

# Hot Finished Rectangular Hollow Sections

BS EN 10210

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 contentant	Torsional modulus contentant	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling	Ratio for Local Buckling
Size	Thickness																
B × H	T	M	A	$I_{yy}$	$I_{zz}$	$i_{yy}$	$i_{zz}$	$W_{elzy}$	$W_{elzz}$	$W_{plzy}$	$W_{plzz}$	$L_t$	$C_t$	As	L	Flange	Web
mm	mm	Kg/m	cm <sup>2</sup>	cm <sup>4</sup>	cm <sup>4</sup>	cm	cm	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>4</sup>	cm <sup>3</sup>	m <sup>2</sup> /m	m	B/T	H/T
19 × 38	1.6	1.330	1.69	3.03	1.00	1.34	0.77	1.60	1.05	2.02	1.23	2.45	1.79	0.11	751.94	7.88	19.75
20 × 40	2.0	1.725	2.20	4.26	1.39	1.39	0.80	2.13	1.39	2.73	1.65	3.45	2.36	0.11	579.81	6.00	16.00
	2.5	2.106	2.68	5.02	1.61	1.37	0.77	2.51	1.61	3.27	1.96	4.07	2.73	0.11	474.81	4.00	12.00
	3.0	2.468	3.14	5.66	1.78	1.34	0.75	2.83	1.78	3.75	2.23	4.59	3.03	0.11	405.25	2.67	9.33
25 × 38	1.6	1.481	1.89	3.67	1.90	1.40	1.00	1.93	1.52	2.37	1.77	3.98	2.46	0.12	675.40	11.63	19.75
25 × 50	1.6	1.782	2.27	7.24	2.42	1.79	1.03	2.90	1.94	3.62	2.22	5.84	3.30	0.15	561.15	11.63	27.25
	2.0	2.196	2.80	8.73	2.89	1.77	1.02	3.49	2.31	4.41	2.68	7.05	3.93	0.14	455.43	8.50	21.00
	2.3	2.498	3.18	9.76	3.20	1.75	1.00	3.90	2.56	4.97	3.01	7.89	4.35	0.14	400.39	6.87	17.74
	2.5	2.695	3.43	10.41	3.39	1.74	0.99	4.16	2.71	5.33	3.22	8.42	4.61	0.14	371.08	6.00	16.00
	3.0	3.174	4.04	11.90	3.83	1.72	0.97	4.76	3.06	6.18	3.71	9.64	5.20	0.14	315.05	4.33	12.67
25 × 75	1.6	2.410	3.07	20.25	3.52	2.57	1.07	5.40	2.82	6.96	3.15	9.91	5.05	0.20	414.93	11.63	42.88
	1.9	2.839	3.62	23.56	4.05	2.55	1.06	6.28	3.24	8.14	3.67	11.48	5.81	0.20	352.21	9.16	35.47
	2.0	2.981	3.80	24.63	4.21	2.55	1.05	6.57	3.37	8.53	3.83	11.99	6.04	0.19	335.49	8.50	33.50
	2.3	3.400	4.33	27.74	4.69	2.53	1.04	7.40	3.75	9.66	4.32	13.44	6.73	0.19	294.09	6.87	28.61
	2.5	3.676	4.68	29.74	4.98	2.52	1.03	7.93	3.99	10.40	4.63	14.36	7.15	0.19	272.03	6.00	26.00
	3.0	4.352	5.54	34.44	5.65	2.49	1.01	9.19	4.52	12.17	5.36	16.49	8.12	0.19	229.80	4.33	21.00
	4.0	5.643	7.19	42.70	6.71	2.44	0.97	11.39	5.37	15.41	6.64	20.07	9.67	0.19	177.22	2.25	14.75
	4.5	6.259	7.97	46.27	7.12	2.41	0.95	12.34	5.70	16.88	7.19	21.53	10.27	0.19	159.78	1.56	12.67
30 × 50	2.0	2.353	3.00	9.88	4.41	1.82	1.21	3.95	2.94	4.89	3.41	9.74	4.84	0.15	425.04	11.00	21.00
	2.5	2.891	3.68	11.82	5.22	1.79	1.19	4.73	3.48	5.92	4.11	11.72	5.73	0.15	345.89	8.00	16.00
	3.0	3.410	4.34	13.56	5.94	1.77	1.17	5.43	3.96	6.88	4.76	13.52	6.51	0.15	293.29	6.00	12.67
	4.0	4.387	5.59	16.49	7.08	1.72	1.13	6.60	4.72	8.59	5.88	16.59	7.77	0.15	227.96	3.50	8.50
	5.0	5.284	6.73	18.71	7.89	1.67	1.08	7.49	5.26	10.03	6.80	18.97	8.67	0.15	189.24	2.00	6.00
30 × 60	1.6	2.159	2.75	12.82	4.32	2.16	1.25	4.27	2.88	5.30	3.26	10.33	4.90	0.18	463.21	14.75	33.50
	1.9	2.541	3.24	14.88	4.98	2.14	1.24	4.96	3.32	6.19	3.79	12.00	5.65	0.18	393.56	11.79	27.58
	2.3	3.039	3.87	17.47	5.79	2.12	1.22	5.82	3.86	7.34	4.47	14.11	6.57	0.17	329.03	9.04	22.09
	3.0	3.881	4.94	21.58	7.04	2.09	1.19	7.19	4.69	9.20	5.57	17.46	7.97	0.17	257.69	6.00	16.00
30 × 80	1.6	2.661	3.39	26.38	5.61	2.79	1.29	6.60	3.74	8.37	4.17	15.08	6.63	0.22	375.76	14.75	46.00
	1.9	3.138	4.00	30.76	6.49	2.77	1.27	7.69	4.32	9.81	4.86	17.54	7.65	0.22	318.72	11.79	38.11
	2.3	3.761	4.79	36.32	7.56	2.75	1.26	9.08	5.04	11.67	5.75	20.65	8.92	0.21	265.86	9.04	30.78
	3.0	4.823	6.14	45.33	9.23	2.72	1.23	11.33	6.16	14.75	7.19	25.62	10.90	0.21	207.36	6.00	22.67
30 × 110	2.0	4.237	5.40	73.36	9.12	3.69	1.30	13.34	6.08	17.48	6.77	27.30	11.12	0.27	236.03	11.00	51.00
	2.5	5.246	6.68	89.48	10.91	3.66	1.28	16.27	7.27	21.47	8.24	32.98	13.31	0.27	190.62	8.00	40.00
	3.0	6.236	7.94	104.74	12.53	3.63	1.26	19.04	8.35	25.31	9.62	38.21	15.28	0.27	160.37	6.00	32.67
	4.0	8.155	10.39	132.74	15.26	3.57	1.21	24.13	10.17	32.56	12.12	47.39	18.65	0.27	122.63	3.50	23.50
35 × 65	1.6	2.410	3.07	17.25	6.57	2.37	1.46	5.31	3.76	6.51	4.23	15.07	6.32	0.20	414.93	17.88	36.63
	1.9	2.839	3.62	20.08	7.61	2.36	1.45	6.18	4.35	7.63	4.94	17.57	7.31	0.20	352.21	14.42	30.21
	2.0	2.981	3.80	20.99	7.94	2.35	1.45	6.46	4.54	7.99	5.17	18.38	7.63	0.19	335.49	13.50	28.50
	2.3	3.400	4.33	23.65	8.89	2.34	1.43	7.28	5.08	9.05	5.85	20.74	8.54	0.19	294.09	11.22	24.26
	2.5	3.676	4.68	25.35	9.50	2.33	1.42	7.80	5.43	9.74	6.28	22.26	9.12	0.19	272.03	10.00	22.00
	3.0	4.352	5.54	29.38	10.91	2.30	1.40	9.04	6.23	11.41	7.32	25.86	10.46	0.19	229.80	7.67	17.67
	4.0	5.643	7.19	36.47	13.28	2.25	1.36	11.22	7.59	14.45	9.19	32.25	12.74	0.19	177.22	4.75	12.25
38 × 65	1.6	2.485	3.17	18.22	7.91	2.40	1.58	5.60	4.16	6.82	4.70	17.35	6.91	0.20	402.35	19.75	36.63
	1.9	2.929	3.73	21.21	9.17	2.38	1.57	6.53	4.83	7.99	5.49	20.25	8.01	0.20	341.45	16.00	30.21
	2.0	3.075	3.92	22.18	9.58	2.38	1.56	6.82	5.04	8.37	5.75	21.19	8.36	0.20	325.21	15.00	28.50
	2.3	3.509	4.47	25.01	10.75	2.37	1.55	7.69	5.66	9.49	6.51	23.95	9.37	0.20	285.01	12.52	24.26
	2.5	3.794	4.83	26.82	11.49	2.36	1.54	8.25	6.05	10.21	7.00	25.73	10.01	0.20	263.58	11.20	22.00
	3.0	4.493	5.72	31.11	13.23	2.33	1.52	9.57	6.96	11.96	8.17	29.96	11.52	0.20	222.57	8.67	17.67
	3.2	4.767	6.07	32.74	13.88	2.32	1.51	10.07	7.30	12.64	8.61	31.57	12.08	0.20	209.78	7.88	16.31
	4.0	5.831	7.43	38.71	16.20	2.28	1.48	11.91	8.53	15.19	10.29	37.54	14.10	0.20	171.49	5.50	12.25
38 × 75	1.6	2.737	3.49	25.85	8.97	2.72	1.60	6.89	4.72	8.48	5.28	21.11	8.03	0.22	365.42	19.75	42.88
	1.9	3.227	4.11	30.16	10.41	2.71	1.59	8.04	5.48	9.95	6.18	24.65	9.31	0.22	309.88	16.00	35.47
	2.0	3.389	4.32	31.56	10.87	2.70	1.59	8.42	5.72	10.42	6.47	25.81	9.72	0.22	295.08	15.00	33.50
	2.3	3.870	4.93	35.65	12.22	2.69	1.57	9.51	6.43	11.84	7.33	29.18	10.91	0.22	258.41	12.52	28.61
	2.5	4.186	5.33	38.28	13.07	2.68	1.57	10.21	6.88	12.75	7.88	31.35	11.67	0.22	238.87	11.20	26.00
	3.0	4.964	6.32	44.56	15.07	2.65	1.54	11.88	7.93	14.98	9.22	36.55	13.45	0.22	201.45	8.67	21.00
	3.2	5.269	6.71	46.95	15.82	2.64	1.54	12.52	8.33	15.84	9.73	38.53	14.12	0.22	189.78	7.88	19.44
	4.0	6.459	8.23	55.82	18.53	2.60	1.50	14.89	9.75	19.10	11.65	45.90	16.54	0.22	154.82	5.50	14.75
4.5	7.177	9.14	60.82	20.00	2.58	1.48	16.22	10.52	21.00	12.75	50.07	17.85	0.21	139.33	4.44	12.67	
40 × 60	2.0	2.981	3.80	18.91	10.04	2.23	1.63	6.30	5.02	7.64	5.77	20.65	8.12	0.19	335.49	16.00	26.00
	2.5	3.676	4.68	22.84	12.06	2.21	1.60	7.61	6.03	9.32	7.02	25.08	9.73	0.19	272.03	12.00	20.00
	3.0	4.352	5.54	26.46	13.89	2.18	1.58	8.82	6.95	10.91	8.19	29.23	11.20	0.19	229.80	9.33	16.00
	4.0	5.643	7.19	32.83	17.03	2.14	1.54	10.94	8.52	13.83	10.32	36.66	13.71	0.19	177.22	6.00	11.00
	5.0	6.854	8.73	38.09	19.53	2.09	1.50	12.70	9.77	16.39	12.16	42.98	15.71	0.19	145.89	4.00	8.00
40 × 80	1.6	2.912	3.71	31.30	10.66	2.90	1.69	7.82	5.33	9.62	5.94	25.18	9.08	0.24	343.35	21.00	46.00
	1.9	3.436	4.38	36.55	12.38	2.89	1.68	9.14	6.19	11.29	6.96	29.43	10.54	0.24	291.05	17.05	38.11
	2.3	4.123	5.25	43.27	14.55	2.87	1.66	10.82	7.27	13.45	8.26	34.87	12.38	0.23	242.57	13.39	30.78
	3.0	5.294	6.74	54.23	18.01	2.84	1.63	13.56	9.00	17.06	10.41	43.79	15.31	0.23	188.91	9.33	22.67
	4.0	6.899	8.79	68.20	22.24	2.79											

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 content	Torsional modulus content	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling	Ratio for Local Buckling
Size	Thickness																
$B \times H$	$T$	$M$	$A$	$I_{yy}$	$I_{zz}$	$i_{yy}$	$i_{zz}$	$W_{elzy}$	$W_{elzz}$	$W_{plyy}$	$W_{plzz}$	$L_t$	$C_t$	$A_s$	$L$	Flange	Web
mm	mm	Kg/m	cm <sup>2</sup>	cm <sup>4</sup>	cm <sup>4</sup>	cm	cm	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>4</sup>	cm <sup>3</sup>	m <sup>2</sup> /m	m	B/T	H/T
50 × 90	2.0	4.237	5.40	59.03	23.71	3.31	2.10	13.12	9.48	16.00	10.65	53.25	15.89	0.27	236.03	21.00	41.00
	2.5	5.246	6.68	72.04	28.76	3.28	2.07	16.01	11.50	19.66	13.04	65.15	19.25	0.27	190.62	16.00	32.00
	3.0	6.236	7.94	84.38	33.47	3.26	2.05	18.75	13.39	23.19	15.34	76.49	22.38	0.27	160.37	12.67	26.00
	4.0	8.155	10.39	107.09	41.95	3.21	2.01	23.80	16.78	29.85	19.63	97.52	28.02	0.27	122.63	8.50	18.50
	5.0	9.994	12.73	127.26	49.21	3.16	1.97	28.28	19.69	35.99	23.53	116.38	32.86	0.27	100.06	6.00	14.00
50 × 100	1.6	3.666	4.67	62.22	21.30	3.65	2.14	12.44	8.52	15.23	9.43	50.00	14.53	0.30	272.77	27.25	58.50
	1.9	4.331	5.52	72.92	24.86	3.64	2.12	14.58	9.94	17.91	11.07	58.64	16.95	0.30	230.91	22.32	48.63
	2.0	4.551	5.80	76.41	26.02	3.63	2.12	15.28	10.41	18.80	11.61	61.46	17.73	0.29	219.75	21.00	46.00
	2.3	5.206	6.63	86.71	29.40	3.62	2.11	17.34	11.76	21.41	13.19	69.80	20.03	0.29	192.09	17.74	39.48
	2.5	5.639	7.18	93.42	31.58	3.61	2.10	18.68	12.63	23.13	14.23	75.23	21.50	0.29	177.35	16.00	36.00
	3.0	6.707	8.54	109.60	36.79	3.58	2.08	21.92	14.72	27.31	16.75	88.37	25.03	0.29	149.11	12.67	29.33
	4.0	8.783	11.19	139.60	46.19	3.53	2.03	27.92	18.48	35.24	21.47	112.78	31.40	0.29	113.86	8.50	21.00
	4.5	9.791	12.47	153.44	50.40	3.51	2.01	30.69	20.16	39.00	23.68	124.06	34.26	0.29	102.13	7.11	18.22
	5.0	10.779	13.73	166.52	54.30	3.48	1.99	33.30	21.72	42.61	25.78	134.74	36.91	0.29	92.77	6.00	16.00
	6.0	12.696	16.17	190.46	61.20	3.43	1.95	38.09	24.48	49.41	29.68	154.30	41.62	0.28	78.76	4.33	12.67
	6.3	13.256	16.89	197.08	63.05	3.42	1.93	39.42	25.22	51.35	30.77	159.71	42.89	0.28	75.44	4.94	12.87
50 × 125	2.3	6.109	7.78	151.21	35.94	4.41	2.15	24.19	14.38	30.42	15.94	93.74	25.26	0.34	163.70	17.74	50.35
	2.5	6.620	8.43	163.11	38.64	4.40	2.14	26.10	15.45	32.89	17.20	101.06	27.15	0.34	151.06	16.00	46.00
	3.0	7.884	10.04	192.01	45.08	4.37	2.12	30.72	18.03	38.93	20.28	118.79	31.67	0.34	126.84	12.67	37.67
	4.0	10.353	13.19	246.23	56.79	4.32	2.08	39.40	22.72	50.48	26.07	151.85	39.88	0.34	96.59	8.50	27.25
	4.5	11.557	14.72	271.59	62.08	4.29	2.05	43.45	24.83	55.99	28.80	167.18	43.59	0.34	86.53	7.11	23.78
	5.0	12.742	16.23	295.79	67.01	4.27	2.03	47.33	26.80	61.34	31.40	181.74	47.06	0.34	78.48	6.00	21.00
	6.0	15.051	19.17	340.83	75.81	4.22	1.99	54.53	30.32	71.51	36.28	208.53	53.28	0.33	66.44	4.33	16.83
	6.3	15.729	20.04	353.48	78.19	4.20	1.98	56.56	31.28	74.42	37.65	215.97	54.97	0.33	63.58	4.94	16.84
50 × 150	2.3	7.011	8.93	240.02	42.49	5.18	2.18	32.00	17.00	40.87	18.68	118.26	30.50	0.39	142.63	17.74	61.22
	3.0	9.062	11.54	305.80	53.38	5.15	2.15	40.77	21.35	52.42	23.80	149.94	38.30	0.39	110.36	12.67	46.00
	4.0	11.923	15.19	394.08	67.40	5.09	2.11	52.54	26.96	68.21	30.67	191.81	48.36	0.39	83.87	8.50	33.50
	4.5	13.324	16.97	435.75	73.76	5.07	2.08	58.10	29.51	75.80	33.91	211.27	52.93	0.39	75.05	7.11	29.33
	5.0	14.704	18.73	475.80	79.71	5.04	2.06	63.44	31.89	83.19	37.03	229.77	57.22	0.39	68.01	6.00	26.00
	6.0	17.406	22.17	551.12	90.42	4.99	2.02	73.48	36.17	97.35	42.88	263.92	64.95	0.38	57.45	4.33	21.00
	6.3	18.201	23.19	572.49	93.33	4.97	2.01	76.33	37.33	101.44	44.54	273.43	67.07	0.38	54.94	4.94	20.81
60 × 80	2.0	4.237	5.40	50.43	32.37	3.06	2.45	12.61	10.79	14.96	12.28	61.09	17.08	0.27	236.03	26.00	36.00
	2.5	5.246	6.68	61.52	39.38	3.03	2.43	15.38	13.13	18.38	15.07	74.90	20.74	0.27	190.62	20.00	28.00
	3.0	6.236	7.94	72.02	45.97	3.01	2.41	18.01	15.32	21.68	17.75	88.13	24.17	0.27	160.37	16.00	22.67
	4.0	8.155	10.39	91.33	57.96	2.97	2.36	22.83	19.32	27.90	22.79	112.87	30.38	0.27	122.63	11.00	16.00
	5.0	9.994	12.73	108.45	68.43	2.92	2.32	27.11	22.81	33.63	27.39	135.35	35.78	0.27	100.06	8.00	12.00
60 × 100	2.5	6.031	7.68	105.30	47.65	3.70	2.49	21.06	15.88	25.56	17.95	103.02	26.25	0.31	165.81	20.00	36.00
	3.0	7.178	9.14	123.72	55.73	3.68	2.47	24.74	18.58	30.22	21.17	121.39	30.66	0.31	139.32	16.00	29.33
	4.0	9.411	11.99	158.04	70.52	3.63	2.43	31.61	23.51	39.08	27.27	155.92	38.74	0.31	106.26	11.00	21.00
	5.0	11.564	14.73	189.10	83.59	3.58	2.38	37.82	27.86	47.36	32.89	187.55	45.86	0.31	86.47	8.00	16.00
	6.0	13.638	17.37	217.01	95.02	3.53	2.34	43.40	31.67	55.05	38.07	216.32	52.10	0.30	73.32	6.00	12.67
	6.3	14.245	18.15	224.78	98.15	3.52	2.33	44.96	32.72	57.25	39.53	224.39	53.81	0.30	70.20	6.52	12.87
60 × 120	2.5	6.816	8.68	164.45	55.92	4.35	2.54	27.41	18.64	33.75	20.82	132.30	31.76	0.35	146.71	20.00	44.00
	3.0	8.120	10.34	193.71	65.48	4.33	2.52	32.28	21.83	39.96	24.59	156.00	37.16	0.35	123.16	16.00	36.00
	4.0	10.667	13.59	248.73	83.09	4.28	2.47	41.46	27.70	51.87	31.75	200.68	47.10	0.35	93.75	11.00	26.00
	4.5	11.911	15.17	274.53	91.16	4.25	2.45	45.76	30.39	57.57	35.13	221.68	51.66	0.35	83.96	9.33	22.67
	5.0	13.134	16.73	299.21	98.76	4.23	2.43	49.87	32.92	63.09	38.39	241.80	55.95	0.35	76.14	8.00	20.00
	6.0	15.522	19.77	345.29	112.59	4.18	2.39	57.55	37.53	73.63	44.55	279.40	63.78	0.34	64.42	6.00	16.00
	6.3	16.223	20.67	358.27	116.40	4.16	2.37	59.71	38.80	76.66	46.30	290.01	65.94	0.34	61.64	6.52	16.05
	75 × 100	2.3	6.109	7.78	114.16	73.34	3.83	3.07	22.83	19.56	27.03	22.20	138.05	30.99	0.34	163.70	28.61
3.0		7.884	10.04	144.90	92.80	3.80	3.04	28.98	24.75	34.59	28.37	176.22	39.11	0.34	126.84	21.00	29.33
3.2		8.384	10.68	153.35	98.12	3.79	3.00	30.67	26.17	36.69	30.08	186.80	41.33	0.34	119.27	19.44	27.25
4.0		10.353	13.19	185.71	118.39	3.75	3.00	37.14	31.57	44.84	36.71	227.68	49.76	0.34	96.59	14.75	21.00
4.5		11.557	14.72	204.78	130.25	3.73	2.97	40.96	34.73	49.74	40.67	252.07	54.67	0.34	86.53	12.67	18.22
5.0		12.742	16.23	222.97	141.50	3.71	2.95	44.59	37.73	54.48	44.51	275.57	59.33	0.34	78.48	11.00	16.00
6.0		15.051	19.17	256.82	162.23	3.66	2.91	51.36	43.26	63.51	51.77	319.91	67.89	0.33	66.44	8.50	12.67
6.3		15.729	20.04	266.33	168.00	3.65	2.90	53.27	44.80	66.11	53.85	332.53	70.28	0.33	63.58	8.90	12.87
75 × 125	2.3	7.011	8.93	194.50	88.54	4.67	3.15	31.12	23.61	37.48	26.38	189.57	39.09	0.39	142.63	28.61	50.35
	3.0	9.062	11.54	247.84	112.25	4.63	3.12	39.65	29.93	48.08	33.77	242.34	49.48	0.39	110.36	21.00	37.67
	4.0	11.923	15.19	319.46	143.63	4.59	3.08	51.11	38.30	62.58	43.81	313.78	63.19	0.39	83.87	14.75	27.25
	4.5	13.324	16.97	353.30	158.25	4.56	3.05	56.53	42.20	69.55	48.61	347.79	69.58	0.39	75.05	12.67	23.78
	5.0	14.704	18.73	385.85	172.18	4.54	3.03	61.74	45.91	76.34	53.26	380.65	75.66	0.39	68.01	11.00	21.00
	6.0	17.406	22.17	447.13	198.03	4.49	2.99	71.54	52.81	89.36	62.12	442.99	86.93	0.38	57.45	8.50	16.83
	9.0	25.034	31.89	601.80	260.52	4.34	2.86	96.29	69.47	124.09	85.32	603.31	114.28	0.38	39.95	5.33	10.89
75 × 150	2.3	7.914	10.08	302.74	103.74	5.48	3.21	40.37	27.67	49.36	30.56	243.22	47.19	0.44	126.36	28.61	61.22
	3.0	10.239	13.04	386.85	131.70	5.45	3.18	51.58	35.12	63.44	39.17	311.16	59.85	0.44	97.66	21.00	46.00
	4.0	13.493	17.19	500.69	168.86	5.40	3.13	66.76	45.03	82.81	50.91	403.37	76.64	0.44	74.11	14.75	33.50

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 contant	Torsional modulus contant	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling	Ratio for Local Buckling
Size	Thickness																
$B \times H$	$T$	$M$	$A$	$I_{yy}$	$I_{zz}$	$i_{yy}$	$i_{zz}$	$W_{elzy}$	$W_{elzz}$	$W_{plyy}$	$W_{plzz}$	$L_t$	$C_t$	$A_s$	$L$	Flange	Web
mm	mm	Kg/m	cm <sup>2</sup>	cm <sup>4</sup>	cm <sup>4</sup>	cm	cm	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>4</sup>	cm <sup>3</sup>	m <sup>2</sup> /m	m	B/T	H/T
80 × 140	4.0	13.179	16.79	440.60	183.83	5.12	3.31	62.94	45.96	77.14	52.22	410.65	76.53	0.43	75.88	16.00	31.00
	5.0	16.274	20.73	533.96	221.11	5.08	3.27	76.28	55.28	94.32	63.63	499.36	91.94	0.43	61.45	12.00	24.00
	6.0	19.290	24.57	620.92	255.18	5.03	3.22	88.70	63.80	110.68	74.40	582.61	106.01	0.42	51.84	9.33	19.33
	6.3	20.180	25.71	645.79	264.80	5.01	3.21	92.26	66.20	115.43	77.51	606.52	109.98	0.42	49.55	9.70	19.22
	8.0	25.083	31.95	776.32	314.20	4.93	3.14	110.90	78.55	140.97	94.07	732.93	130.43	0.42	39.87	7.00	14.50
80 × 160	3.0	10.946	13.94	472.09	161.00	5.82	3.40	59.01	40.25	72.47	44.78	379.61	68.61	0.47	91.36	22.67	49.33
	3.2	11.650	14.84	500.79	170.49	5.81	3.39	62.60	42.62	77.00	47.54	402.81	72.63	0.47	85.84	21.00	46.00
	4.0	14.435	18.39	612.21	206.96	5.77	3.35	76.53	51.74	94.73	58.30	493.03	88.08	0.47	69.28	16.00	36.00
	4.5	16.150	20.57	679.13	228.56	5.75	3.33	84.89	57.14	105.51	64.80	547.32	97.23	0.47	61.92	13.78	31.56
	5.0	17.844	22.73	744.00	249.28	5.72	3.31	93.00	62.32	116.05	71.13	600.01	106.01	0.47	56.04	12.00	28.00
	6.0	21.174	26.97	867.66	288.11	5.67	3.27	108.46	72.03	136.45	83.28	700.62	122.45	0.46	47.23	9.33	22.67
	6.3	22.158	28.23	903.20	299.10	5.66	3.26	112.90	74.78	142.40	86.80	729.58	127.11	0.46	45.13	9.70	22.40
	8.0	27.595	35.15	1091.28	355.84	5.57	3.18	136.41	88.96	174.52	105.59	883.05	151.19	0.46	36.24	7.00	17.00
	9.0	30.686	39.09	1191.60	385.01	5.52	3.14	148.95	96.25	192.21	115.77	965.00	163.62	0.46	32.59	5.89	14.78
100 × 150	3.0	11.417	14.54	467.89	250.78	5.67	4.15	62.39	50.16	74.47	56.41	506.22	81.43	0.49	87.59	29.33	46.00
	4.0	15.063	19.19	607.29	324.03	5.63	4.11	80.97	64.81	97.41	73.64	660.13	104.99	0.49	66.39	21.00	33.50
	4.5	16.856	21.47	673.99	358.79	5.60	4.09	89.87	71.76	108.54	81.97	734.34	116.16	0.49	59.33	18.22	29.33
	5.0	18.629	23.73	738.71	392.35	5.58	4.07	98.50	78.47	119.44	90.11	806.73	126.91	0.49	53.68	16.00	26.00
	6.0	22.116	28.17	862.34	455.90	5.53	4.02	114.98	91.18	140.55	105.81	946.07	147.26	0.48	45.22	12.67	21.00
	6.3	23.147	29.49	897.93	474.06	5.52	4.01	119.72	94.81	146.70	110.38	986.47	153.06	0.48	43.20	12.87	20.81
	8.0	28.851	36.75	1086.89	569.30	5.44	3.94	144.92	113.86	180.07	134.98	1203.23	183.49	0.48	34.66	9.50	15.75
	9.0	32.099	40.89	1188.18	619.45	5.39	3.89	158.42	123.89	198.50	148.47	1321.15	199.51	0.48	31.15	8.11	13.67
	100 × 180	4.0	16.947	21.59	944.51	379.35	6.61	4.19	104.95	75.87	128.00	85.16	852.07	127.11	0.55	59.01	21.00
5.0		20.984	26.73	1152.67	460.10	6.57	4.15	128.07	92.02	157.29	104.36	1042.42	153.99	0.55	47.65	16.00	32.00
6.0		24.942	31.77	1350.07	535.53	6.52	4.11	150.01	107.11	185.51	122.73	1223.86	179.06	0.54	40.09	12.67	26.00
6.3		26.114	33.27	1407.22	557.15	6.50	4.09	156.36	111.43	193.77	128.09	1276.57	186.25	0.54	38.29	12.87	25.57
8.0		32.619	41.55	1713.39	671.13	6.42	4.02	190.38	134.23	238.80	157.06	1560.32	224.13	0.54	30.66	9.50	19.50
10.0		39.978	50.93	2036.11	787.42	6.32	3.93	226.23	157.48	287.94	188.23	1862.04	262.85	0.53	25.01	7.00	15.00
12.0		47.017	59.89	2319.87	885.70	6.22	3.85	257.76	177.14	333.01	216.31	2129.58	295.72	0.53	21.27	5.83	12.50
12.5		48.728	62.07	2384.91	907.60	6.20	3.82	264.99	181.52	343.65	222.86	2191.20	303.07	0.53	20.52	5.50	11.90
100 × 200		4.0	18.203	23.19	1222.63	416.24	7.26	4.24	122.26	83.25	150.39	92.84	983.43	141.86	0.59	54.94	21.00
	4.5	20.389	25.97	1360.27	461.47	7.24	4.22	136.03	92.29	167.85	103.46	1094.82	157.20	0.59	49.05	18.22	40.44
	5.0	22.554	28.73	1494.64	505.27	7.21	4.19	149.46	101.05	185.02	113.86	1203.68	172.04	0.59	44.34	16.00	36.00
	6.0	26.826	34.17	1753.66	588.62	7.16	4.15	175.37	117.72	218.48	134.01	1413.87	200.28	0.58	37.28	12.67	29.33
	6.3	28.092	35.79	1828.86	612.55	7.15	4.14	182.89	122.51	228.30	139.89	1474.98	208.38	0.58	35.60	12.87	28.75
	8.0	35.131	44.75	2233.60	739.01	7.06	4.06	223.36	147.80	281.95	171.78	1804.46	251.23	0.58	28.46	9.50	22.00
	9.0	39.164	49.89	2454.98	806.38	7.01	4.02	245.50	161.28	311.97	189.42	1985.02	274.09	0.58	25.53	8.11	19.22
	10.0	43.118	54.93	2664.25	868.76	6.96	3.98	266.43	173.75	340.87	206.23	2155.89	295.30	0.57	23.19	7.00	17.00
	12.0	50.785	64.69	3047.39	979.20	6.86	3.89	304.74	195.84	395.31	237.43	2468.86	332.99	0.57	19.69	5.83	14.17
12.5	52.653	67.07	3135.96	1003.95	6.84	3.87	313.60	200.79	408.23	244.74	2541.18	341.48	0.57	18.99	5.50	13.50	
100 × 300	6.0	36.246	46.17	4892.82	854.06	10.29	4.30	326.19	170.81	419.35	190.41	2399.07	306.39	0.78	27.59	12.67	46.00
	6.3	37.983	48.39	5111.48	889.53	10.28	4.29	340.77	177.91	438.73	198.92	2503.59	319.10	0.78	26.33	12.87	44.62
	8.0	47.691	60.75	6305.27	1078.42	10.19	4.21	420.35	215.68	545.72	245.38	3068.92	386.86	0.78	20.97	9.50	34.50
	10.0	58.818	74.93	7612.76	1275.42	10.08	4.13	507.52	255.08	665.50	296.23	3676.29	457.72	0.77	17.00	7.00	27.00
	12.0	69.625	88.69	8817.85	1446.72	9.97	4.04	587.86	289.34	778.78	343.03	4222.66	519.63	0.77	14.36	5.83	22.50
	12.5	72.278	92.07	9103.42	1485.72	9.94	4.02	606.89	297.14	806.10	354.11	4349.89	533.78	0.77	13.84	5.50	21.50
	16.0	90.285	115.01	10930.95	1718.78	9.75	3.87	728.73	343.76	986.14	424.81	5138.39	618.94	0.76	11.08	3.75	16.25
120 × 200	4.0	19.459	24.79	1376.31	625.65	7.45	5.02	137.63	104.27	166.07	116.83	1342.72	172.54	0.63	51.39	26.00	46.00
	5.0	24.124	30.73	1684.81	762.38	7.40	4.98	168.48	127.06	204.52	143.59	1648.37	209.98	0.63	41.45	20.00	36.00
	6.0	28.710	36.57	1979.55	891.62	7.36	4.94	197.95	148.60	241.76	169.39	1942.19	245.29	0.62	34.83	16.00	29.33
	6.3	30.071	38.31	2065.32	928.96	7.34	4.92	206.53	154.83	252.70	176.94	2028.04	255.49	0.62	33.26	16.05	28.75
	8.0	37.643	47.95	2528.68	1128.40	7.26	4.85	252.87	188.07	312.67	218.14	2494.65	309.89	0.62	26.57	12.00	22.00
	10.0	46.258	58.93	3025.58	1337.48	7.17	4.76	302.56	222.91	378.87	263.16	3000.73	366.90	0.61	21.62	9.00	17.00
	12.0	54.553	69.49	3472.10	1520.37	7.07	4.68	347.21	253.39	440.43	304.53	3461.05	416.83	0.61	18.33	7.50	14.17
	12.5	56.578	72.07	3576.07	1562.17	7.04	4.66	357.61	260.36	455.10	314.31	3569.05	428.27	0.61	17.67	7.10	13.50
	150 × 200	4.0	21.343	27.19	1606.84	1033.72	7.69	6.17	160.68	137.83	189.59	155.81	1938.38	218.60	0.69	46.85	33.50
4.5		23.921	30.47	1790.33	1150.47	7.66	6.14	179.03	153.40	211.84	174.02	2164.12	243.07	0.69	41.80	29.33	40.44
5.0		26.479	33.73	1970.06	1264.55	7.64	6.12	197.01	168.61	233.77	191.94	2386.22	266.93	0.69	37.77	26.00	36.00
6.0		31.536	40.17	2318.38	1484.78	7.60	6.08	231.84	197.97	276.68	226.95	2819.54	312.90	0.68	31.71	21.00	29.33
6.3		33.038	42.09	2420.01	1548.81	7.58	6.07	242.00	206.51	289.31	237.24	2946.72	326.24	0.68	30.27	20.81	28.75
8.0		41.411	52.75	2971.31	1894.30	7.50	5.99	297.13	252.57	358.75	293.67	3642.90	398.05	0.68	24.15	15.75	22.00
9.0		46.229	58.89	3276.41	2084.04	7.46	5.95	327.64	277.87	397.92	325.40	4033.10	437.38	0.68	21.63	13.67	19.22
10.0		50.968	64.93	3567.58	2264.04	7.41	5.91	356.76	301.87	435.87	356.05	4409.06	474.63	0.67	19.62	12.00	17.00
12.0		60.205	76.69	4109.15	2595.72	7.32	5.82	410.92	346.10	508.11	414.17	5118.58	543.15	0.67	16.61	10.00	14.17
12.5	62.465	79.57	4236.22	2672.89	7.30												

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 content	Torsional modulus content	Superficial Area per metre length	Nominal Length per tonne	Ratio for Local Buckling	Ratio for Local Buckling
Size	Thickness																
$B \times H$	$T$	$M$	$A$	$I_{yy}$	$I_{zz}$	$i_{yy}$	$i_{zz}$	$W_{elzy}$	$W_{elzz}$	$W_{plyy}$	$W_{plzz}$	$L_t$	$C_t$	$A_s$	$L$	Flange	Web
mm	mm	Kg/m	cm <sup>2</sup>	cm <sup>4</sup>	cm <sup>4</sup>	cm	cm	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>4</sup>	cm <sup>3</sup>	m <sup>2</sup> /m	m	B/T	H/T
200 × 300	4.5	34.519	43.97	5727.93	3080.49	11.41	8.37	381.86	308.05	453.19	343.80	6175.34	500.96	0.99	28.97	40.44	62.67
	5.0	38.254	48.73	6322.27	3396.31	11.39	8.35	421.48	339.63	501.18	380.02	6824.16	551.99	0.99	26.14	36.00	56.00
	6.0	45.666	58.17	7486.26	4012.54	11.34	8.31	499.08	401.25	595.75	451.28	8099.60	651.41	0.98	21.90	29.33	46.00
	6.3	47.874	60.99	7829.08	4193.44	11.33	8.29	521.94	419.34	623.76	472.36	8476.47	680.56	0.98	20.89	28.75	44.62
	8.0	60.251	76.75	9716.68	5184.43	11.25	8.22	647.78	518.44	779.32	589.15	10562.12	839.96	0.98	16.60	22.00	34.50
	9.0	67.424	85.89	10783.84	5740.70	11.21	8.18	718.92	574.07	868.33	655.77	11749.45	929.25	0.98	14.83	19.22	30.33
	10.0	74.518	94.93	11819.43	6277.58	11.16	8.13	787.96	627.76	955.50	720.87	12907.66	1015.31	0.97	13.42	17.00	27.00
	12.0	88.465	112.69	13797.37	7294.43	11.06	8.05	919.82	729.44	1124.38	846.51	15137.15	1178.05	0.97	11.30	14.17	22.50
	12.5	91.903	117.07	14272.69	7537.01	11.04	8.02	951.51	753.70	1165.47	876.98	15676.50	1216.83	0.97	10.88	13.50	21.50
	16.0	115.405	147.01	17390.25	9108.84	10.88	7.87	1159.35	910.88	1440.54	1079.87	19251.64	1467.93	0.96	8.67	10.00	16.25
200 × 400	4.5	41.584	52.97	11434.11	3940.60	14.69	8.62	571.71	394.06	695.55	431.77	9176.30	672.94	1.19	24.05	40.44	84.89
	5.0	46.104	58.73	12635.66	4347.14	14.67	8.60	631.78	434.71	769.83	477.52	10144.00	742.11	1.19	21.69	36.00	76.00
	6.0	55.086	70.17	14998.11	5141.98	14.62	8.56	749.91	514.20	916.62	567.68	12048.54	877.22	1.18	18.15	29.33	62.67
	6.3	57.765	73.59	15696.33	5375.73	14.60	8.55	784.82	537.57	960.19	594.39	12611.90	916.92	1.18	17.31	28.75	60.49
	8.0	72.811	92.75	19562.02	6659.84	14.52	8.47	978.10	665.98	1203.08	742.75	15734.90	1134.86	1.18	13.73	22.00	47.00
	9.0	81.554	103.89	21764.38	7383.56	14.47	8.43	1088.22	738.36	1342.78	827.67	17517.10	1257.57	1.18	12.26	19.22	41.44
	10.0	90.218	114.93	23914.29	8084.25	14.43	8.39	1195.71	808.43	1480.14	910.87	19258.89	1376.31	1.17	11.08	17.00	37.00
	12.0	107.305	136.69	28058.57	9417.95	14.33	8.30	1402.93	941.80	1747.86	1072.11	22621.99	1602.22	1.17	9.32	14.17	30.83
	12.5	111.528	142.07	29062.56	9737.53	14.30	8.28	1453.13	973.75	1813.34	1111.35	23437.79	1656.34	1.17	8.97	13.50	29.50
	16.0	140.525	179.01	35737.62	11824.15	14.13	8.13	1786.88	1182.42	2255.60	1374.27	28871.29	2009.86	1.16	7.12	10.00	22.50
250 × 350	6.0	55.086	70.17	12616.32	7538.26	13.41	10.36	720.93	603.06	851.88	677.42	14528.89	967.01	1.18	18.15	37.67	54.33
	6.3	57.765	73.59	13202.92	7885.11	13.39	10.35	754.45	630.81	892.37	709.46	15214.51	1011.18	1.18	17.31	36.68	52.56
	8.0	72.811	92.75	16449.35	9798.26	13.32	10.28	939.96	783.86	1118.00	887.83	19026.91	1254.38	1.18	13.73	28.25	40.75
	10.0	90.218	114.93	20101.90	11936.88	13.23	10.19	1148.68	954.95	1375.32	1090.68	23354.44	1525.38	1.17	11.08	22.00	32.00
	12.0	107.305	136.69	23577.38	13957.08	13.13	10.10	1347.28	1116.57	1623.92	1286.05	27512.62	1780.64	1.17	9.32	18.33	26.67
	12.5	111.528	142.07	24418.99	14443.97	13.11	10.08	1395.37	1155.52	1684.72	1333.72	28525.82	1842.06	1.17	8.97	17.50	25.50
	16.0	140.525	179.01	30010.76	17654.02	12.95	9.93	1714.90	1412.32	2095.27	1654.60	35325.18	2246.24	1.16	7.12	13.13	19.38
300 × 400	6.3	67.656	86.19	20579.24	13264.27	15.45	12.41	1028.96	884.28	1208.22	993.82	24739.51	1404.81	1.38	14.78	44.62	60.49
	8.0	85.371	108.75	25709.43	16539.51	15.38	12.33	1285.47	1102.63	1516.68	1246.52	31014.00	1748.80	1.38	11.71	34.50	47.00
	9.0	95.684	121.89	28645.24	18407.56	15.33	12.29	1432.26	1227.17	1694.68	1392.13	34625.93	1944.52	1.38	10.45	30.33	41.44
	10.0	105.918	134.93	31520.95	20232.76	15.28	12.25	1576.05	1348.85	1870.14	1535.50	38179.57	2135.45	1.37	9.44	27.00	37.00
	12.0	126.145	160.69	37094.09	23756.41	15.19	12.16	1854.70	1583.76	2213.46	1815.58	45112.66	2503.20	1.37	7.93	22.50	30.83
	12.5	131.153	167.07	38450.58	24611.23	15.17	12.14	1922.53	1640.75	2297.71	1884.22	46809.76	2592.25	1.37	7.62	21.50	29.50
	16.0	165.645	211.01	47540.93	30308.87	15.01	11.98	2377.05	2020.59	2870.00	2349.34	58286.43	3184.42	1.36	6.04	16.25	22.50