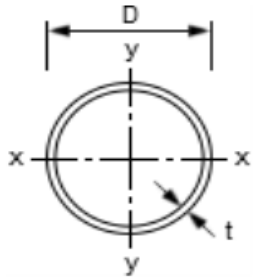
BS 5950-1: 2000
BS EN 10210-2: 2006

HOT-FINISHED CIRCULAR HOLLOW SECTIONS

Celsius® CHS

Dimensions and properties



Hot Finished

Section Designation		Mass per Metre	Area of Section	Ratio for Local Buckling	Second Moment of Area	Radius of Gyration	Elastic Modulus	Plastic Modulus	Torsional Constants		Surface Area	
Outside Diameter D	Thickness t										Per Metre	Per Tonne
mm	mm	kg/m	cm^2	D/t	cm^4	cm	cm^3	cm^3	cm^4	cm^3	m^2	m^2
			A		I	r	Z	S	J	C		
26.9	3.2	1.87	2.38	8.41	1.7	0.846	1.27	1.81	3.41	2.53	0.085	45.2
33.7	2.6	1.99	2.54	13	3.09	1.1	1.84	2.52	6.19	3.67	0.106	53.1
	3.2	2.41	3.07	10.5	3.6	1.08	2.14	2.99	7.21	4.28	0.106	44.0
	4.0	2.93	3.73	8.43	4.19	1.06	2.49	3.55	8.38	4.97	0.106	36.1
42.4	2.6	2.55	3.25	16.3	6.46	1.41	3.05	4.12	12.9	6.1	0.133	52.2
	3.2	3.09	3.94	13.3	7.62	1.39	3.59	4.93	15.2	7.19	0.133	43.1
	4.0	3.79	4.83	10.6	8.99	1.36	4.24	5.92	18	8.48	0.133	35.2
	5.0	4.61	5.87	8.48	10.5	1.33	4.93	7.04	20.9	9.86	0.133	28.9
48.3	3.2	3.56	4.53	15.1	11.6	1.6	4.8	6.52	23.2	9.59	0.152	42.6
	4.0	4.37	5.57	12.1	13.8	1.57	5.7	7.87	27.5	11.4	0.152	34.7
	5.0	5.34	6.8	9.66	16.2	1.54	6.69	9.42	32.3	13.4	0.152	28.4
60.3	3.2	4.51	5.74	18.8	23.5	2.02	7.78	10.4	46.9	15.6	0.189	42.0
	4.0	5.55	7.07	15.1	28.2	2	9.34	12.7	56.3	18.7	0.189	34.1
	5.0	6.82	8.69	12.1	33.5	1.96	11.1	15.3	67	22.2	0.189	27.8
76.1	2.9	5.24	6.67	26.2	44.7	2.59	11.8	15.5	89.5	23.5	0.239	45.7
	3.2	5.75	7.33	23.8	48.8	2.58	12.8	17	97.6	25.6	0.239	41.6
	4.0	7.11	9.06	19	59.1	2.55	15.5	20.8	118	31	0.239	33.6
	5.0	8.77	11.2	15.2	70.9	2.52	18.6	25.3	142	37.3	0.239	27.3
88.9	3.2	6.76	8.62	27.8	79.2	3.03	17.8	23.5	158	35.6	0.279	41.3
	4.0	8.38	10.7	22.2	96.3	3	21.7	28.9	193	43.3	0.279	33.3
	5.0	10.3	13.2	17.8	116	2.97	26.2	35.2	233	52.4	0.279	27.0
	6.3	12.8	16.3	14.1	140	2.93	31.5	43.1	280	63.1	0.279	21.8

Section Designation		Mass per Metre	Area of Section	Ratio for Local Buckling	Second Moment of Area	Radius of Gyration	Elastic Modulus	Plastic Modulus	Torsional Constants		Surface Area	
Outside Diameter	Thickness										Per Metre	Per Tonne
D	t		A	D/t	I	r	Z	S	J	C		
mm	mm	kg/m	cm^2		cm^4	cm	cm^3	cm^3	cm^4	cm^3	m^2	m^2
114.3	3.2	8.77	11.2	35.7	172	3.93	30.2	39.5	345	60.4	0.359	41.0
	3.6	9.83	12.5	31.8	192	3.92	33.6	44.1	384	67.2	0.359	36.5
	4.0	10.9	13.9	28.6	211	3.9	36.9	48.7	422	73.9	0.359	33.0
	5.0	13.5	17.2	22.9	257	3.87	45	59.8	514	89.9	0.359	26.6
	6.3	16.8	21.4	18.1	313	3.82	54.7	73.6	625	109	0.359	21.4
139.7	5.0	16.6	21.2	27.9	481	4.77	68.8	90.8	961	138	0.439	26.4
	6.3	20.7	26.4	22.2	589	4.72	84.3	112	1177	169	0.439	21.2
	8.0	26	33.1	17.5	720	4.66	103	139	1441	206	0.439	16.9
	10.0	32	40.7	14	862	4.6	123	169	1724	247	0.439	13.7
168.3	5.0	20.1	25.7	33.7	856	5.78	102	133	1710	203	0.529	26.3
	6.3	25.2	32.1	26.7	1050	5.73	125	165	2110	250	0.529	21.0
	8.0	31.6	40.3	21	1300	5.67	154	206	2600	308	0.529	16.7
	10.0	39	49.7	16.8	1560	5.61	186	251	3130	372	0.529	13.5
	12.5	48	61.2	13.5	1870	5.53	222	304	3740	444	0.529	11.0
193.7	5.0	23.3	29.6	38.7	1320	6.67	136	178	2640	273	0.609	26.2
	6.3	29.1	37.1	30.7	1630	6.63	168	221	3260	337	0.609	20.9
	8.0	36.6	46.7	24.2	2020	6.57	208	276	4030	416	0.609	16.6
	10.0	45.3	57.7	19.4	2440	6.5	252	338	4880	504	0.609	13.4
	12.5	55.9	71.2	15.5	2930	6.42	303	411	5870	606	0.609	10.9
219.1	5.0	26.4	33.6	43.8	1930	7.57	176	229	3860	352	0.688	26.1
	6.3	33.1	42.1	34.8	2390	7.53	218	285	4770	436	0.688	20.8
	8.0	41.6	53.1	27.4	2960	7.47	270	357	5920	540	0.688	16.5
	10.0	51.6	65.7	21.9	3600	7.4	328	438	7200	657	0.688	13.3
	12.5	63.7	81.1	17.5	4350	7.32	397	534	8690	793	0.688	10.8
	14.2	71.8	91.4	15.4	4820	7.26	440	597	9640	880	0.688	9.6
	16.0	80.1	102	13.7	5300	7.2	483	661	10600	967	0.688	8.6
244.5	8.0	46.7	59.4	30.6	4160	8.37	340	448	8320	681	0.768	16.5
	10.0	57.8	73.7	24.5	5070	8.3	415	550	10100	830	0.768	13.3
	12.5	71.5	91.1	19.6	6150	8.21	503	673	12300	1010	0.768	10.7
	14.2	80.6	103	17.2	6840	8.16	559	754	13700	1120	0.768	9.5
	16.0	90.2	115	15.3	7530	8.1	616	837	15100	1230	0.768	8.5
273	6.3	41.4	52.8	43.3	4700	9.43	344	448	9390	688	0.858	20.7
	8.0	52.3	66.6	34.1	5850	9.37	429	562	11700	857	0.858	16.4

Section Designation		Mass per Metre	Area of Section	Ratio for Local Buckling	Second Moment of Area	Radius of Gyration	Elastic Modulus	Plastic Modulus	Torsional Constants		Surface Area	
Outside Diameter D mm	Thickness t mm	kg/m	A cm^2	D/t	I cm^4	r cm	Z cm^3	S cm^3	J cm^4	C cm^3	Per Metre m^2	Per Tonne m^2
	10.0	64.9	82.6	27.3	7150	9.31	524	692	14300	1050	0.858	13.2
	12.5	80.3	102	21.8	8700	9.22	637	849	17400	1270	0.858	10.7
	14.2	90.6	115	19.2	9700	9.16	710	952	19400	1420	0.858	9.5
	16.0	101	129	17.1	10700	9.1	784	1060	21400	1570	0.858	8.5
323.9	6.3	49.3	62.9	51.4	7930	11.2	490	636	15900	979	1.02	20.6
	8.0	62.3	79.4	40.5	9910	11.2	612	799	19800	1220	1.02	16.3
	10.0	77.4	98.6	32.4	12200	11.1	751	986	24300	1500	1.02	13.1
	12.5	96	122	25.9	14800	11	917	1210	29700	1830	1.02	10.6
	14.2	108	138	22.8	16600	11	1030	1360	33200	2050	1.02	9.4
	16.0	121	155	20.2	18400	10.9	1140	1520	36800	2270	1.02	8.4
355.6	14.2	120	152	25	22200	12.1	1250	1660	44500	2500	1.12	9.3
	16.0	134	171	22.2	24700	12	1390	1850	49300	2770	1.12	8.3
406.4	6.3	62.2	79.2	64.5	15800	14.1	780	1010	31700	1560	1.28	20.5
	8.0	78.6	100	50.8	19900	14.1	978	1270	39700	1960	1.28	16.2
	10.0	97.8	125	40.6	24500	14	1210	1570	49000	2410	1.28	13.1
	12.5	121	155	32.5	30000	13.9	1480	1940	60100	2960	1.28	10.5
	14.2	137	175	28.6	33700	13.9	1660	2190	67400	3320	1.28	9.3
	16.0	154	196	25.4	37400	13.8	1840	2440	74900	3690	1.28	8.3
457	8.0	88.6	113	57.1	28400	15.9	1250	1610	56900	2490	1.44	16.2
	10.0	110	140	45.7	35100	15.8	1540	2000	70200	3070	1.44	13.0
	12.5	137	175	36.6	43100	15.7	1890	2470	86300	3780	1.44	10.5
	14.2	155	198	32.2	48500	15.7	2120	2790	96900	4240	1.44	9.3
	16.0	174	222	28.6	54000	15.6	2360	3110	108000	4720	1.44	8.3
508	10.0	123	156	50.8	48500	17.6	1910	2480	97000	3820	1.6	13.0
	12.5	153	195	40.6	59800	17.5	2350	3070	120000	4710	1.6	10.4
	14.2	173	220	35.8	67200	17.5	2650	3460	134000	5290	1.6	9.2
	16.0	194	247	31.8	74900	17.4	2950	3870	150000	5900	1.6	8.2

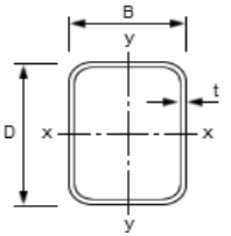
BS 5950-1: 2000

BS EN 10210-2: 2006

HOT-FINISHED RECTANGULAR HOLLOW SECTIONS

Celsius® RHS

Dimensions and properties



Hot Finished

Section Designation		Mass per Metre	Area of Section	Ratios for Local Buckling		Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Torsional Constants		Surface Area	
Size D x B mm	Thickness t mm	kg/m	A cm$^{2</SUP< td>}$	d/t [1]	d/t [1]	Axis x-x cm^4	Axis y-y cm^4	Axis x-x cm	Axis y-y cm	Axis x-x cm^3	Axis y-y cm^3	Axis x-x cm^3	Axis y-y cm^3	J cm^4	C cm^3	Per Metre m^2	Per Tonne m^2
50 x 30	3.2	3.6	4.6	12.6	6.4	14.2	6.2	1.8	1.2	5.7	4.1	7.3	5.0	14.2	6.8	0.2	42.1
60 x 40	3.0	4.4	5.5	17.0	10.3	26.5	13.9	2.2	1.6	8.8	7.0	10.9	8.2	29.2	11.2	0.2	44.1
	4.0	5.6	7.2	12.0	7.0	32.8	17.0	2.1	1.5	10.9	8.5	13.8	10.3	36.7	13.7	0.2	33.7
	5.0	6.9	8.7	9.0	5.0	38.1	19.5	2.1	1.5	12.7	9.8	16.4	12.2	43.0	15.7	0.2	27.3
80 x 40	3.2	5.6	7.2	22.0	9.5	57.2	18.9	2.8	1.6	14.3	9.5	18.0	11.0	46.2	16.1	0.2	41.3
	4.0	6.9	8.8	17.0	7.0	68.2	22.2	2.8	1.6	17.1	11.1	21.8	13.2	55.2	18.9	0.2	33.3
	5.0	8.4	10.7	13.0	5.0	80.3	25.7	2.7	1.6	20.1	12.9	26.1	15.7	65.1	21.9	0.2	27.0
	6.3	10.3	13.1	9.7	3.4	93.3	29.2	2.7	1.5	23.3	14.6	31.1	18.4	75.6	24.8	0.2	21.7
	8.0	12.5	16.0	7.0	2.0	106.0	32.1	2.6	1.4	26.5	16.1	36.5	21.2	85.8	27.4	0.2	17.5
90 x 50	3.6	7.4	9.4	22.0	10.9	98.3	38.7	3.2	2.0	21.8	15.5	27.2	18.0	89.4	25.9	0.3	36.6
	5.0	10.0	12.7	15.0	7.0	127.0	49.2	3.2	2.0	28.3	19.7	36.0	23.5	116.0	32.9	0.3	26.7
	6.3	12.3	15.6	11.3	4.9	150.0	57.0	3.1	1.9	33.3	22.8	43.2	28.0	138.0	38.1	0.3	21.5
100 x 50	3.0	6.7	8.5	30.3	13.7	110.0	36.8	3.6	2.1	21.9	14.7	27.3	16.8	88.4	25.0	0.3	43.5
	3.2	7.1	9.1	28.3	12.6	116.0	38.8	3.6	2.1	23.2	15.5	28.9	17.7	93.4	26.4	0.3	41.0
	4.0	8.8	11.2	22.0	9.5	140.0	46.2	3.5	2.0	27.9	18.5	35.2	21.5	113.0	31.4	0.3	33.0
	5.0	10.8	13.7	17.0	7.0	167.0	54.3	3.5	2.0	33.3	21.7	42.6	25.8	135.0	36.9	0.3	26.6
	6.3	13.3	16.9	12.9	4.9	197.0	63.0	3.4	1.9	39.4	25.2	51.3	30.8	160.0	42.9	0.3	21.4
	8.0	16.3	20.8	9.5	3.3	230.0	71.7	3.3	1.9	46.0	28.7	61.4	36.3	186.0	48.9	0.3	17.1
100 x 60	3.6	8.5	10.9	24.8	13.7	145.0	64.8	3.7	2.4	28.9	21.6	35.6	24.9	142.0	35.6	0.3	36.5
	5.0	11.6	14.7	17.0	9.0	189.0	83.6	3.6	2.4	37.8	27.9	47.4	32.9	188.0	45.9	0.3	26.5
	6.3	14.2	18.1	12.9	6.5	225.0	98.1	3.5	2.3	45.0	32.7	57.3	39.5	224.0	53.8	0.3	21.4
	8.0	17.5	22.4	9.5	4.5	264.0	113.0	3.4	2.3	52.8	37.8	68.7	47.1	265.0	62.2	0.3	17.1
120 x 60	3.6	9.7	12.3	30.3	13.7	227.0	76.3	4.3	2.5	37.9	25.4	47.2	28.9	183.0	43.3	0.4	36.3
	5.0	13.1	16.7	21.0	9.0	299.0	98.8	4.2	2.4	49.9	32.9	63.1	38.4	242.0	56.0	0.3	26.5
	6.3	16.2	20.7	16.0	6.5	358.0	116.0	4.2	2.4	59.7	38.8	76.7	46.3	290.0	65.9	0.3	21.2
	8.0	20.1	25.6	12.0	4.5	425.0	135.0	4.1	2.3	70.8	45.0	92.7	55.4	344.0	76.6	0.3	16.9
120 x 80	5.0	14.7	18.7	21.0	13.0	365.0	193.0	4.4	3.2	60.9	48.2	74.6	56.1	401.0	77.9	0.4	26.3
	6.3	18.2	23.2	16.0	9.7	440.0	230.0	4.4	3.2	73.3	57.6	91.0	68.2	487.0	92.9	0.4	21.1
	8.0	22.6	28.8	12.0	7.0	525.0	273.0	4.3	3.1	87.5	68.1	111.0	82.6	587.0	110.0	0.4	16.8
	10.0	27.4	34.9	9.0	5.0	609.0	313.0	4.2	3.0	102.0	78.1	131.0	97.3	688.0	126.0	0.4	13.6
150 x 100	5.0	18.6	23.7	27.0	17.0	739.0	392.0	5.6	4.1	98.5	78.5	119.0	90.1	807.0	127.0	0.5	26.2

Section Designation		Mass per Metre	Area of Section	Ratios for Local Buckling		Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Torsional Constants		Surface Area	
Size D x B	Thickness t		A	d/t [1]	d/t [1]	Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	J	C	Per Metre	Per Tonne
mm	mm	kg/m	$cm^{2</SUP< td>}$			cm^4	cm^4	cm	cm	cm^3	cm^3	cm^3	cm^3	cm^4	cm^3	m^2	m^2
	6.3	23.1	29.5	20.8	12.9	898.0	474.0	5.5	4.0	120.0	94.8	147.0	110.0	986.0	153.0	0.5	21.0
	8.0	28.9	36.8	15.8	9.5	1090.0	569.0	5.4	3.9	145.0	114.0	180.0	135.0	1200.0	183.0	0.5	16.6
	10.0	35.3	44.9	12.0	7.0	1280.0	665.0	5.3	3.9	171.0	133.0	216.0	161.0	1430.0	214.0	0.5	13.4
	12.5	42.8	54.6	9.0	5.0	1490.0	763.0	5.2	3.7	198.0	153.0	256.0	190.0	1680.0	246.0	0.5	10.9
150 x 125	4.0	16.6	21.2	34.5	28.3	714.0	539.0	5.8	5.0	95.2	86.3	112.0	98.9	949.0	133.0	0.5	32.5
	5.0	20.6	26.2	27.0	22.0	870.0	656.0	5.8	5.0	116.0	105.0	138.0	121.0	1160.0	162.0	0.5	26.1
	6.3	25.6	32.6	20.8	16.8	1060.0	798.0	5.7	4.9	141.0	128.0	169.0	149.0	1430.0	196.0	0.5	20.9
	8.0	32.0	40.8	15.8	12.6	1290.0	966.0	5.6	4.9	172.0	155.0	208.0	183.0	1750.0	237.0	0.5	16.5
	10.0	39.2	49.9	12.0	9.5	1530.0	1140.0	5.5	4.8	204.0	183.0	251.0	221.0	2100.0	279.0	0.5	13.4
	12.5	47.7	60.8	9.0	7.0	1780.0	1330.0	5.4	4.7	238.0	212.0	299.0	262.0	2490.0	324.0	0.5	10.9
160 x 80	4.0	14.4	18.4	37.0	17.0	612.0	207.0	5.8	3.4	76.5	51.7	94.7	58.3	493.0	88.1	0.5	32.6
	5.0	17.8	22.7	29.0	13.0	744.0	249.0	5.7	3.3	93.0	62.3	116.0	71.1	600.0	106.0	0.5	26.2
	6.3	22.2	28.2	22.4	9.7	903.0	299.0	5.7	3.3	113.0	74.8	142.0	86.8	730.0	127.0	0.5	20.9
	8.0	27.6	35.2	17.0	7.0	1090.0	356.0	5.6	3.2	136.0	89.0	175.0	106.0	883.0	151.0	0.5	16.6
	10.0	33.7	42.9	13.0	5.0	1280.0	411.0	5.5	3.1	161.0	103.0	209.0	125.0	1040.0	175.0	0.5	13.5
200 x 100	5.0	22.6	28.7	37.0	17.0	1500.0	505.0	7.2	4.2	149.0	101.0	185.0	114.0	1200.0	172.0	0.6	26.0
	6.3	28.1	35.8	28.7	12.9	1830.0	613.0	7.2	4.1	183.0	123.0	228.0	140.0	1480.0	208.0	0.6	20.8
	8.0	35.1	44.8	22.0	9.5	2230.0	739.0	7.1	4.1	223.0	148.0	282.0	172.0	1800.0	251.0	0.6	16.5
	10.0	43.1	54.9	17.0	7.0	2660.0	869.0	7.0	4.0	266.0	174.0	341.0	206.0	2160.0	295.0	0.6	13.3
	12.5	52.7	67.1	13.0	5.0	3140.0	1000.0	6.8	3.9	314.0	201.0	408.0	245.0	2540.0	341.0	0.6	10.8
200 x 120	5.0	24.1	30.7	37.0	21.0	1690.0	762.0	7.4	5.0	168.0	127.0	205.0	144.0	1650.0	210.0	0.6	26.0
	6.3	30.1	38.3	28.7	16.0	2070.0	929.0	7.3	4.9	207.0	155.0	253.0	177.0	2030.0	255.0	0.6	20.7
	8.0	37.6	48.0	22.0	12.0	2530.0	1130.0	7.3	4.9	253.0	188.0	313.0	218.0	2500.0	310.0	0.6	16.5
	10.0	46.3	58.9	17.0	9.0	3030.0	1340.0	7.2	4.8	303.0	223.0	379.0	263.0	3000.0	367.0	0.6	13.3
	14.2	63.3	80.7	11.1	5.5	3910.0	1690.0	7.0	4.6	391.0	282.0	503.0	346.0	3920.0	464.0	0.6	9.5
200 x 150	8.0	41.4	52.8	22.0	15.8	2970.0	1890.0	7.5	6.0	297.0	253.0	359.0	294.0	3640.0	398.0	0.7	16.4
	10.0	51.0	64.9	17.0	12.0	3570.0	2260.0	7.4	5.9	357.0	302.0	436.0	356.0	4410.0	475.0	0.7	13.2
250 x 120	10.0	54.1	68.9	22.0	9.0	5310.0	1640.0	8.8	4.9	425.0	273.0	539.0	318.0	4090.0	468.0	0.7	13.2
	12.5	66.4	84.6	17.0	6.6	6330.0	1930.0	8.7	4.8	506.0	321.0	651.0	381.0	4880.0	549.0	0.7	10.7
	14.2	74.5	94.9	14.6	5.5	6960.0	2090.0	8.6	4.7	556.0	349.0	722.0	421.0	5360.0	597.0	0.7	9.4
250 x 150	5.0	30.4	38.7	47.0	27.0	3360.0	1530.0	9.3	6.3	269.0	204.0	324.0	228.0	3280.0	337.0	0.8	25.9
	6.3	38.0	48.4	36.7	20.8	4140.0	1870.0	9.3	6.2	331.0	250.0	402.0	283.0	4050.0	413.0	0.8	20.6
	8.0	47.7	60.8	28.3	15.8	5110.0	2300.0	9.2	6.2	409.0	306.0	501.0	350.0	5020.0	506.0	0.8	16.3
	10.0	58.8	74.9	22.0	12.0	6170.0	2760.0	9.1	6.1	494.0	367.0	611.0	426.0	6090.0	605.0	0.8	13.2
	12.5	72.3	92.1	17.0	9.0	7390.0	3270.0	9.0	6.0	591.0	435.0	740.0	514.0	7330.0	717.0	0.8	10.6
	14.2	81.1	103.0	14.6	7.6	8140.0	3580.0	8.9	5.9	651.0	477.0	823.0	570.0	8100.0	784.0	0.8	9.4
	16.0	90.3	115.0	12.6	6.4	8880.0	3870.0	8.8	5.8	710.0	516.0	906.0	625.0	8870.0	849.0	0.8	8.4
250 x 200	10.0	66.7	84.9	22.0	17.0	7610.0	5370.0	9.5	8.0	609.0	537.0	731.0	626.0	9890.0	835.0	0.9	13.1
	12.5	82.1	105.0	17.0	13.0	9150.0	6440.0	9.4	7.9	732.0	644.0	888.0	760.0	12000.0	997.0	0.9	10.6
	14.2	92.3	118.0	14.6	11.1	10100.0	7100.0	9.3	7.8	809.0	710.0	990.0	846.0	13300.0	1100.0	0.9	9.4
260 x 140	5.0	30.4	38.7	49.0	25.0	3530.0	1350.0	9.6	5.9	272.0	193.0	331.0	216.0	3080.0	326.0	0.8	25.9

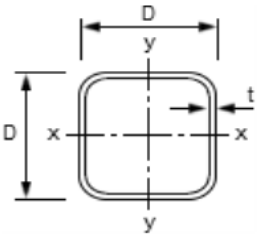
Section Designation		Mass per Metre	Area of Section	Ratios for Local Buckling		Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Torsional Constants		Surface Area	
Size D x B	Thickness t		A	d/t [1]	d/t [1]	Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	J	C	Per Metre	Per Tonne
mm	mm	kg/m	$cm^{2</SUP< td>}$			cm^4	cm^4	cm	cm	cm^3	cm^3	cm^3	cm^3	cm^4	cm^3	m^2	m^2
	6.3	38.0	48.4	38.3	19.2	4360.0	1660.0	9.5	5.9	335.0	237.0	411.0	267.0	3800.0	399.0	0.8	20.6
	8.0	47.7	60.8	29.5	14.5	5370.0	2030.0	9.4	5.8	413.0	290.0	511.0	331.0	4700.0	488.0	0.8	16.3
	10.0	58.8	74.9	23.0	11.0	6490.0	2430.0	9.3	5.7	499.0	347.0	624.0	402.0	5700.0	584.0	0.8	13.2
	12.5	72.3	92.1	17.8	8.2	7770.0	2880.0	9.2	5.6	597.0	411.0	756.0	485.0	6840.0	690.0	0.8	10.6
	14.2	81.1	103.0	15.3	6.9	8560.0	3140.0	9.1	5.5	658.0	449.0	840.0	537.0	7560.0	754.0	0.8	9.4
	16.0	90.3	115.0	13.3	5.8	9340.0	3400.0	9.0	5.4	718.0	486.0	925.0	588.0	8260.0	815.0	0.8	8.4
300 x 100	8.0	47.7	60.8	34.5	9.5	6310.0	1080.0	10.2	4.2	420.0	216.0	546.0	245.0	3070.0	387.0	0.8	16.3
	10.0	58.8	74.9	27.0	7.0	7610.0	1280.0	10.1	4.1	508.0	255.0	666.0	296.0	3680.0	458.0	0.8	13.2
	14.2	81.1	103.0	18.1	4.0	10000.0	1610.0	9.9	3.9	669.0	321.0	896.0	390.0	4760.0	578.0	0.8	9.4
300 x 150	8.0	54.0	68.8	34.5	15.8	8010.0	2700.0	10.8	6.3	534.0	360.0	663.0	407.0	6450.0	613.0	0.9	16.3
	10.0	66.7	84.9	27.0	12.0	9720.0	3250.0	10.7	6.2	648.0	433.0	811.0	496.0	7840.0	736.0	0.9	13.1
	12.5	82.1	105.0	21.0	9.0	11700.0	3860.0	10.6	6.1	779.0	514.0	986.0	600.0	9450.0	874.0	0.9	10.6
	14.2	92.3	118.0	18.1	7.6	12900.0	4230.0	10.5	6.0	862.0	564.0	1100.0	666.0	10500.0	959.0	0.9	9.4
	16.0	103.0	131.0	15.8	6.4	14200.0	4600.0	10.4	5.9	944.0	613.0	1210.0	732.0	11500.0	1040.0	0.9	8.3
300 x 200	6.3	47.9	61.0	44.6	28.7	7830.0	4190.0	11.3	8.3	522.0	419.0	624.0	472.0	8480.0	681.0	1.0	20.5
	8.0	60.3	76.8	34.5	22.0	9720.0	5180.0	11.3	8.2	648.0	518.0	779.0	589.0	10600.0	840.0	1.0	16.2
	10.0	74.5	94.9	27.0	17.0	11800.0	6280.0	11.2	8.1	788.0	628.0	956.0	721.0	12900.0	1020.0	1.0	13.1
	12.5	91.9	117.0	21.0	13.0	14300.0	7540.0	11.0	8.0	952.0	754.0	1170.0	877.0	15700.0	1220.0	1.0	10.5
	14.2	103.0	132.0	18.1	11.1	15800.0	8330.0	11.0	8.0	1060.0	833.0	1300.0	978.0	17500.0	1340.0	1.0	9.4
	16.0	115.0	147.0	15.8	9.5	17400.0	9110.0	10.9	7.9	1160.0	911.0	1440.0	1080.0	19300.0	1470.0	1.0	8.3
300 x 250	5.0	42.2	53.7	57.0	47.0	7410.0	5610.0	11.7	10.2	494.0	449.0	575.0	508.0	9770.0	697.0	1.1	25.8
	6.3	52.8	67.3	44.6	36.7	9190.0	6950.0	11.7	10.2	613.0	556.0	716.0	633.0	12200.0	862.0	1.1	20.5
	8.0	66.5	84.8	34.5	28.3	11400.0	8630.0	11.6	10.1	761.0	690.0	896.0	791.0	15200.0	1070.0	1.1	16.2
	10.0	82.4	105.0	27.0	22.0	13900.0	10500.0	11.5	10.0	928.0	840.0	1100.0	971.0	18600.0	1300.0	1.1	13.0
	12.5	102.0	130.0	21.0	17.0	16900.0	12700.0	11.4	9.9	1120.0	1010.0	1350.0	1190.0	22700.0	1560.0	1.1	10.5
	14.2	115.0	146.0	18.1	14.6	18700.0	14100.0	11.3	9.8	1250.0	1130.0	1510.0	1330.0	25400.0	1730.0	1.1	9.2
	16.0	128.0	163.0	15.8	12.6	20600.0	15500.0	11.2	9.7	1380.0	1240.0	1670.0	1470.0	28100.0	1900.0	1.1	8.3
350 x 150	5.0	38.3	48.7	67.0	27.0	7660.0	2050.0	12.5	6.5	437.0	274.0	543.0	301.0	5160.0	477.0	1.0	25.8
	6.3	47.9	61.0	52.6	20.8	9480.0	2530.0	12.5	6.4	542.0	337.0	676.0	373.0	6390.0	586.0	1.0	20.5
	8.0	60.3	76.8	40.8	15.8	11800.0	3110.0	12.4	6.4	673.0	414.0	844.0	464.0	7930.0	721.0	1.0	16.2
	10.0	74.5	94.9	32.0	12.0	14300.0	3740.0	12.3	6.3	818.0	498.0	1040.0	566.0	9630.0	867.0	1.0	13.1
	12.5	91.9	117.0	25.0	9.0	17300.0	4450.0	12.2	6.2	988.0	593.0	1260.0	686.0	11600.0	1030.0	1.0	10.5
	14.2	103.0	132.0	21.6	7.6	19200.0	4890.0	12.1	6.1	1100.0	652.0	1410.0	763.0	12900.0	1130.0	1.0	9.4
	16.0	115.0	147.0	18.9	6.4	21100.0	5320.0	12.0	6.0	1210.0	709.0	1560.0	840.0	14100.0	1230.0	1.0	8.3
350 x 250	5.0	46.1	58.7	67.0	47.0	10600.0	6360.0	13.5	10.4	607.0	509.0	716.0	569.0	12200.0	817.0	1.2	25.8
	6.3	57.8	73.6	52.6	36.7	13200.0	7890.0	13.4	10.4	754.0	631.0	892.0	709.0	15200.0	1010.0	1.2	20.4
	8.0	72.8	92.8	40.8	28.3	16400.0	9800.0	13.3	10.3	940.0	784.0	1120.0	888.0	19000.0	1250.0	1.2	16.2
	10.0	90.2	115.0	32.0	22.0	20100.0	11900.0	13.2	10.2	1150.0	955.0	1380.0	1090.0	23400.0	1530.0	1.2	13.0
	12.5	112.0	142.0	25.0	17.0	24400.0	14400.0	13.1	10.1	1400.0	1160.0	1690.0	1330.0	28500.0	1840.0	1.2	10.4
	14.2	126.0	160.0	21.6	14.6	27200.0	16000.0	13.0	10.0	1550.0	1280.0	1890.0	1490.0	31900.0	2040.0	1.2	9.2
	16.0	141.0	179.0	18.9	12.6	30000.0	17700.0	12.9	9.9	1720.0	1410.0	2100.0	1660.0	35300.0	2250.0	1.2	8.2
400 x 120	5.0	39.8	50.7	77.0	21.0	9520.0	1420.0	13.7	5.3	476.0	237.0	612.0	259.0	4090.0	430.0	1.0	25.9

Section Designation		Mass per Metre	Area of Section	Ratios for Local Buckling		Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Torsional Constants		Surface Area	
Size D x B	Thickness t		A	d/t [1]	d/t [1]	Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	J	C	Per Metre	Per Tonne
mm	mm	kg/m	$cm^{2</SUP< td>}$			cm^4	cm^4	cm	cm	cm^3	cm^3	cm^3	cm^3	cm^4	cm^3	m^2	m^2
	6.3	49.9	63.5	60.5	16.0	11800.0	1740.0	13.6	5.2	590.0	291.0	762.0	320.0	5040.0	527.0	1.0	20.4
	8.0	62.8	80.0	47.0	12.0	14600.0	2130.0	13.5	5.2	732.0	356.0	952.0	397.0	6220.0	645.0	1.0	16.2
	10.0	77.7	98.9	37.0	9.0	17800.0	2550.0	13.4	5.1	891.0	425.0	1170.0	483.0	7510.0	771.0	1.0	13.0
	12.5	95.8	122.0	29.0	6.6	21600.0	3010.0	13.3	5.0	1080.0	502.0	1430.0	583.0	8980.0	911.0	1.0	10.5
	14.2	108.0	137.0	25.2	5.5	23900.0	3290.0	13.2	4.9	1200.0	549.0	1590.0	646.0	9890.0	996.0	1.0	9.3
	16.0	120.0	153.0	22.0	4.5	26300.0	3560.0	13.1	4.8	1320.0	593.0	1760.0	709.0	10800.0	1080.0	1.0	8.3
400 x 150	5.0	42.2	53.7	77.0	27.0	10700.0	2320.0	14.1	6.6	534.0	309.0	671.0	337.0	6130.0	547.0	1.1	25.8
	6.3	52.8	67.3	60.5	20.8	13300.0	2850.0	14.0	6.5	663.0	380.0	836.0	418.0	7600.0	673.0	1.1	20.5
	8.0	66.5	84.8	47.0	15.8	16500.0	3510.0	13.9	6.4	824.0	468.0	1050.0	521.0	9420.0	828.0	1.1	16.2
	10.0	82.4	105.0	37.0	12.0	20100.0	4230.0	13.8	6.4	1010.0	564.0	1290.0	636.0	11500.0	998.0	1.1	13.0
	12.5	102.0	130.0	29.0	9.0	24400.0	5040.0	13.7	6.2	1220.0	672.0	1570.0	772.0	13800.0	1190.0	1.1	10.5
	14.2	115.0	146.0	25.2	7.6	27100.0	5550.0	13.6	6.2	1360.0	740.0	1760.0	859.0	15300.0	1310.0	1.1	9.2
	16.0	128.0	163.0	22.0	6.4	29800.0	6040.0	13.5	6.1	1490.0	805.0	1950.0	947.0	16800.0	1430.0	1.1	8.3
400 x 200	8.0	72.8	92.8	47.0	22.0	19600.0	6660.0	14.5	8.5	978.0	666.0	1200.0	743.0	15700.0	1140.0	1.2	16.2
	10.0	90.2	115.0	37.0	17.0	23900.0	8080.0	14.4	8.4	1200.0	808.0	1480.0	911.0	19300.0	1380.0	1.2	13.0
	12.5	112.0	142.0	29.0	13.0	29100.0	9740.0	14.3	8.3	1450.0	974.0	1810.0	1110.0	23400.0	1660.0	1.2	10.4
	14.2	126.0	160.0	25.2	11.1	32400.0	10800.0	14.2	8.2	1620.0	1080.0	2030.0	1240.0	26100.0	1830.0	1.2	9.2
	16.0	141.0	179.0	22.0	9.5	35700.0	11800.0	14.1	8.1	1790.0	1180.0	2260.0	1370.0	28900.0	2010.0	1.2	8.2
400 x 300	8.0	85.4	109.0	47.0	34.5	25700.0	16500.0	15.4	12.3	1290.0	1100.0	1520.0	1250.0	31000.0	1750.0	1.4	16.2
	10.0	106.0	135.0	37.0	27.0	31500.0	20200.0	15.3	12.2	1580.0	1350.0	1870.0	1540.0	38200.0	2140.0	1.4	12.9
	12.5	131.0	167.0	29.0	21.0	38500.0	24600.0	15.2	12.1	1920.0	1640.0	2300.0	1880.0	46800.0	2590.0	1.4	10.5
	14.2	148.0	189.0	25.2	18.1	43000.0	27400.0	15.1	12.1	2150.0	1830.0	2580.0	2110.0	52500.0	2890.0	1.4	9.2
	16.0	166.0	211.0	22.0	15.8	47500.0	30300.0	15.0	12.0	2380.0	2020.0	2870.0	2350.0	58300.0	3180.0	1.4	8.2
450 x 250	8.0	85.4	109.0	53.3	28.3	30100.0	12100.0	16.6	10.6	1340.0	971.0	1620.0	1080.0	27100.0	1630.0	1.4	16.2
	10.0	106.0	135.0	42.0	22.0	36900.0	14800.0	16.5	10.5	1640.0	1190.0	2000.0	1330.0	33300.0	1990.0	1.4	12.9
	12.5	131.0	167.0	33.0	17.0	45000.0	18000.0	16.4	10.4	2000.0	1440.0	2460.0	1630.0	40700.0	2410.0	1.4	10.5
	14.2	148.0	189.0	28.7	14.6	50300.0	20000.0	16.3	10.3	2240.0	1600.0	2760.0	1830.0	45600.0	2680.0	1.4	9.2
	16.0	166.0	211.0	25.1	12.6	55700.0	22000.0	16.2	10.2	2480.0	1760.0	3070.0	2030.0	50500.0	2950.0	1.4	8.2
500 x 200	8.0	85.4	109.0	59.5	22.0	34000.0	8140.0	17.7	8.7	1360.0	814.0	1710.0	896.0	21100.0	1430.0	1.4	16.2
	10.0	106.0	135.0	47.0	17.0	41800.0	9890.0	17.6	8.6	1670.0	989.0	2110.0	1100.0	25900.0	1740.0	1.4	12.9
	12.5	131.0	167.0	37.0	13.0	51000.0	11900.0	17.5	8.5	2040.0	1190.0	2590.0	1350.0	31500.0	2100.0	1.4	10.5
	14.2	148.0	189.0	32.2	11.1	56900.0	13200.0	17.4	8.4	2280.0	1320.0	2900.0	1510.0	35200.0	2320.0	1.4	9.2
	16.0	166.0	211.0	28.3	9.5	63000.0	14500.0	17.3	8.3	2520.0	1450.0	3230.0	1670.0	38900.0	2550.0	1.4	8.2
500 x 300	8.0	97.9	125.0	59.5	34.5	43700.0	20000.0	18.7	12.6	1750.0	1330.0	2100.0	1480.0	42600.0	2200.0	1.6	16.1
	10.0	122.0	155.0	47.0	27.0	53800.0	24400.0	18.6	12.6	2150.0	1630.0	2600.0	1830.0	52500.0	2700.0	1.6	12.9
	12.5	151.0	192.0	37.0	21.0	65800.0	29800.0	18.5	12.5	2630.0	1990.0	3200.0	2240.0	64400.0	3280.0	1.6	10.4
	14.2	170.0	217.0	32.2	18.1	73700.0	33200.0	18.4	12.4	2950.0	2220.0	3590.0	2520.0	72200.0	3660.0	1.6	9.2
	16.0	191.0	243.0	28.3	15.8	81800.0	36800.0	18.3	12.3	3270.0	2450.0	4010.0	2800.0	80300.0	4040.0	1.6	8.2
	20.0	235.0	300.0	22.0	12.0	98800.0	44100.0	18.2	12.1	3950.0	2940.0	4890.0	3410.0	97400.0	4840.0	1.6	6.6

BS 5950-1: 2000

BS EN 10210-2: 2006

HOT-FINISHED SQUARE HOLLOW SECTIONS



Hot Finished

Celsius® SHS

Dimensions and properties

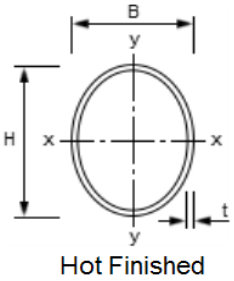
Section Designation		Mass per Metre	Area of Section	Ratio for Local Buckling	Second Moment of Area	Radius of Gyration	Elastic Modulus	Plastic Modulus	Torsional Constants		Surface Area	
Size D x B	Thickness t		A	d/t [1]	I	r	Z	S	J	C	Per Metre	Per Tonne
mm	mm	kg/m	cm^{2}		cm^{4}	cm	cm^{3}	cm^{3}	cm^{4}	cm^{3}	m^{2}	m^{2}
40 x 40	3.0	3.41	4.34	10.3	9.78	1.5	4.89	5.97	15.7	7.1	0.152	44.7
	3.2	3.61	4.6	9.5	10.2	1.49	5.11	6.28	16.5	7.42	0.152	42
	4.0	4.39	5.59	7	11.8	1.45	5.91	7.44	19.5	8.54	0.15	34.1
	5.0	5.28	6.73	5	13.4	1.41	6.68	8.66	22.5	9.6	0.147	27.8
50 x 50	3.0	4.35	5.54	13.7	20.2	1.91	8.08	9.7	32.1	11.8	0.192	44.2
	3.2	4.62	5.88	12.6	21.2	1.9	8.49	10.2	33.8	12.4	0.192	41.5
	4.0	5.64	7.19	9.5	25	1.86	9.99	12.3	40.4	14.5	0.19	33.6
	5.0	6.85	8.73	7	28.9	1.82	11.6	14.5	47.6	16.7	0.187	27.3
	6.3	8.31	10.6	4.94	32.8	1.76	13.1	17	55.2	18.8	0.184	22.1
60 x 60	3.0	5.29	6.74	17	36.2	2.32	12.1	14.3	56.9	17.7	0.232	43.9
	3.2	5.62	7.16	15.8	38.2	2.31	12.7	15.2	60.2	18.6	0.232	41.2
	4.0	6.9	8.79	12	45.4	2.27	15.1	18.3	72.5	22	0.23	33.3
	5.0	8.42	10.7	9	53.3	2.23	17.8	21.9	86.4	25.7	0.227	27
	6.3	10.3	13.1	6.52	61.6	2.17	20.5	26	102	29.6	0.224	21.7
	8.0	12.5	16	4.5	69.7	2.09	23.2	30.4	118	33.4	0.219	17.5
70 x 70	3.6	7.4	9.42	16.4	68.6	2.7	19.6	23.3	108	28.7	0.271	36.6
	5.0	9.99	12.7	11	88.5	2.64	25.3	30.8	142	36.8	0.267	26.7
	6.3	12.3	15.6	8.11	104	2.58	29.7	36.9	169	42.9	0.264	21.5
	8.0	15	19.2	5.75	120	2.5	34.2	43.8	200	49.2	0.259	17.3
80 x 80	3.6	8.53	10.9	19.2	105	3.11	26.2	31	164	38.5	0.311	36.4
	4.0	9.41	12	17	114	3.09	28.6	34	180	41.9	0.31	32.9
	5.0	11.6	14.7	13	137	3.05	34.2	41.1	217	49.8	0.307	26.6
	6.3	14.2	18.1	9.7	162	2.99	40.5	49.7	262	58.7	0.304	21.3
	8.0	17.5	22.4	7	189	2.91	47.3	59.5	312	68.3	0.299	17.1
90 x 90	3.6	9.66	12.3	22	152	3.52	33.8	39.7	237	49.7	0.351	36.3
	4.0	10.7	13.6	19.5	166	3.5	37	43.6	260	54.2	0.35	32.8
	5.0	13.1	16.7	15	200	3.45	44.4	53	316	64.8	0.347	26.4
	6.3	16.2	20.7	11.3	238	3.4	53	64.3	382	77	0.344	21.2
	8.0	20.1	25.6	8.25	281	3.32	62.6	77.6	459	90.5	0.339	16.9

Section Designation		Mass per Metre	Area of Section	Ratio for Local Buckling	Second Moment of Area	Radius of Gyration	Elastic Modulus	Plastic Modulus	Torsional Constants		Surface Area	
Size D x B mm	Thickness t mm	kg/m	A cm^{2}	d/t [1]	I cm^{4}	r cm	Z cm^{3}	S cm^{3}	J cm^{4}	C cm^{3}	Per Metre m^{2}	Per Tonne m^{2}
100 x 100	4.0	11.9	15.2	22	232	3.91	46.4	54.4	361	68.2	0.39	32.7
	5.0	14.7	18.7	17	279	3.86	55.9	66.4	439	81.8	0.387	26.3
	6.3	18.2	23.2	12.9	336	3.8	67.1	80.9	534	97.8	0.384	21.1
	8.0	22.6	28.8	9.5	400	3.73	79.9	98.2	646	116	0.379	16.8
	10.0	27.4	34.9	7	462	3.64	92.4	116	761	133	0.374	13.6
120 x 120	5.0	17.8	22.7	21	498	4.68	83	97.6	777	122	0.467	26.2
	6.3	22.2	28.2	16	603	4.62	100	120	950	147	0.464	20.9
	8.0	27.6	35.2	12	726	4.55	121	146	1160	176	0.459	16.6
	10.0	33.7	42.9	9	852	4.46	142	175	1380	206	0.454	13.5
	12.5	40.9	52.1	6.6	982	4.34	164	207	1620	236	0.448	11
140 x 140	5.0	21	26.7	25	807	5.5	115	135	1250	170	0.547	26.1
	6.3	26.1	33.3	19.2	984	5.44	141	166	1540	206	0.544	20.8
	8.0	32.6	41.6	14.5	1200	5.36	171	204	1890	249	0.539	16.5
	10.0	40	50.9	11	1420	5.27	202	246	2270	294	0.534	13.4
	12.5	48.7	62.1	8.2	1650	5.16	236	293	2700	342	0.528	10.8
150 x 150	5.0	22.6	28.7	27	1000	5.9	134	156	1550	197	0.587	26
	6.3	28.1	35.8	20.8	1220	5.85	163	192	1910	240	0.584	20.8
	8.0	35.1	44.8	15.8	1490	5.77	199	237	2350	291	0.579	16.5
	10.0	43.1	54.9	12	1770	5.68	236	286	2830	344	0.574	13.3
	12.5	52.7	67.1	9	2080	5.57	277	342	3380	402	0.568	10.8
160 x 160	5.0	24.1	30.7	29	1230	6.31	153	178	1890	226	0.627	26
	6.3	30.1	38.3	22.4	1500	6.26	187	220	2330	275	0.624	20.7
	8.0	37.6	48	17	1830	6.18	229	272	2880	335	0.619	16.5
	10.0	46.3	58.9	13	2190	6.09	273	329	3480	398	0.614	13.3
	12.5	56.6	72.1	9.8	2580	5.98	322	395	4160	467	0.608	10.7
	14.2	63.3	80.7	8.27	2810	5.9	351	436	4580	508	0.603	9.53
180 x 180	6.3	34	43.3	25.6	2170	7.07	241	281	3360	355	0.704	20.7
	8.0	42.7	54.4	19.5	2660	7	296	349	4160	434	0.699	16.4
	10.0	52.5	66.9	15	3190	6.91	355	424	5050	518	0.694	13.2
	12.5	64.4	82.1	11.4	3790	6.8	421	511	6070	613	0.688	10.7
	14.2	72.2	92	9.68	4150	6.72	462	566	6710	670	0.683	9.46
	16.0	80.2	102	8.25	4500	6.64	500	621	7340	724	0.679	8.46
200 x 200	5.0	30.4	38.7	37	2450	7.95	245	283	3760	362	0.787	25.9
	6.3	38	48.4	28.7	3010	7.89	301	350	4650	444	0.784	20.6
	8.0	47.7	60.8	22	3710	7.81	371	436	5780	545	0.779	16.3
	10.0	58.8	74.9	17	4470	7.72	447	531	7030	655	0.774	13.2
	12.5	72.3	92.1	13	5340	7.61	534	643	8490	778	0.768	10.6
	14.2	81.1	103	11.1	5870	7.54	587	714	9420	854	0.763	9.41
	16.0	90.3	115	9.5	6390	7.46	639	785	10300	927	0.759	8.4

Section Designation		Mass per Metre	Area of Section	Ratio for Local Buckling	Second Moment of Area	Radius of Gyration	Elastic Modulus	Plastic Modulus	Torsional Constants		Surface Area	
Size D x B mm	Thickness t mm	kg/m	A cm^{2}	d/t [1]	I cm^{4}	r cm	Z cm^{3}	S cm^{3}	J cm^{4}	C cm^{3}	Per Metre m^{2}	Per Tonne m^{2}
250 x 250	6.3	47.9	61	36.7	6010	9.93	481	556	9240	712	0.984	20.5
	8.0	60.3	76.8	28.3	7460	9.86	596	694	11500	880	0.979	16.3
	10.0	74.5	94.9	22	9060	9.77	724	851	14100	1070	0.974	13.1
	12.5	91.9	117	17	10900	9.66	873	1040	17200	1280	0.968	10.5
	14.2	103	132	14.6	12100	9.58	967	1160	19100	1410	0.963	9.31
	16.0	115	147	12.6	13300	9.5	1060	1280	21100	1550	0.959	8.31
260 x 260	6.3	49.9	63.5	38.3	6790	10.3	522	603	10400	773	1.02	20.5
	8.0	62.8	80	29.5	8420	10.3	648	753	13000	956	1.02	16.2
	10.0	77.7	98.9	23	10200	10.2	788	924	15900	1160	1.01	13.1
	12.5	95.8	122	17.8	12400	10.1	951	1130	19400	1390	1.01	10.5
	14.2	108	137	15.3	13700	9.99	1060	1260	21700	1540	1.00	9.30
	16.0	120	153	13.3	15100	9.91	1160	1390	23900	1690	0.999	8.29
300 x 300	6.3	57.8	73.6	44.6	10500	12	703	809	16100	1040	1.18	20.5
	8.0	72.8	92.8	34.5	13100	11.9	875	1010	20200	1290	1.18	16.2
	10.0	90.2	115	27	16000	11.8	1070	1250	24800	1580	1.17	13
	12.5	112	142	21	19400	11.7	1300	1530	30300	1900	1.17	10.5
	14.2	126	160	18.1	21600	11.6	1440	1710	33900	2110	1.16	9.25
	16.0	141	179	15.8	23900	11.5	1590	1900	37600	2330	1.16	8.25
350 x 350	8.0	85.4	109	40.8	21100	13.9	1210	1390	32400	1790	1.38	16.2
	10.0	106	135	32	25900	13.9	1480	1720	39900	2190	1.37	13
	12.5	131	167	25	31500	13.7	1800	2110	48900	2650	1.37	10.4
	14.2	148	189	21.6	35200	13.7	2010	2360	54900	2960	1.36	9.21
	16.0	166	211	18.9	38900	13.6	2230	2630	61000	3260	1.36	8.2
400 x 400	10.0	122	155	37	39100	15.9	1960	2260	60100	2900	1.57	12.9
	12.5	151	192	29	47800	15.8	2390	2780	73900	3530	1.57	10.4
	14.2	170	217	25.2	53500	15.7	2680	3130	83000	3940	1.56	9.18
	16.0	191	243	22	59300	15.6	2970	3480	92400	4360	1.56	8.17
	20.0	235	300	17	71500	15.4	3580	4250	112000	5240	1.55	6.58

BS 5950-1: 2000
BS EN 10210-2: 2006

HOT-FINISHED
ELLIPTICAL HOLLOW SECTIONS



Hot Finished

Celsius® EHS

Dimensions and properties

Section Designation		Mass per Metre	Area of Section	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Torsional Constants		Surface Area	
Size	Thickness			Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y			Per Metre	Per Tonne
H x B	t		A									J	C		
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^2
150 x 75	4.0	10.7	13.6	301	101	4.7	2.72	40.1	26.9	56.1	34.4	303	60.1	0.363	33.9
	5.0	13.3	16.9	367	122	4.66	2.69	48.9	32.5	68.9	42	367	72.2	0.363	27.4
	6.3	16.5	21	448	147	4.62	2.64	59.7	39.1	84.9	51.5	443	86.3	0.363	22
200 x 100	5.0	17.9	22.8	897	302	6.27	3.64	89.7	60.4	125	76.8	905	135	0.484	27.1
	6.3	22.3	28.4	1100	368	6.23	3.6	110	73.5	155	94.7	1110	163	0.484	21.7
	8.0	28	35.7	1360	446	6.17	3.54	136	89.3	193	117	1350	197	0.484	17.3
	10.0	34.5	44	1640	529	6.1	3.47	164	106	235	141	1610	232	0.484	14
250 x 125	6.3	28.2	35.9	2210	742	7.84	4.55	176	119	246	151	2220	265	0.605	21.5
	8.0	35.4	45.1	2730	909	7.78	4.49	219	145	307	188	2730	323	0.605	17.1
	10.0	43.8	55.8	3320	1090	7.71	4.42	265	174	376	228	3290	385	0.605	13.8
	12.5	53.9	68.7	4000	1290	7.63	4.34	320	207	458	276	3920	453	0.605	11.2
300 x 150	8.0	42.8	54.5	4810	1620	9.39	5.44	321	215	449	275	4850	481	0.726	17
	10.0	53	67.5	5870	1950	9.32	5.37	391	260	551	336	5870	577	0.726	13.7
	12.5	65.5	83.4	7120	2330	9.24	5.29	475	311	674	409	7050	686	0.726	11.1
	16.0	82.5	105	8730	2810	9.12	5.17	582	374	837	503	8530	818	0.726	8.81
400 x 200	8.0	57.6	73.4	11700	3970	12.6	7.35	584	397	811	500	11900	890	0.969	16.8
	10.0	71.5	91.1	14300	4830	12.5	7.28	717	483	1000	615	14500	1080	0.969	13.5
	12.5	88.6	113	17500	5840	12.5	7.19	877	584	1230	753	17600	1300	0.969	10.9
	16.0	112	143	21700	7140	12.3	7.07	1090	714	1540	936	21600	1580	0.969	8.64
500 x 250	10.0	90	115	28539	9682	15.8	9.2	1142	775	1585	976	28950	1739	1.21	13.5
	12.5	112	142	35000	11800	15.7	9.1	1400	943	1960	1200	35300	2110	1.21	10.8
	16.0	142	180	43700	14500	15.6	8.98	1750	1160	2460	1500	43700	2590	1.21	8.55