

CIRCULAR HOLLOW SECTION

Product Range

21.3mm to 355.6mm

Thickness

1mm to 10mm



CIRCULAR HOLLOW SECTION FOR STRUCTURAL PURPOSES CONFORMING TO IS:1161 : 2014

Outside Diameter	Thickness	Mass	Area of Cross Section	Internal Volume	Moment of Inertia	Elastic Modulus	Plastic Modulus	Radius of Gyration	Square of Radius of Gyration	Torsional Constant
mm	mm	kg/m	cm ²	cm ³ /m	cm ⁴	cm ³	cm ³	cm	cm ²	cm ³
21.30	1.60	0.78	0.99	257	0.48	0.45	0.62	0.70	0.49	0.91
21.30	1.80	0.87	1.10	246	0.53	0.50	0.69	0.69	0.48	0.99
21.30	2.00	0.95	1.21	235	0.57	0.54	0.75	0.69	0.47	1.07
21.30	2.30	1.08	1.37	219	0.63	0.59	0.83	0.68	0.46	1.18
21.30	2.60	1.20	1.53	204	0.68	0.64	0.92	0.67	0.45	1.28
21.30	2.90	1.32	1.68	189	0.73	0.68	0.99	0.66	0.43	1.37
26.90	1.60	1.00	1.27	441	1.02	0.76	1.03	0.90	0.80	1.52
26.90	1.80	1.11	1.42	426	1.12	0.84	1.14	0.89	0.79	1.67
26.90	2.00	1.23	1.56	412	1.22	0.91	1.24	0.88	0.78	1.81
26.90	2.30	1.40	1.78	391	1.36	1.01	1.40	0.87	0.76	2.02
26.90	2.60	1.56	1.98	370	1.48	1.10	1.54	0.86	0.75	2.20
26.90	2.90	1.72	2.19	350	1.60	1.19	1.68	0.85	0.73	2.38
33.70	1.60	1.27	1.61	731	2.08	1.24	1.65	1.14	1.29	2.47
33.70	1.80	1.42	1.80	712	2.30	1.37	1.83	1.13	1.28	2.73
33.70	2.00	1.56	1.99	693	2.51	1.49	2.01	1.12	1.26	2.98
33.70	2.30	1.78	2.27	665	2.81	1.67	2.27	1.11	1.24	3.34
33.70	2.60	1.99	2.54	638	3.09	1.84	2.52	1.10	1.22	3.67
33.70	2.90	2.20	2.81	611	3.36	1.99	2.76	1.09	1.20	3.98
33.70	3.20	2.41	3.07	585	3.60	2.14	2.99	1.08	1.18	4.28
33.70	3.60	2.67	3.40	552	3.91	2.32	3.28	1.07	1.15	4.64
38.10	3.00	2.60	3.31	809	5.13	2.69	3.71	1.25	1.55	5.39
38.10	4.00	3.36	4.29	712	6.31	3.31	4.67	1.21	1.47	6.63
38.10	5.00	4.08	5.20	620	7.28	3.82	5.52	1.18	1.40	7.65
38.10	6.00	4.75	6.05	535	8.07	4.23	6.25	1.15	1.33	8.47
38.10	8.00	5.94	7.56	384	9.17	4.82	7.42	1.10	1.21	9.63
42.40	1.60	1.61	2.05	1207	4.27	2.02	2.66	1.44	2.08	4.03
42.40	1.80	1.80	2.30	1182	4.74	2.24	2.97	1.44	2.06	4.47
42.40	2.00	1.99	2.54	1158	5.19	2.45	3.27	1.43	2.05	4.90
42.40	2.30	2.27	2.90	1122	5.84	2.76	3.70	1.42	2.02	5.51
42.40	2.60	2.55	3.25	1087	6.46	3.05	4.12	1.41	1.99	6.10
42.40	2.90	2.83	3.60	1052	7.06	3.33	4.53	1.40	1.96	6.66
42.40	3.20	3.09	3.94	1018	7.62	3.59	4.93	1.39	1.93	7.19
42.40	3.60	3.45	4.39	973	8.33	3.93	5.44	1.38	1.90	7.86
48.30	1.60	1.84	2.35	1598	6.41	2.65	3.49	1.65	2.73	5.31
48.30	1.80	2.06	2.63	1569	7.12	2.95	3.89	1.65	2.71	5.89
48.30	2.00	2.28	2.91	1541	7.81	3.23	4.29	1.64	2.68	6.47
48.30	2.30	2.61	3.32	1500	8.81	3.65	4.87	1.63	2.65	7.30
48.30	2.60	2.93	3.73	1459	9.78	4.05	5.44	1.62	2.62	8.10
48.30	2.90	3.25	4.14	1419	10.70	4.43	5.99	1.61	2.59	8.86
48.30	3.00	3.35	4.27	1405	11.00	4.55	6.17	1.61	2.58	9.11
48.30	3.20	3.56	4.53	1379	11.59	4.80	6.52	1.60	2.56	9.59
48.30	3.60	3.97	5.06	1327	12.71	5.26	7.21	1.59	2.51	10.52
48.30	4.00	4.37	5.57	1276	13.77	5.70	7.87	1.57	2.47	11.40
48.30	4.50	4.86	6.19	1213	15.01	6.21	8.66	1.56	2.42	12.43
48.30	5.00	5.34	6.80	1152	16.15	6.69	9.42	1.54	2.37	13.38
48.30	6.00	6.26	7.97	1035	18.19	7.53	10.81	1.51	2.28	15.07
48.30	8.00	7.95	10.13	819	21.37	8.85	13.16	1.45	2.11	17.70

CIRCULAR HOLLOW SECTION FOR STRUCTURAL PURPOSES CONFORMING TO IS:1161 : 2014

Outside Diameter	Thickness	Mass	Area of Cross Section	Internal Volume	Moment of Inertia	Elastic Modulus	Plastic Modulus	Radius of Gyration	Square of Radius of Gyration	Torsional Constant
mm	mm	kg/m	cm ²	cm ³ /m	cm ⁴	cm ³	cm ³	cm	cm ²	cm ³
60.30	1.60	2.32	2.95	2561	12.72	4.22	5.51	2.08	4.31	8.44
60.30	2.00	2.88	3.66	2489	15.58	5.17	6.80	2.06	4.25	10.34
60.30	2.30	3.29	4.19	2437	17.65	5.85	7.74	2.05	4.21	11.71
60.30	2.60	3.70	4.71	2384	19.65	6.52	8.66	2.04	4.17	13.04
60.30	2.90	4.11	5.23	2333	21.59	7.16	9.56	2.03	4.13	14.32
60.30	3.00	4.24	5.40	2316	22.22	7.37	9.86	2.03	4.12	14.74
60.30	3.20	4.51	5.74	2282	23.47	7.78	10.44	2.02	4.09	15.57
60.30	3.60	5.03	6.41	2215	25.87	8.58	11.59	2.01	4.03	17.16
60.30	4.00	5.55	7.07	2148	28.17	9.34	12.70	2.00	3.98	18.69
60.30	4.50	6.19	7.89	2067	30.90	10.25	14.04	1.98	3.92	20.50
60.30	5.00	6.82	8.69	1987	33.48	11.10	15.33	1.96	3.85	22.21
60.30	6.00	8.04	10.24	1832	38.18	12.66	17.76	1.93	3.73	25.33
60.30	8.00	10.32	13.14	1541	45.99	15.25	22.05	1.87	3.50	30.51
76.10	2.00	3.66	4.66	4083	31.98	8.40	10.98	2.62	6.87	16.81
76.10	2.30	4.19	5.33	4015	36.34	9.55	12.53	2.61	6.81	19.10
76.10	2.60	4.71	6.00	3948	40.59	10.67	14.05	2.60	6.76	21.34
76.10	2.90	5.24	6.67	3882	44.74	11.76	15.55	2.59	6.71	23.52
76.10	3.20	5.75	7.33	3816	48.78	12.82	17.02	2.58	6.66	25.64
76.10	3.60	6.44	8.20	3728	54.01	14.19	18.94	2.57	6.59	28.39
76.10	4.00	7.11	9.06	3642	59.06	15.52	20.81	2.55	6.52	31.04
76.10	4.50	7.95	10.12	3536	65.12	17.11	23.10	2.54	6.43	34.23
76.10	5.00	8.77	11.17	3432	70.92	18.64	25.32	2.52	6.35	37.28
76.10	6.00	10.37	13.21	3227	81.76	21.49	29.56	2.49	6.19	42.97
76.10	8.00	13.44	17.12	2837	100.59	26.44	37.27	2.42	5.88	52.87
76.10	9.00	14.90	18.97	2651	108.70	28.57	40.76	2.39	5.73	57.13
88.90	2.00	4.29	5.46	5661	51.57	11.60	15.11	3.07	9.44	23.20
88.90	2.30	4.91	6.26	5581	58.70	13.21	17.25	3.06	9.38	26.41
88.90	2.60	5.53	7.05	5502	65.68	14.78	19.37	3.05	9.32	29.55
88.90	2.90	6.15	7.84	5424	72.52	16.31	21.46	3.04	9.26	32.63
88.90	3.20	6.76	8.62	5346	79.21	17.82	23.51	3.03	9.19	35.64
88.90	3.60	7.57	9.65	5242	87.90	19.77	26.21	3.02	9.11	39.55
88.90	4.00	8.38	10.67	5140	96.34	21.67	28.85	3.00	9.03	43.35
88.90	4.50	9.37	11.93	5014	106.54	23.97	32.09	2.99	8.93	47.94
88.90	5.00	10.35	13.18	4889	116.37	26.18	35.24	2.97	8.83	52.36
88.90	6.00	12.27	15.63	4645	134.94	30.36	41.31	2.94	8.64	60.72
88.90	8.00	15.96	20.33	4174	167.97	37.79	52.53	2.87	8.26	75.58
88.90	9.00	17.74	22.59	3948	182.57	41.07	57.70	2.84	8.08	82.14
88.90	10.00	19.46	24.79	3728	195.98	44.09	62.59	2.81	7.91	88.18
101.60	2.00	4.91	6.26	7482	77.63	15.28	19.84	3.52	12.41	30.56
101.60	2.30	5.63	7.18	7390	88.48	17.42	22.68	3.51	12.33	34.84
101.60	2.60	6.35	8.09	7299	99.14	19.52	25.49	3.50	12.26	39.03
101.60	2.90	7.06	8.99	7208	109.59	21.57	28.26	3.49	12.19	43.15
101.60	3.20	7.77	9.89	7118	119.85	23.59	31.00	3.48	12.12	47.19
101.60	3.60	8.70	11.08	6999	133.24	26.23	34.59	3.47	12.02	52.46
101.60	4.00	9.63	12.26	6881	146.28	28.80	38.12	3.45	11.93	57.59
101.60	4.50	10.78	13.73	6735	162.13	31.92	42.46	3.44	11.81	63.83
101.60	5.00	11.91	15.17	6590	177.47	34.93	46.70	3.42	11.70	69.87

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mm	mm	kg/m	cm ²	cm ³ /m	cm ⁴	cm ³	cm ³	cm	cm ²	cm ³
114.30	2.00	5.54	7.06	9555	111.27	19.47	25.23	3.97	15.77	38.94
114.30	2.30	6.35	8.09	9452	126.95	22.21	28.86	3.96	15.69	44.43
114.30	2.60	7.16	9.12	9348	142.37	24.91	32.45	3.95	15.60	49.82
114.30	2.90	7.97	10.15	9246	157.55	27.57	36.00	3.94	15.52	55.13
114.30	3.00	8.24	10.49	9212	162.55	28.44	37.17	3.94	15.50	56.88
114.30	3.20	8.77	11.17	9144	172.47	30.18	39.51	3.93	15.44	60.36
114.30	3.60	9.83	12.52	9009	191.98	33.59	44.13	3.92	15.33	67.19
114.30	4.00	10.88	13.86	8875	211.07	36.93	48.69	3.90	15.23	73.86
114.30	4.50	12.19	15.52	8709	234.32	41.00	54.28	3.89	15.10	82.00
114.30	5.00	13.48	17.17	8544	256.92	44.96	59.77	3.87	14.96	89.91
114.30	6.00	16.03	20.41	8219	300.21	52.53	70.45	3.83	14.71	105.06
127.00	2.00	6.17	7.85	11882	153.44	24.16	31.25	4.42	19.54	48.33
127.00	2.60	7.98	10.16	11652	196.65	30.97	40.24	4.40	19.35	61.94
127.00	2.90	8.88	11.31	11537	217.78	34.30	44.67	4.39	19.26	68.59
127.00	3.00	9.18	11.69	11499	224.75	35.39	46.14	4.39	19.23	70.79
127.00	3.20	9.77	12.45	11423	238.60	37.57	49.06	4.38	19.17	75.15
127.00	3.60	10.96	13.96	11272	265.87	41.87	54.83	4.36	19.05	83.74
127.00	4.00	12.14	15.46	11122	292.61	46.08	60.54	4.35	18.93	92.16
127.00	4.50	13.60	17.32	10936	325.29	51.23	67.56	4.33	18.78	102.45
127.00	5.00	15.05	19.16	10751	357.14	56.24	74.46	4.32	18.64	112.48
127.00	6.00	17.91	22.81	10387	418.44	65.90	87.92	4.28	18.35	131.79
139.70	2.60	8.79	11.20	14208	263.21	37.68	48.88	4.85	23.50	75.36
139.70	2.90	9.79	12.46	14082	291.68	41.76	54.28	4.84	23.40	83.52
139.70	3.20	10.77	13.72	13956	319.78	45.78	59.63	4.83	23.30	91.56
139.70	3.60	12.09	15.39	13789	356.65	51.06	66.70	4.81	23.17	102.12
139.70	4.00	13.39	17.05	13623	392.86	56.24	73.68	4.80	23.04	112.49
139.70	4.50	15.01	19.11	13417	437.20	62.59	82.29	4.78	22.87	125.18
139.70	5.00	16.61	21.16	13212	480.54	68.80	90.76	4.77	22.71	137.59
139.70	6.00	19.79	25.20	12808	564.26	80.78	107.33	4.73	22.39	161.56
139.70	8.00	25.99	33.10	12018	720.29	103.12	138.93	4.66	21.76	206.24
165.10	2.60	10.42	13.27	20081	438.23	53.09	68.66	5.75	33.02	106.17
165.10	2.90	11.60	14.78	19931	486.13	58.89	76.30	5.74	32.90	117.78
165.10	3.20	12.78	16.28	19781	533.48	64.63	83.89	5.73	32.78	129.25
165.10	3.60	14.34	18.27	19582	595.79	72.17	93.91	5.71	32.62	144.35
165.10	4.00	15.89	20.24	19384	657.16	79.61	103.83	5.70	32.46	159.22
165.10	4.50	17.83	22.70	19138	732.57	88.74	116.10	5.68	32.27	177.49
165.10	5.00	19.75	25.15	18894	806.54	97.70	128.20	5.66	32.07	195.41
165.10	6.00	23.55	29.99	18409	950.25	115.11	151.95	5.63	31.69	230.22
165.10	8.00	31.00	39.48	17460	1221.25	147.94	197.61	5.56	30.93	295.88
168.30	2.60	10.63	13.53	20893	464.63	55.21	71.39	5.86	34.33	110.43
168.30	2.90	11.83	15.07	20739	515.46	61.26	79.34	5.85	34.21	122.51
168.30	3.20	13.03	16.60	20587	565.74	67.23	87.24	5.84	34.09	134.46
168.30	3.60	14.63	18.63	20384	631.90	75.09	97.67	5.82	33.92	150.18
168.30	4.00	16.21	20.65	20182	697.09	82.84	108.00	5.81	33.76	165.68
168.30	4.50	18.18	23.16	19931	777.22	92.36	120.77	5.79	33.56	184.72
168.30	5.00	20.14	25.65	19681	855.85	101.70	133.38	5.78	33.36	203.41
168.30	6.00	24.02	30.59	19187	1008.69	119.87	158.12	5.74	32.97	239.74

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mm	mm	kg/m	cm ²	cm ³ /m	cm ⁴	cm ³	cm ³	cm	cm ²	cm ³
168.30	8.00	31.63	40.29	18218	1297.27	154.16	205.74	5.67	32.20	308.32
193.70	2.60	12.26	15.61	27907	712.68	73.59	94.96	6.76	45.66	147.17
193.70	2.90	13.65	17.38	27730	791.21	81.69	105.58	6.75	45.52	163.39
193.70	3.20	15.04	19.15	27553	869.00	89.73	116.14	6.74	45.38	179.45
193.70	3.60	16.88	21.50	27318	971.55	100.31	130.11	6.72	45.19	200.63
193.70	4.00	18.72	23.84	27084	1072.79	110.77	143.97	6.71	45.00	221.54
193.70	4.50	21.00	26.75	26793	1197.52	123.65	161.12	6.69	44.77	247.29
193.70	5.00	23.27	29.64	26504	1320.23	136.32	178.08	6.67	44.54	272.63
193.70	6.00	27.78	35.38	25930	1559.72	161.05	211.46	6.64	44.08	322.09
193.70	8.00	36.64	46.67	24801	2015.54	208.11	276.05	6.57	43.19	416.22
219.10	2.60	13.88	17.68	35934	1036.26	94.59	121.87	7.65	58.60	189.19
219.10	2.90	15.47	19.70	35733	1151.07	105.07	135.56	7.64	58.44	210.15
219.10	3.20	17.04	21.70	35532	1264.92	115.47	149.17	7.63	58.28	230.93
219.10	3.60	19.14	24.37	35266	1415.22	129.19	167.20	7.62	58.07	258.37
219.10	4.00	21.22	27.03	35000	1563.84	142.75	185.09	7.61	57.86	285.50
219.10	5.00	26.41	33.63	34340	1928.04	176.00	229.24	7.57	57.33	351.99
219.10	6.00	31.54	40.17	33686	2281.95	208.30	272.54	7.54	56.81	416.60
219.10	8.00	41.66	53.06	32397	2959.63	270.16	356.68	7.47	55.78	540.33
219.10	10.00	51.58	65.69	31134	3598.44	328.47	437.56	7.40	54.78	656.95
244.50	4.00	23.73	30.22	43929	2185.67	178.79	231.38	8.50	72.32	357.57
244.50	5.00	29.54	37.62	43189	2698.58	220.74	286.84	8.47	71.73	441.49
244.50	6.00	35.30	44.96	42456	3198.53	261.64	341.37	8.43	71.15	523.28
244.50	8.00	46.67	59.44	41007	4160.45	340.32	447.63	8.37	70.00	680.65
244.50	10.00	57.84	73.67	39584	5073.15	414.98	550.24	8.30	68.86	829.96
273.00	5.00	33.05	42.10	54325	3780.81	276.98	359.16	9.48	89.81	553.97
273.00	6.00	39.52	50.33	53502	4487.08	328.72	427.81	9.44	89.16	657.45
273.00	8.00	52.29	66.60	51875	5851.71	428.70	561.97	9.37	87.86	857.39
273.00	10.00	64.87	82.62	50273	7154.09	524.11	692.02	9.31	86.59	1048.22
273.00	12.00	77.25	98.39	48695	8396.14	615.10	818.03	9.24	85.33	1230.20
323.90	5.00	39.33	50.09	77388	6369.42	393.30	508.53	11.28	127.15	786.59
323.90	6.00	47.05	59.92	76405	7572.47	467.58	606.43	11.24	126.37	935.16
323.90	8.00	62.34	79.39	74458	9910.08	611.92	798.51	11.17	124.82	1223.84
323.90	10.00	77.43	98.61	72536	12158.34	750.75	985.67	11.10	123.29	1501.49
323.90	12.00	92.32	117.58	70639	14319.56	884.20	1167.96	11.04	121.78	1768.39
355.60	6.00	51.74	65.90	92725	10070.55	566.40	733.39	12.36	152.82	1132.80
355.60	8.00	68.59	87.36	90579	13201.37	742.48	966.78	12.29	151.11	1484.97
355.60	10.00	85.25	108.57	88457	16223.50	912.46	1194.73	12.22	149.42	1824.92
355.60	12.00	101.70	129.53	86361	19139.47	1076.46	1417.31	12.16	147.76	2152.92
377.00	6.00	54.91	69.93	104635	12035.01	638.46	825.92	13.12	172.10	1276.92
377.00	8.00	72.81	92.74	102354	15791.85	837.76	1089.46	13.05	170.28	1675.53
377.00	10.00	90.52	115.30	100098	19425.87	1030.55	1347.22	12.98	168.49	2061.10
377.00	12.00	108.04	137.60	97868	22939.76	1216.96	1599.28	12.91	166.71	2433.93
406.40	6.00	59.26	75.47	122170	15128.33	744.50	961.99	14.16	200.45	1489.01
406.40	8.00	78.62	100.13	119704	19873.89	978.05	1269.95	14.09	198.48	1956.09
406.40	10.00	97.78	124.53	117264	24475.81	1204.52	1571.66	14.02	196.54	2409.04
406.40	12.00	116.74	148.69	114849	28937.01	1424.07	1867.19	13.95	194.62	2848.13

Tolerance

A - Thickness	Tolerance	B- Weight	Tolerance	Length Tolerance
1. Light Tubes	+ not limited -8%	1. Single Tube (Light Series)	+10% -8%	Unless otherwise Specified 4 to 7 mtrs. Can also be supplied in Fix Lengths ±5cm.
2. Medium & Heavy Tubes	+ not limited -10%	2. Single Tube (Medium & Heavy Series)	±10%	
		3. For quantities per load of 10 tonnes minimum (Light Series)	+7.5% -5%	
		4. For quantities per load of 10 tonnes minimum (Medium and Heavy Series)	±7.5%	

■ UPCOMING SIZES

CHS (Circular Hollow Section) Sizes

SIZE	21.3	26.9	33.7	42.4	48.3	60.3	76.1	88.9	101.6	114.3	127.0	139.7	152.4	165.1	168.3	193.7	219.1	244.5	273.0	323.9	355.6	377.0	406.4	
1.6																								
1.8																								
2.0																								
2.3																								
2.6																								
2.9																								
3.2																								
3.6																								
4.0																								
4.5																								
5.0																								
6.0																								
8.0																								
10.0																								
12.0																								
100																								
120																								



ITO SKYWALK, PWD, NEW DELHI