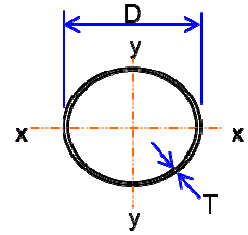
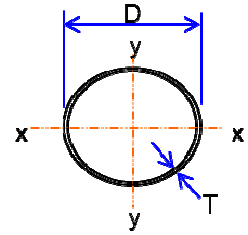


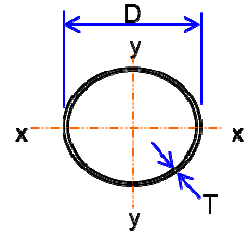
Hot finished Circular Hollow Sections to EN 10210-2												
Designation		Mass	Area	Ratio for	Second	Radius	Elastic	Plastic	Torsional		Section	Nominal
Outside	Thickness	per	of	Local	Moment	of	Modulus	Modulus	Constants		Surface	Length
Diameter		metre	Section	Buckling	of Area	Gyration			Inertia	Modulus	Area	Per
D	T	M	A	D/t	I	r	Z	S	J	C	A _s	Tonne
mm	mm	kg/m	cm ²		cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m
21.3	2.3	1.08	1.37	9.26	0.629	0.677	0.59	0.834	1.26	1.18	0.0669	928
21.3	2.6	1.2	1.53	8.19	0.681	0.668	0.639	0.915	1.36	1.28	0.0669	834
21.3	3.2	1.43	1.82	6.66	0.768	0.65	0.722	1.06	1.54	1.44	0.0669	700
26.9	2.3	1.4	1.78	11.7	1.36	0.874	1.01	1.4	2.71	2.02	0.0845	717
26.9	2.6	1.56	1.98	10.3	1.48	0.864	1.1	1.54	2.96	2.2	0.0845	642
26.9	3.2	1.87	2.38	8.41	1.7	0.846	1.27	1.81	3.41	2.54	0.0845	535
33.7	2.6	1.99	2.54	13	3.09	1.1	1.84	2.52	6.19	3.68	0.106	501
33.7	3	2.27	2.89	11.2	3.44	1.09	2.04	2.84	6.88	4.08	0.106	440
33.7	3.2	2.41	3.07	10.5	3.6	1.08	2.14	2.99	7.21	4.28	0.106	415
33.7	3.6	2.67	3.4	9.36	3.91	1.07	2.32	3.28	7.82	4.64	0.106	374
33.7	4	2.93	3.73	8.43	4.19	1.06	2.49	3.55	8.38	4.98	0.106	341
42.4	2.6	2.55	3.25	16.3	6.46	1.41	3.05	4.12	12.9	6.1	0.133	392
42.4	3	2.91	3.71	14.1	7.25	1.4	3.42	4.67	14.5	6.84	0.133	343
42.4	3.2	3.09	3.94	13.2	7.62	1.39	3.59	4.93	15.2	7.18	0.133	323
42.4	3.6	3.44	4.39	11.8	8.33	1.38	3.93	5.44	16.7	7.86	0.133	290
42.4	4	3.79	4.83	10.6	8.99	1.36	4.24	5.92	18	8.48	0.133	264
48.3	2.5	2.82	3.6	19.3	9.46	1.62	3.92	5.25	18.9	7.84	0.152	354
48.3	2.6	2.93	3.73	18.6	9.78	1.62	4.05	5.44	19.6	8.1	0.152	341
48.3	3	3.35	4.27	16.1	11	1.61	4.55	6.17	22	9.1	0.152	298
48.3	3.2	3.56	4.53	15.1	11.6	1.6	4.8	6.52	23.2	9.6	0.152	281
48.3	3.6	3.97	5.06	13.4	12.7	1.59	5.26	7.21	25.4	10.5	0.152	252
48.3	4	4.37	5.57	12.1	13.8	1.57	5.7	7.87	27.5	11.4	0.152	229
48.3	5	5.34	6.8	9.66	16.2	1.54	6.69	9.42	32.3	13.4	0.152	187
60.3	2.5	3.56	4.54	24.1	19	2.05	6.3	8.36	38	12.6	0.189	281
60.3	2.6	3.7	4.71	23.2	19.7	2.04	6.52	8.66	39.3	13	0.189	270
60.3	3	4.24	5.4	20.1	22.2	2.03	7.37	9.86	44.4	14.7	0.189	236
60.3	3.2	4.51	5.74	18.8	23.5	2.02	7.78	10.4	46.9	15.6	0.189	222
60.3	3.6	5.03	6.41	16.8	25.9	2.01	8.58	11.6	51.7	17.2	0.189	199
60.3	4	5.55	7.07	15.1	28.2	2	9.34	12.7	56.3	18.7	0.189	180
60.3	5	6.82	8.69	12.1	33.5	1.96	11.1	15.3	67	22.2	0.189	147
76.1	2.5	4.54	5.78	30.4	39.2	2.6	10.3	13.5	78.4	20.6	0.239	220
76.1	2.6	4.71	6	29.3	40.6	2.6	10.7	14.1	81.2	21.4	0.239	212
76.1	3	5.41	6.89	25.4	46.1	2.59	12.1	16	92.2	24.2	0.239	185
76.1	3.2	5.75	7.33	23.8	48.8	2.58	12.8	17	97.6	25.6	0.239	174
76.1	3.6	6.44	8.2	21.1	54	2.57	14.2	18.9	108	28.4	0.239	155
76.1	4	7.11	9.06	19	59.1	2.55	15.5	20.8	118	31	0.239	141
76.1	5	8.77	11.2	15.2	70.9	2.52	18.6	25.3	142	37.2	0.239	114
76.1	6	10.4	13.2	12.7	81.8	2.49	21.5	29.6	164	43	0.239	96.4
76.1	6.3	10.8	13.8	12.1	84.8	2.48	22.3	30.8	170	44.6	0.239	92.2
88.9	2.5	5.33	6.79	35.6	63.4	3.06	14.3	18.7	127	28.6	0.279	188
88.9	3	6.36	8.1	29.6	74.8	3.04	16.8	22.1	150	33.6	0.279	157
88.9	3.2	6.76	8.62	27.8	79.2	3.03	17.8	23.5	158	35.6	0.279	148
88.9	3.6	7.57	9.65	24.7	87.9	3.02	19.8	26.2	176	39.6	0.279	132
88.9	4	8.38	10.7	22.2	96.3	3	21.7	28.9	193	43.4	0.279	119
88.9	5	10.3	13.2	17.8	116	2.97	26.2	35.2	233	52.4	0.279	96.7
88.9	6	12.3	15.6	14.8	135	2.94	30.4	41.3	270	60.8	0.279	81.5
88.9	6.3	12.8	16.3	14.1	140	2.93	31.5	43.1	280	63	0.279	77.9
101.6	3.2	7.77	9.89	31.7	120	3.48	23.6	31	240	47.2	0.319	129



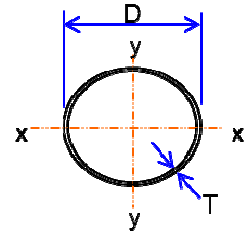
Hot finished Circular Hollow Sections to EN 10210-2												
Designation		Mass	Area	Ratio for	Second	Radius	Elastic	Plastic	Torsional		Section	Nominal
Outside	Thickness	per	of	Local	Moment	of	Modulus	Modulus	Constants		Surface	Length
Diameter		metre	Section	Buckling	of Area	Gyration			Inertia	Modulus	Area	Per
D	T	M	A	D/t	I	r	Z	S	J	C	A _s	Tonne
mm	mm	kg/m	cm ²		cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m
101.6	4	9.63	12.3	25.4	146	3.45	28.8	38.1	293	57.6	0.319	104
101.6	5	11.9	15.2	20.3	177	3.42	34.9	46.7	355	69.8	0.319	84
101.6	6	14.1	18	16.9	207	3.39	40.7	54.9	413	81.4	0.319	70.7
101.6	6.3	14.8	18.9	16.1	215	3.38	42.3	57.3	430	84.6	0.319	67.5
101.6	8	18.5	23.5	12.7	260	3.32	51.1	70.3	519	102	0.319	54.2
101.6	10	22.6	28.8	10.2	305	3.26	60.1	84.2	611	120	0.319	44.3
114.3	3	8.23	10.5	38.1	163	3.94	28.4	37.2	325	56.8	0.359	121
114.3	3.2	8.77	11.2	35.7	172	3.93	30.2	39.5	345	60.4	0.359	114
114.3	3.6	9.83	12.5	31.8	192	3.92	33.6	44.1	384	67.2	0.359	102
114.3	4	10.9	13.9	28.6	211	3.9	36.9	48.7	422	73.8	0.359	91.9
114.3	5	13.5	17.2	22.9	257	3.87	45	59.8	514	90	0.359	74.2
114.3	6	16	20.4	19.1	300	3.83	52.5	70.4	600	105	0.359	62.4
114.3	6.3	16.8	21.4	18.1	313	3.82	54.7	73.6	625	109	0.359	59.6
114.3	8	21	26.7	14.3	379	3.77	66.4	90.6	759	133	0.359	47.7
114.3	10	25.7	32.8	11.4	450	3.7	78.7	109	899	157	0.359	38.9
139.7	3.2	10.8	13.7	43.7	320	4.83	45.8	59.6	640	91.6	0.439	92.8
139.7	3.6	12.1	15.4	38.8	357	4.81	51.1	66.7	713	102	0.439	82.8
139.7	4	13.4	17.1	34.9	393	4.8	56.2	73.7	786	112	0.439	74.7
139.7	5	16.6	21.2	27.9	481	4.77	68.8	90.8	961	138	0.439	60.2
139.7	6	19.8	25.2	23.3	564	4.73	80.8	107	1129	162	0.439	50.5
139.7	6.3	20.7	26.4	22.2	589	4.72	84.3	112	1177	169	0.439	48.2
139.7	8	26	33.1	17.5	720	4.66	103	139	1441	206	0.439	38.5
139.7	10	32	40.7	14	862	4.6	123	169	1724	246	0.439	31.3
139.7	12	37.8	48.1	11.6	990	4.53	142	196	1980	284	0.439	26.5
139.7	12.5	39.2	50	11.2	1020	4.52	146	203	2040	292	0.439	25.5
168.3	3.2	13	16.6	52.6	566	5.84	67.2	87.2	1131	134	0.529	76.8
168.3	3.6	14.6	18.6	46.8	632	5.82	75.1	97.7	1264	150	0.529	68.4
168.3	4	16.2	20.6	42.1	697	5.81	82.8	108	1394	166	0.529	61.7
168.3	5	20.1	25.7	33.7	856	5.78	102	133	1712	204	0.529	49.7
168.3	6	24	30.6	28.1	1009	5.74	120	158	2017	240	0.529	41.6
168.3	6.3	25.2	32.1	26.7	1053	5.73	125	165	2107	250	0.529	39.7
168.3	8	31.6	40.3	21	1297	5.67	154	206	2595	308	0.529	31.6
168.3	10	39	49.7	16.8	1564	5.61	186	251	3128	372	0.529	25.6
168.3	12	46.3	58.9	14	1810	5.54	215	294	3620	430	0.529	21.6
168.3	12.5	48	61.2	13.5	1868	5.53	222	304	3737	444	0.529	20.8
177.8	5	21.3	27.1	35.6	1014	6.11	114	149	2028	228	0.559	46.9
177.8	6	25.4	32.4	29.6	1196	6.08	135	177	2392	270	0.559	39.3
177.8	6.3	26.6	33.9	28.2	1250	6.07	141	185	2499	282	0.559	37.5
177.8	8	33.5	42.7	22.2	1541	6.01	173	231	3083	346	0.559	29.9
177.8	10	41.4	52.7	17.8	1862	5.94	209	282	3724	418	0.559	24.2
177.8	12	49.1	62.5	14.8	2159	5.88	243	330	4318	486	0.559	20.4
177.8	12.5	51	64.9	14.2	2230	5.86	251	342	4460	502	0.559	19.6
193.7	5	23.3	29.6	38.7	1320	6.67	136	178	2640	272	0.609	43
193.7	6	27.8	35.4	32.3	1560	6.64	161	211	3119	322	0.609	36
193.7	6.3	29.1	37.1	30.7	1630	6.63	168	221	3260	336	0.609	34.3
193.7	8	36.6	46.7	24.2	2016	6.57	208	276	4031	416	0.609	27.3
193.7	10	45.3	57.7	19.4	2442	6.5	252	338	4883	504	0.609	22.1
193.7	12	53.8	68.5	16.1	2839	6.44	293	397	5678	586	0.609	18.6



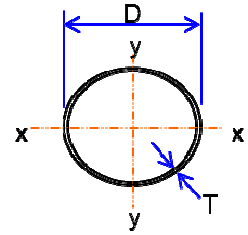
Hot finished Circular Hollow Sections to EN 10210-2												
Designation		Mass	Area	Ratio for	Second	Radius	Elastic	Plastic	Torsional		Section	Nominal
Outside	Thickness	per	of	Local	Moment	of	Modulus	Modulus	Constants		Surface	Length
Diameter		metre	Section	Buckling	of Area	Gyration			Inertia	Modulus	Area	Per
D	T	M	A	D/t	I	r	Z	S	J	C	A _s	Tonne
mm	mm	kg/m	cm ²		cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m
193.7	12.5	55.9	71.2	15.5	2934	6.42	303	411	5869	606	0.609	17.9
193.7	16	70.1	89.3	12.1	3554	6.31	367	507	7109	734	0.609	14.3
219.1	5	26.4	33.6	43.8	1928	7.57	176	229	3856	352	0.688	37.9
219.1	6	31.5	40.2	36.5	2282	7.54	208	273	4564	416	0.688	31.7
219.1	6.3	33.1	42.1	34.8	2386	7.53	218	285	4772	436	0.688	30.2
219.1	8	41.6	53.1	27.4	2960	7.47	270	357	5919	540	0.688	24
219.1	10	51.6	65.7	21.9	3598	7.4	328	438	7197	656	0.688	19.4
219.1	12	61.3	78.1	18.3	4200	7.33	383	515	8400	766	0.688	16.3
219.1	12.5	63.7	81.1	17.5	4345	7.32	397	534	8689	794	0.688	15.7
219.1	16	80.1	102	13.7	5297	7.2	483	661	10593	966	0.688	12.5
219.1	20	98.2	125	11	6261	7.07	572	795	12523	1144	0.688	10.2
244.5	5	29.5	37.6	48.9	2699	8.47	221	287	5397	442	0.768	33.9
244.5	6	35.3	45	40.8	3199	8.43	262	341	6397	524	0.768	28.3
244.5	6.3	37	47.1	38.8	3346	8.42	274	358	6692	548	0.768	27
244.5	8	46.7	59.4	30.6	4160	8.37	340	448	8321	680	0.768	21.4
244.5	10	57.8	73.7	24.5	5073	8.3	415	550	10146	830	0.768	17.3
244.5	12	68.8	87.7	20.4	5938	8.23	486	649	11877	972	0.768	14.5
244.5	12.5	71.5	91.1	19.6	6147	8.21	503	673	12295	1006	0.768	14
244.5	16	90.2	115	15.3	7533	8.1	616	837	15066	1232	0.768	11.1
244.5	20	111	141	12.2	8957	7.97	733	1011	17914	1466	0.768	9.03
244.5	25	135	172	9.78	10517	7.81	860	1210	21034	1720	0.768	7.39
273	5	33	42.1	54.6	3781	9.48	277	359	7562	554	0.858	30.3
273	6	39.5	50.3	45.5	4487	9.44	329	428	8974	658	0.858	25.3
273	6.3	41.4	52.8	43.3	4696	9.43	344	448	9392	688	0.858	24.1
273	8	52.3	66.6	34.1	5852	9.37	429	562	11703	858	0.858	19.1
273	10	64.9	82.6	27.3	7154	9.31	524	692	14308	1048	0.858	15.4
273	12	77.2	98.4	22.8	8396	9.24	615	818	16792	1230	0.858	12.9
273	12.5	80.3	102	21.8	8697	9.22	637	849	17395	1274	0.858	12.5
273	16	101	129	17.1	10707	9.1	784	1058	21414	1568	0.858	9.86
273	20	125	159	13.7	12798	8.97	938	1283	25597	1876	0.858	8.01
273	25	153	195	10.9	15127	8.81	1108	1543	30254	2216	0.858	6.54
323.9	5	39.3	50.1	64.8	6369	11.3	393	509	12739	786	1.02	25.4
323.9	6	47	59.9	54	7572	11.2	468	606	15145	936	1.02	21.3
323.9	6.3	49.3	62.9	51.4	7929	11.2	490	636	15858	980	1.02	20.3
323.9	8	62.3	79.4	40.5	9910	11.2	612	799	19820	1224	1.02	16
323.9	10	77.4	98.6	32.4	12158	11.1	751	986	24317	1502	1.02	12.9
323.9	12	92.3	118	27	14320	11	884	1168	28639	1768	1.02	10.8
323.9	12.5	96	122	25.9	14847	11	917	1213	29693	1834	1.02	10.4
323.9	16	121	155	20.2	18390	10.9	1136	1518	36780	2272	1.02	8.23
323.9	20	150	191	16.2	22139	10.8	1367	1850	44278	2734	1.02	6.67
323.9	25	184	235	13	26400	10.6	1630	2239	52800	3260	1.02	5.43
355.6	6	51.7	65.9	59.3	10071	12.4	566	733	20141	1132	1.12	19.3
355.6	6.3	54.3	69.1	56.4	10547	12.4	593	769	21094	1186	1.12	18.4
355.6	8	68.6	87.4	44.5	13201	12.3	742	967	26403	1484	1.12	14.6
355.6	10	85.2	109	35.6	16223	12.2	912	1195	32447	1824	1.12	11.7
355.6	12	102	130	29.6	19139	12.2	1076	1417	38279	2152	1.12	9.83
355.6	12.5	106	135	28.4	19852	12.1	1117	1472	39704	2234	1.12	9.45
355.6	16	134	171	22.2	24663	12	1387	1847	49326	2774	1.12	7.46



Hot finished Circular Hollow Sections to EN 10210-2												
Designation		Mass	Area	Ratio for	Second	Radius	Elastic	Plastic	Torsional		Section	Nominal
Outside	Thickness	per	of	Local	Moment	of	Modulus	Modulus	Constants		Surface	Length
Diameter		metre	Section	Buckling	of Area	Gyration			Inertia	Modulus	Area	Per
D	T	M	A	D/t	I	r	Z	S	J	C	A _s	Tonne
mm	mm	kg/m	cm ²		cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m
355.6	20	166	211	17.8	29792	11.9	1676	2255	59583	3352	1.12	6.04
355.6	25	204	260	14.2	35677	11.7	2007	2738	71353	4014	1.12	4.91
406.4	6	59.2	75.5	67.7	15128	14.2	745	962	30257	1490	1.28	16.9
406.4	6.3	62.2	79.2	64.5	15849	14.1	780	1009	31699	1560	1.28	16.1
406.4	8	78.6	100	50.8	19874	14.1	978	1270	39748	1956	1.28	12.7
406.4	10	97.8	125	40.6	24476	14	1205	1572	48952	2410	1.28	10.2
406.4	12	117	149	33.9	28937	14	1424	1867	57874	2848	1.28	8.57
406.4	12.5	121	155	32.5	30031	13.9	1478	1940	60061	2956	1.28	8.24
406.4	16	154	196	25.4	37449	13.8	1843	2440	74898	3686	1.28	6.49
406.4	20	191	243	20.3	45432	13.7	2236	2989	90864	4472	1.28	5.25
406.4	25	235	300	16.3	54702	13.5	2692	3642	109404	5384	1.28	4.25
406.4	30	278	355	13.5	63224	13.3	3111	4259	126447	6222	1.28	3.59
406.4	32	295	376	12.7	66432	13.3	3269	4497	132864	6538	1.28	3.38
406.4	40	361	460	10.2	78186	13	3848	5391	156373	7696	1.28	2.77
457	6	66.7	85	76.2	21618	15.9	946	1220	43236	1892	1.44	15
457	6.3	70	89.2	72.5	22654	15.9	991	1280	45308	1982	1.44	14.3
457	8	88.6	113	57.1	28446	15.9	1245	1613	56893	2490	1.44	11.3
457	10	110	140	45.7	35091	15.8	1536	1998	70183	3072	1.44	9.07
457	12	132	168	38.1	41556	15.7	1819	2377	83113	3638	1.44	7.59
457	12.5	137	175	36.6	43145	15.7	1888	2470	86290	3776	1.44	7.3
457	16	174	222	28.6	53959	15.6	2361	3113	107919	4722	1.44	5.75
457	20	216	275	22.9	65681	15.5	2874	3822	131363	5748	1.44	4.64
457	25	266	339	18.3	79415	15.3	3475	4671	158830	6950	1.44	3.75
457	30	316	402	15.2	92173	15.1	4034	5479	184346	8068	1.44	3.17
457	32	335	427	14.3	97013	15.1	4246	5791	194027	8492	1.44	2.98
457	40	411	524	11.4	114949	14.8	5031	6977	229898	10062	1.44	2.43
508	6	74.3	94.6	84.7	29812	17.7	1174	1512	59623	2348	1.6	13.5
508	6.3	77.9	99.3	80.6	31246	17.7	1230	1586	62493	2460	1.6	12.8
508	8	98.6	126	63.5	39280	17.7	1546	2000	78560	3092	1.6	10.1
508	10	123	156	50.8	48520	17.6	1910	2480	97040	3820	1.6	8.14
508	12	147	187	42.3	57536	17.5	2265	2953	115072	4530	1.6	6.81
508	12.5	153	195	40.6	59755	17.5	2353	3070	119511	4706	1.6	6.55
508	16	194	247	31.8	74909	17.4	2949	3874	149818	5898	1.6	5.15
508	20	241	307	25.4	91428	17.3	3600	4766	182856	7200	1.6	4.15
508	25	298	379	20.3	110918	17.1	4367	5837	221837	8734	1.6	3.36
508	30	354	451	16.9	129173	16.9	5086	6864	258346	10172	1.6	2.83
508	32	376	479	15.9	136141	16.9	5360	7261	272282	10720	1.6	2.66
508	40	462	588	12.7	162188	16.6	6385	8782	324376	12770	1.6	2.17
508	50	565	719	10.2	190885	16.3	7515	10530	381770	15030	1.6	1.77
559	20	266	339	28	123155	19.1	4406	5813	246311	8812	1.76	3.76
559	25	329	419	22.4	149822	18.9	5360	7134	299643	10720	1.76	3.04
559	32	416	530	17.5	184604	18.7	6605	8898	369207	13210	1.76	2.4
559	40	512	652	14	220899	18.4	7903	10796	441798	15806	1.76	1.95
559	50	628	800	11.2	261429	18.1	9353	12996	522858	18706	1.76	1.59
610	6	89.4	114	102	51924	21.4	1702	2189	103847	3404	1.92	11.2
610	6.3	93.8	119	96.8	54439	21.3	1785	2296	108878	3570	1.92	10.7
610	8	119	151	76.3	68551	21.3	2248	2899	137103	4496	1.92	8.42
610	10	148	188	61	84847	21.2	2782	3600	169693	5564	1.92	6.76



Hot finished Circular Hollow Sections to EN 10210-2												
Designation		Mass	Area	Ratio for	Second	Radius	Elastic	Plastic	Torsional		Section	Nominal
Outside	Thickness	per	of	Local	Moment	of	Modulus	Modulus	Constants		Surface	Length
Diameter		metre	Section	Buckling	of Area	Gyration			Inertia	Modulus	Area	Per
D	T	M	A	D/t	I	r	Z	S	J	C	A _s	Tonne
mm	mm	kg/m	cm ²		cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m
610	12	177	225	50.8	100814	21.1	3305	4292	201627	6610	1.92	5.65
610	12.5	184	235	48.8	104755	21.1	3435	4463	209509	6870	1.92	5.43
610	16	234	299	38.1	131781	21	4321	5647	263563	8642	1.92	4.27
610	20	291	371	30.5	161490	20.9	5295	6965	322979	10590	1.92	3.44
610	25	361	459	24.4	196906	20.7	6456	8561	393813	12912	1.92	2.77
610	30	429	547	20.3	230476	20.5	7557	10101	460952	15114	1.92	2.33
610	32	456	581	19.1	243401	20.5	7980	10702	486802	15960	1.92	2.19
610	40	562	716	15.3	292333	20.2	9585	13017	584666	19170	1.92	1.78
610	50	691	880	12.2	347570	19.9	11396	15722	695140	22792	1.92	1.45
660	20	316	402	33	206088	22.6	6245	8195	412177	12490	2.07	3.17
660	25	392	499	26.4	251764	22.5	7629	10086	503528	15258	2.07	2.55
660	32	496	631	20.6	312043	22.2	9456	12631	624087	18912	2.07	2.02
660	40	612	779	16.5	375923	22	11392	15397	751846	22784	2.07	1.64
660	50	752	958	13.2	448670	21.6	13596	18647	897341	27192	2.07	1.33
711	6	104	133	119	82568	24.9	2323	2982	165135	4646	2.23	9.59
711	6.3	109	139	113	86586	24.9	2436	3129	173172	4872	2.23	9.13
711	8	139	177	88.9	109162	24.9	3071	3954	218324	6142	2.23	7.21
711	10	173	220	71.1	135301	24.8	3806	4914	270603	7612	2.23	5.78
711	12	207	264	59.3	160991	24.7	4529	5864	321981	9058	2.23	4.83
711	12.5	215	274	56.9	167343	24.7	4707	6099	334686	9414	2.23	4.64
711	16	274	349	44.4	211040	24.6	5936	7730	422080	11872	2.23	3.65
711	20	341	434	35.6	259351	24.4	7295	9552	518702	14590	2.23	2.93
711	25	423	539	28.4	317357	24.3	8927	11770	634715	17854	2.23	2.36
711	30	504	642	23.7	372790	24.1	10486	13922	745580	20972	2.23	1.98
711	40	662	843	17.8	476242	23.8	13396	18031	952485	26792	2.23	1.51
711	50	815	1038	14.2	570312	23.4	16043	21888	1140623	32086	2.23	1.23
711	60	963	1227	11.9	655583	23.1	18441	25500	1311166	36882	2.23	1.04
762	6	112	143	127	101813	26.7	2672	3429	203626	5344	2.39	8.94
762	6.3	117	150	121	106777	26.7	2803	3598	213555	5606	2.39	8.52
762	8	149	190	95.3	134683	26.7	3535	4548	269366	7070	2.39	6.72
762	10	185	236	76.2	167028	26.6	4384	5655	334057	8768	2.39	5.39
762	12	222	283	63.5	198855	26.5	5219	6751	397710	10438	2.39	4.51
762	12.5	231	294	61	206731	26.5	5426	7023	413462	10852	2.39	4.33
762	16	294	375	47.6	260973	26.4	6850	8906	521947	13700	2.39	3.4
762	20	366	466	38.1	321083	26.2	8427	11014	642166	16854	2.39	2.73
762	25	454	579	30.5	393461	26.1	10327	13584	786922	20654	2.39	2.2
762	30	542	690	25.4	462853	25.9	12148	16084	925706	24296	2.39	1.85
762	40	712	907	19.1	593011	25.6	15565	20873	1186021	31130	2.39	1.4
762	50	878	1118	15.2	712207	25.2	18693	25389	1424414	37386	2.39	1.14
813	8	159	202	102	163901	28.5	4032	5184	327801	8064	2.55	6.3
813	10	198	252	81.3	203364	28.4	5003	6448	406728	10006	2.55	5.05
813	12	237	302	67.8	242235	28.3	5959	7700	484469	11918	2.55	4.22
813	12.5	247	314	65	251860	28.3	6196	8011	503721	12392	2.55	4.05
813	16	314	401	50.8	318222	28.2	7828	10165	636443	15656	2.55	3.18
813	20	391	498	40.7	391909	28	9641	12580	783819	19282	2.55	2.56
813	25	486	619	32.5	480856	27.9	11829	15529	961713	23658	2.55	2.06
813	30	579	738	27.1	566374	27.7	13933	18402	1132748	27866	2.55	1.73
914	8	179	228	114	233651	32	5113	6567	467303	10226	2.87	5.59



Hot finished Circular Hollow Sections to EN 10210-2												
Designation		Mass	Area	Ratio for	Second	Radius	Elastic	Plastic	Torsional		Section	Nominal
Outside	Thickness	per	of	Local	Moment	of	Modulus	Modulus	Constants		Surface	Length
Diameter		metre	Section	Buckling	of Area	Gyration			Inertia	Modulus	Area	Per
D	T	M	A	D/t	I	r	Z	S	J	C	A _s	Tonne
mm	mm	kg/m	cm ²		cm ⁴	cm	cm ³	cm ³	cm ⁴	cm ³	m ² /m	m
914	10	223	284	91.4	290147	32	6349	8172	580294	12698	2.87	4.49
914	12	267	340	76.2	345890	31.9	7569	9764	691779	15138	2.87	3.75
914	12.5	278	354	73.1	359708	31.9	7871	10159	719417	15742	2.87	3.6
914	16	354	451	57.1	455142	31.8	9959	12904	910284	19918	2.87	2.82
914	20	441	562	45.7	561461	31.6	12286	15987	1122922	24572	2.87	2.27
914	25	548	698	36.6	690317	31.4	15105	19763	1380634	30210	2.87	1.82
914	30	654	833	30.5	814775	31.3	17829	23453	1629550	35658	2.87	1.53
1016	8	199	253	127	321780	35.6	6334	8129	643560	12668	3.19	5.03
1016	10	248	316	102	399850	35.6	7871	10121	799699	15742	3.19	4.03
1016	12	297	378	84.7	476985	35.5	9389	12097	953969	18778	3.19	3.37
1016	12.5	309	394	81.3	496123	35.5	9766	12588	992246	19532	3.19	3.23
1016	16	395	503	63.5	628479	35.4	12372	16001	1256959	24744	3.19	2.53
1016	20	491	626	50.8	776324	35.2	15282	19843	1552648	30564	3.19	2.04
1016	25	611	778	40.6	956086	35	18821	24557	1912173	37642	3.19	1.64
1016	30	729	929	33.9	1130352	34.9	22251	29175	2260704	44502	3.19	1.37
1067	10	261	332	107	463792	37.4	8693	11173	927585	17386	3.35	3.84
1067	12	312	398	88.9	553420	37.3	10373	13357	1106840	20746	3.35	3.2
1067	12.5	325	414	85.4	575666	37.3	10790	13900	1151332	21580	3.35	3.08
1067	16	415	528	66.7	729606	37.2	13676	17675	1459213	27352	3.35	2.41
1067	20	516	658	53.4	901755	37	16903	21927	1803509	33806	3.35	1.94
1067	25	642	818	42.7	1111355	36.9	20831	27149	2222711	41662	3.35	1.56
1067	30	767	977	35.6	1314864	36.7	24646	32270	2629727	49292	3.35	1.3
1168	10	286	364	117	609843	40.9	10443	13410	1219686	20886	3.67	3.5
1168	12	342	436	97.3	728050	40.9	12467	16037	1456101	24934	3.67	2.92
1168	12.5	356	454	93.4	757409	40.9	12969	16690	1514818	25938	3.67	2.81
1168	16	455	579	73	960774	40.7	16452	21235	1921547	32904	3.67	2.2
1168	20	566	721	58.4	1188632	40.6	20353	26361	2377264	40706	3.67	1.77
1168	25	705	898	46.7	1466717	40.4	25115	32666	2933434	50230	3.67	1.42
1219	10	298	380	122	694014	42.7	11387	14617	1388029	22774	3.83	3.35
1219	12	357	455	102	828716	42.7	13597	17483	1657433	27194	3.83	2.8
1219	12.5	372	474	97.5	862181	42.7	14146	18196	1724362	28292	3.83	2.69
1219	16	475	605	76.2	1094091	42.5	17951	23157	2188183	35902	3.83	2.11
1219	20	591	753	61	1354155	42.4	22217	28755	2708309	44434	3.83	1.69
1219	25	736	938	48.8	1671873	42.2	27430	35646	3343746	54860	3.83	1.36