 75	2.0	2.934	3.74	23.84	4.14	2.53	1.05	6.36	3.31	8.31	3.77	12.01	6.04	0.19	340.89	7.50	32.50
25 x 75	2.3	3.338	4.25	26.70	4.59	2.51	1.04	7.12	3.67	9.37	4.23	13.46	6.72	0.19	299.58	5.87	27.61
25 x 75	2.5	3.602	4.59	28.52	4.87	2.49	1.03	7.60	3.89	10.06	4.53	14.38	7.14	0.19	277.59	5.00	25.00
25 x 75	3.0	4.245	5.41	32.72	5.49	2.46	1.01	8.72	4.39	11.69	5.21	16.50	8.10	0.19	235.55	3.33	20.00
25 x 75	4.0	5.454	6.95	39.72	6.46	2.39	0.96	10.59	5.17	14.56	6.39	20.01	9.61	0.19	183.35	1.25	13.75
25 x 75	4.5	6.020	7.67	42.56	6.81	2.36	0.94	11.35	5.45	15.82	6.89	21.40	10.19	0.18	166.12	0.56	11.67
38 x 65	1.6	2.455	3.13	17.83	7.79	2.39	1.58	5.49	4.10	6.70	4.63	17.39	6.91	0.20	407.29	18.75	35.63
38 x 65	1.9	2.886	3.68	20.68	9.00	2.37	1.56	6.36	4.74	7.82	5.40	20.30	8.00	0.20	346.48	15.00	29.21
38 x 65	2.0	3.028	3.86	21.59	9.39	2.37	1.56	6.64	4.94	8.18	5.64	21.24	8.35	0.20	330.28	14.00	27.50
38 x 65	2.3	3.446	4.39	24.23	10.50	2.35	1.55	7.46	5.53	9.24	6.37	24.01	9.36	0.20	290.17	11.52	23.26
38 x 65	2.5	3.720	4.74	25.91	11.20	2.34	1.54	7.97	5.90	9.92	6.83	25.79	10.00	0.20	268.81	10.20	21.00
38 x 65	3.0	4.387	5.59	29.83	12.83	2.31	1.51	9.18	6.75	11.55	7.93	30.02	11.50	0.20	227.96	7.67	16.67
38 x 65	3.2	4.646	5.92	31.29	13.42	2.30	1.51	9.63	7.06	12.17	8.35	31.62	12.05	0.20	215.23	6.88	15.31
38 x 65	4.0	5.643	7.19	36.52	15.53	2.25	1.47	11.24	8.17	14.46	9.89	37.55	14.04	0.19	177.22	4.50	11.25
38 x 75	1.6	2.706	3.45	25.34	8.85	2.71	1.60	6.76	4.66	8.34	5.21	21.15	8.03	0.22	369.49	18.75	41.88
38 x 75	1.9	3.184	4.06	29.44	10.24	2.69	1.59	7.85	5.39	9.75	6.08	24.71	9.30	0.22	314.03	15.00	34.47
38 x 75	2.0	3.342	4.26	30.77	10.68	2.69	1.58	8.20	5.62	10.21	6.36	25.86	9.71	0.22	299.25	14.00	32.50
38 x 75	2.3	3.807	4.85	34.61	11.97	2.67	1.57	9.23	6.30	11.55	7.19	29.24	10.90	0.22	262.65	11.52	27.61
38 x 75	2.5	4.113	5.24	37.06	12.78	2.66	1.56	9.88	6.73	12.42	7.72	31.42	11.66	0.22	243.15	10.20	25.00
38 x 75	3.0	4.858	6.19	42.83	14.67	2.63	1.54	11.42	7.72	14.49	8.98	36.62	13.43	0.22	205.86	7.67	20.00
38 x 75	3.2	5.149	6.56	44.99	15.37	2.62	1.53	12.00	8.09	15.29	9.46	38.60	14.09	0.22	194.23	6.88	18.44
38 x 75	4.0	6.271	7.99	52.84	17.85	2.57	1.50	14.09	9.40	18.26	11.25	45.93	16.48	0.21	159.48	4.50	13.75
38 x 75	4.5	6.938	8.84	57.12	19.17	2.54	1.47	15.23	10.09	19.95	12.25	50.04	17.77	0.21	144.13	3.44	11.67

RECTANGULAR Hollow Sections



ASTM A-500/MANUFACTURER'S STANDARD

Designation		Weight	Cross Sectional Area	Second Moment of Area	Second Moment of Area	Radius of Gyration	Radius of Gyration	Elastic Modulus	Elastic Modulus	Plastic Modulus	Plastic Modulus	Torsional inertia constant	Torsional modulus constant	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling	Ratio for Local Buckling
Size	Thickness																
B x H	T	M	A	I _x	I _y	i _x	i _y	Z _x	Z _y	S _x	S _y	J	C	A _s	L	Flange	Web
mm	mm	Kg/m	cm ²	cm ⁴	cm ⁴	cm	cm	cm ³	cm ³	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m	B/T	H/T
50 x 75	1.6	3.008	3.83	30.51	16.39	2.82	2.07	8.14	6.56	9.75	7.40	33.67	10.78	0.24	332.46	26.25	41.88
50 x 75	1.9	3.542	4.51	35.54	19.05	2.81	2.05	9.48	7.62	11.42	8.65	39.46	12.55	0.24	282.29	21.32	34.47
50 x 75	2.0	3.719	4.74	37.16	19.91	2.80	2.05	9.91	7.96	11.96	9.06	41.35	13.12	0.24	268.92	20.00	32.50
50 x 75	2.3	4.241	5.40	41.90	22.41	2.79	2.04	11.17	8.96	13.56	10.26	46.92	14.78	0.24	235.81	16.74	27.61
50 x 75	2.5	4.584	5.84	44.95	24.00	2.77	2.03	11.99	9.60	14.59	11.04	50.54	15.85	0.24	218.17	15.00	25.00
50 x 75	3.0	5.423	6.91	52.17	27.76	2.75	2.00	13.91	11.10	17.09	12.91	59.27	18.38	0.24	184.40	11.67	20.00
50 x 75	4.0	7.024	8.95	64.96	34.34	2.69	1.96	17.32	13.74	21.66	16.33	75.33	22.88	0.24	142.37	7.50	13.75
50 x 75	4.5	7.786	9.92	70.56	37.19	2.67	1.94	18.82	14.87	23.75	17.88	82.66	24.86	0.23	128.44	6.11	11.67
50 x 75	5.0	8.522	10.86	75.65	39.75	2.64	1.91	20.17	15.90	25.71	19.33	89.52	26.67	0.23	117.34	5.00	10.00
50 x 75	6.0	9.917	12.63	84.37	44.06	2.58	1.87	22.50	17.63	29.23	21.92	101.82	29.79	0.23	100.84	3.33	7.50
50 x 100	1.6	3.636	4.63	61.29	21.08	3.64	2.13	12.26	8.43	15.04	9.33	50.08	14.53	0.29	275.04	26.25	57.50
50 x 100	1.9	4.288	5.46	71.62	24.55	3.62	2.12	14.32	9.82	17.65	10.94	58.75	16.94	0.29	233.20	21.32	47.63
50 x 100	2.0	4.504	5.74	74.98	25.67	3.62	2.12	15.00	10.27	18.50	11.46	61.59	17.73	0.29	222.05	20.00	45.00
50 x 100	2.3	5.143	6.55	84.83	28.95	3.60	2.10	16.97	11.58	21.03	13.01	69.95	20.02	0.29	194.42	16.74	38.48
50 x 100	2.5	5.565	7.09	91.20	31.06	3.59	2.09	18.24	12.42	22.67	14.01	75.39	21.49	0.29	179.70	15.00	35.00
50 x 100	3.0	6.600	8.41	106.46	36.06	3.56	2.07	21.29	14.42	26.66	16.44	88.56	25.01	0.29	151.50	11.67	28.33
50 x 100	4.0	8.594	10.95	134.14	44.95	3.50	2.03	26.83	17.98	34.10	20.93	112.99	31.35	0.29	116.36	7.50	20.00
50 x 100	4.5	9.552	12.17	146.61	48.87	3.47	2.00	29.32	19.55	37.56	23.00	124.25	34.18	0.28	104.69	6.11	17.22
50 x 100	5.0	10.485	13.36	158.19	52.45	3.44	1.98	31.64	20.98	40.84	24.95	134.87	36.80	0.28	95.38	5.00	15.00
50 x 100	6.0	12.272	15.63	178.75	58.67	3.38	1.94	35.75	23.47	46.90	28.52	154.20	41.43	0.28	81.49	3.33	11.67
50 x 125	2.3	6.046	7.70	148.24	35.50	4.39	2.15	23.72	14.20	29.94	15.75	93.92	25.25	0.34	165.39	16.74	49.35
50 x 125	2.5	6.546	8.34	159.61	38.12	4.37	2.14	25.54	15.25	32.31	16.98	101.26	27.13	0.34	152.76	15.00	45.00
50 x 125	3.0	7.778	9.91	187.02	44.35	4.34	2.12	29.92	17.74	38.11	19.96	119.03	31.64	0.34	128.57	11.67	36.67
50 x 125	4.0	10.164	12.95	237.53	55.56	4.28	2.07	38.01	22.22	49.03	25.53	152.13	39.82	0.34	98.38	7.50	26.25
50 x 125	4.5	11.319	14.42	260.68	60.55	4.25	2.05	41.71	24.22	54.17	28.12	167.45	43.52	0.33	88.35	6.11	22.78
50 x 125	5.0	12.447	15.86	282.46	65.16	4.22	2.03	45.19	26.07	59.10	30.58	181.95	46.95	0.33	80.34	5.00	20.00
50 x 125	6.0	14.627	18.63	322.00	73.28	4.16	1.98	51.52	29.31	68.32	35.12	208.52	53.10	0.33	68.37	3.33	15.83
50 x 150	2.3	6.949	8.85	235.71	42.04	5.16	2.18	31.43	16.82	40.28	18.49	118.46	30.49	0.39	143.91	16.74	60.22
50 x 150	3.0	8.956	11.41	298.55	52.65	5.12	2.15	39.81	21.06	51.43	23.49	150.22	38.28	0.39	111.66	11.67	45.00
50 x 150	4.0	11.734	14.95	381.39	66.16	5.05	2.10	50.85	26.47	66.47	30.13	192.14	48.30	0.39	85.22	7.50	32.50
50 x 150	4.5	13.085	16.67	419.82	72.23	5.02	2.08	55.98	28.89	73.60	33.24	211.60	52.85	0.38	76.42	6.11	28.33
50 x 150	5.0	14.410	18.36	456.29	77.87	4.99	2.06	60.84	31.15	80.48	36.20	230.05	57.11	0.38	69.40	5.00	25.00
50 x 150	6.0	16.982	21.63	523.47	87.89	4.92	2.02	69.80	35.16	93.48	41.72	263.99	64.77	0.38	58.89	3.33	20.00



RECTANGULAR Hollow Sections

ASTM A-500/MANUFACTURER'S STANDARD

Designation		Weight	Cross Sectional Area	Second Moment of Area	Second Moment of Area	Radius of Gyration	Radius of Gyration	Elastic Modulus	Elastic Modulus	Plastic Modulus	Plastic Modulus	Torsional inertia constant	Torsional modulus constant	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling	Ratio for Local Buckling
Size	Thickness																
B x H	T	M	A	I _x	I _y	i _x	i _y	Z _x	Z _y	S _x	S _y	J	C	A _s	L	Flange	Web
mm	mm	Kg/m	cm ²	cm ⁴	cm ⁴	cm	cm	cm ³	cm ³	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m	B/T	H/T
75 x 100	2.3	6.046	7.70	112.28	72.30	3.82	3.06	22.46	19.28	26.64	21.92	138.34	30.98	0.34	165.39	27.61	38.48
75 x 100	3.0	7.778	9.91	141.75	91.07	3.78	3.03	28.35	24.29	33.93	27.89	176.64	39.09	0.34	128.57	20.00	28.33
75 x 100	3.2	8.264	10.53	149.79	96.17	3.77	3.02	29.96	25.64	35.95	29.53	187.25	41.30	0.34	121.01	18.44	26.25
75 x 100	4.0	10.164	12.95	180.25	115.42	3.73	2.99	36.05	30.78	43.70	35.86	228.25	49.70	0.34	98.38	13.75	20.00
75 x 100	4.5	11.319	14.42	197.95	126.55	3.71	2.96	39.59	33.75	48.30	39.61	252.68	54.60	0.33	88.35	11.67	17.22
75 x 100	5.0	12.447	15.86	214.64	137.00	3.68	2.94	42.93	36.53	52.72	43.21	276.18	59.22	0.33	80.34	10.00	15.00
75 x 100	6.0	14.627	18.63	245.11	155.96	3.63	2.89	49.02	41.59	61.00	49.93	320.42	67.71	0.33	68.37	7.50	11.67
75 x 125	2.3	6.949	8.85	191.52	87.51	4.65	3.14	30.64	23.33	36.99	26.10	189.93	39.08	0.39	143.91	27.61	49.35
75 x 125	3.0	8.956	11.41	242.85	110.52	4.61	3.11	38.86	29.47	47.26	33.29	242.86	49.46	0.39	111.66	20.00	36.67
75 x 125	4.0	11.734	14.95	310.76	140.65	4.56	3.07	49.72	37.51	61.13	42.96	314.53	63.14	0.39	85.22	13.75	26.25
75 x 125	4.5	13.085	16.67	342.40	154.54	4.53	3.04	54.78	41.21	67.73	47.55	348.61	69.50	0.38	76.42	11.67	22.78
75 x 125	5.0	14.410	18.36	372.51	167.68	4.50	3.02	59.60	44.71	74.10	57.96	381.52	75.55	0.38	69.40	10.00	20.00
75 x 125	6.0	16.982	21.63	428.29	191.76	4.45	2.98	68.53	51.14	86.17	60.28	443.81	86.75	0.38	58.89	7.50	15.83
75 x 150	2.3	7.852	10.00	298.43	102.71	5.46	3.20	39.79	27.39	48.77	30.28	243.63	47.18	0.44	127.36	27.61	60.22
75 x 150	3.0	10.133	12.91	379.59	129.97	5.42	3.17	50.61	34.66	62.45	38.69	311.78	59.82	0.44	98.69	20.00	45.00
75 x 150	4.0	13.304	16.95	488.00	165.88	5.37	3.13	65.07	44.24	81.07	50.06	404.26	76.59	0.44	75.16	13.75	32.50
75 x 150	4.5	14.851	18.92	538.94	182.54	5.34	3.11	71.86	48.68	89.97	55.48	448.36	84.42	0.43	67.33	11.67	28.33
75 x 150	5.0	16.372	20.86	587.74	198.36	5.31	3.08	78.37	52.90	98.61	60.71	491.02	91.89	0.43	61.08	10.00	25.00
75 x 150	6.0	19.337	24.63	679.08	227.56	5.25	3.04	90.54	60.68	115.08	70.63	572.03	105.80	0.43	51.71	7.50	20.00
100 x 150	3.0	11.311	14.41	460.64	247.64	5.65	4.15	61.42	49.53	73.48	55.76	507.20	81.40	0.49	88.41	28.33	45.00
100 x 150	4.0	18.874	18.95	594.60	318.57	5.60	4.10	79.28	63.71	95.67	72.50	661.63	104.94	0.49	67.23	20.00	32.50
100 x 150	4.5	16.617	21.17	658.06	351.96	5.58	4.08	87.74	70.39	106.34	80.53	736.08	116.08	0.48	60.18	17.22	28.33
100 x 150	5.0	18.335	23.36	719.20	384.02	5.55	4.05	95.89	76.80	116.73	88.34	808.68	126.81	0.48	54.54	15.00	25.00
100 x 150	6.0	21.692	27.63	834.69	444.19	5.50	4.01	111.29	88.84	136.68	103.30	948.34	147.07	0.48	46.10	11.67	20.00
100 x 200	4.0	18.014	22.95	1199.71	410.78	7.23	4.23	119.97	82.16	148.04	91.70	985.38	141.81	0.59	55.51	20.00	45.00
100 x 200	4.5	20.150	25.67	1331.44	454.64	7.20	4.21	133.14	90.93	164.89	102.02	1097.11	157.12	0.58	49.63	17.22	39.44
100 x 200	5.0	22.260	28.36	1459.25	496.94	7.17	4.19	145.93	99.39	181.37	112.09	1206.29	171.94	0.58	44.92	15.00	35.00
100 x 200	6.0	26.402	33.63	1703.31	576.91	7.12	4.14	170.33	115.38	213.27	131.50	1417.03	200.10	0.58	37.88	11.67	28.33