

DIMENSIONS AND PROPERTIES OF SQUARE SECTIONS (RHS) AS PER IS:4923-2017

Width (mm)	Depth (mm)	Thickness (mm)	Area (cm ²)	Weight (Kg/Mtr)	Moment of inertia (cm ⁴)		Radius of Gyration (cm)		Radius of Gyration (cm ³)		Radius of Gyration (cm ³)	
					I _x	I _y	R _x	R _y	Z _x	Z _y	S _x	S _y
50	25	2.00	2.74	2.15	8.38	2.81	1.75	1.01	3.35	2.25	4.26	2.62
50	25	2.60	3.46	2.71	10.16	3.36	1.71	0.99	4.06	2.69	5.26	3.21
50	25	3.20	4.13	3.24	11.63	3.80	1.68	0.96	4.65	3.04	6.14	3.73
50	25	4.00	4.95	3.88	13.13	4.23	1.63	0.92	5.25	3.38	7.13	4.29
60	40	2.60	4.76	3.73	22.76	12.09	2.19	1.59	7.59	6.05	9.36	7.07
60	40	2.90	5.25	4.12	24.74	13.11	2.17	1.58	8.25	6.56	10.25	7.73
60	40	3.60	6.35	4.98	28.90	15.23	2.13	1.55	9.63	7.62	12.16	9.15
60	40	4.50	7.67	6.02	33.30	17.43	2.08	1.51	11.10	8.72	14.32	10.75
66	33	2.60	4.70	3.69	25.15	8.43	2.31	1.34	7.62	5.11	9.68	5.94
66	33	2.90	5.19	4.07	27.33	9.12	2.29	1.33	8.28	5.53	10.59	6.49
66	33	3.60	6.28	4.93	31.87	10.52	2.25	1.29	9.66	6.37	12.56	7.66
66	33	4.50	7.58	5.95	36.64	11.93	2.20	1.25	11.10	7.23	14.77	8.94
80	40	2.60	5.80	4.55	46.58	15.73	2.84	1.65	11.64	7.87	14.63	9.01
80	40	2.90	6.41	5.03	50.87	17.11	2.82	1.63	12.72	8.56	16.07	9.88
80	40	3.20	7.01	5.50	54.94	18.41	2.80	1.62	13.74	9.21	17.46	10.72
80	40	4.00	8.55	6.71	64.79	21.49	2.75	1.59	16.20	10.74	20.91	12.77
96	48	3.20	8.54	6.71	98.61	33.28	3.40	1.97	20.54	13.87	25.85	15.91
96	48	4.00	10.47	8.22	117.54	39.32	3.35	1.94	24.49	16.30	31.21	19.14
96	48	4.80	12.31	9.66	134.35	44.55	3.30	1.90	27.99	18.56	36.13	22.08
100	50	3.20	8.93	7.01	112.29	37.95	3.55	2.06	22.46	15.18	28.20	17.37
100	50	3.60	9.95	7.81	123.50	41.56	3.52	2.04	24.70	16.63	31.20	19.19
100	50	4.50	12.17	9.55	146.59	48.87	3.47	2.00	29.32	19.55	37.55	23.00
100	50	5.40	14.28	11.21	166.80	55.09	3.42	1.96	33.36	22.04	43.34	26.43
120	60	3.20	10.85	8.51	199.87	67.94	4.29	2.50	33.31	22.65	41.50	25.63
120	60	3.60	12.11	9.50	220.73	74.76	4.27	2.48	36.79	24.92	46.06	28.40
120	60	4.50	14.87	11.67	264.49	88.87	4.22	2.44	44.08	29.62	55.82	34.30
122	61	3.60	12.32	9.67	232.61	78.83	4.34	2.35	38.13	25.84	47.71	29.42
122	61	4.50	15.14	11.88	278.94	93.78	4.29	2.49	45.72	30.75	57.85	35.56
122	61	5.40	17.85	14.01	320.83	107.03	4.24	2.45	52.60	35.09	67.29	41.22
145	82	4.80	20.28	15.92	555.16	228.50	5.23	3.36	76.57	55.73	94.93	63.93
145	82	5.40	22.60	17.74	610.85	250.59	5.20	3.33	84.26	61.12	105.07	70.66
172	92	4.80	23.83	18.70	917.13	346.91	6.20	3.82	106.64	75.41	132.08	85.61
172	92	5.40	26.59	20.88	1012.47	381.74	6.17	3.79	117.73	82.99	146.55	94.86
200	100	4.00	22.95	18.01	1199.64	410.76	7.23	4.23	119.96	82.15	148.03	91.70
200	100	5.00	28.36	22.26	1459.16	496.92	7.17	4.19	145.92	99.38	181.36	112.09
200	100	6.00	33.63	26.40	1703.17	576.89	7.12	4.14	170.32	115.38	213.25	131.49

TOLERANCES FOR SHS & RHS AS PER IS:4923

1	Outside Dimensions of the Sides	± 1% with a minimum of 0.5mm
2	Thickness	± 10%
3	Weight	Individual Length + 10%, -8% On lot of 10 tonnes ± 7.5%
4	Squareness of Corner	90° ± 2°
5	Radii of Corners- Outside	3t Max. Where t is the thickness of the section

MECHANICAL PROPERTIES

Grade	Tensile Strength (MPa)	Yield Stress (MPa)	%Elongation (MIN)	
			Upto 25.4mm	Upto 25.4mm
YSr 210	330	210	12	20
YSr 240	410	240	10	15
YSr 310	450	310	8	10
YSr 355	490	355	8	10



DIMENSIONS AND PROPERTIES OF RECTANGULAR SECTIONS (SHS) AS PER IS:4923-2017



Width (mm)	Depth (mm)	Thickness (mm)	Area (cm ²)	Weight (Kg/Mtr)	moment of inertia (cm ⁴)	Radius of Gyration (cm)	Elastic module (cm ³)	Plastic module (cm ³)
25	25	1.6	1.43	1.12	1.28	0.94	1.02	1.24
25	25	2.0	1.74	1.36	1.48	0.92	1.19	1.47
25	25	2.6	2.16	1.69	1.72	0.89	1.38	1.76
25	25	3.2	2.53	1.98	1.89	0.86	1.51	1.98
32	32	2.0	2.3	1.80	3.36	1.21	2.10	2.54
32	32	2.6	2.88	2.26	4.02	1.18	2.51	3.11
32	32	3.2	3.42	2.69	4.54	1.15	2.83	3.59
32	32	4.0	4.07	3.19	5.02	1.11	3.14	4.11
38	38	2.0	2.78	2.18	5.88	1.46	3.10	3.70
38	38	2.6	3.51	2.75	7.13	1.43	3.76	4.57
38	38	3.2	4.19	3.29	8.18	1.40	4.30	5.34
38	38	4.0	5.03	3.95	9.26	1.36	4.87	6.22
40	40	2.6	3.72	2.92	8.45	1.51	4.22	5.12
40	40	2.9	4.09	3.21	9.11	1.49	4.56	5.58
40	40	3.2	4.45	3.49	9.72	1.48	4.86	6.00
40	40	4.0	5.35	4.20	11.07	1.44	5.54	7.01
49.5	49.5	2.6	4.70	3.69	16.91	1.90	6.83	8.16
49.5	49.5	2.9	5.19	4.07	18.37	1.88	7.42	8.93
49.5	49.5	3.2	5.66	4.44	19.74	1.87	7.97	9.67
49.5	49.5	4.0	6.87	5.39	22.94	1.83	9.27	11.46
60	60	2.6	5.80	4.55	31.33	2.33	10.44	12.34
60	60	2.9	6.41	5.03	34.21	2.31	11.40	13.56
60	60	3.2	7.01	5.50	36.94	2.30	12.31	14.73
60	60	4.0	8.55	6.71	43.55	2.26	14.52	17.64
60	60	4.5	9.47	7.43	47.20	2.23	15.73	19.31
72	72	3.2	8.54	6.71	66.32	2.79	18.42	21.80
72	72	4.0	10.47	8.22	79.02	2.75	21.95	26.32
72	72	4.8	12.31	9.66	90.30	2.71	25.08	30.48
80	80	3.2	9.57	7.51	92.71	3.11	23.18	27.29
80	80	4.0	11.75	9.22	111.04	3.07	27.76	33.07
80	80	4.9	14.10	11.07	129.51	3.03	32.38	39.09
91.5	91.5	3.6	12.32	9.67	156.48	3.56	34.20	40.24
91.5	91.5	4.5	15.14	11.88	187.56	3.52	41.00	48.79
91.5	91.5	5.4	17.85	14.01	215.66	3.48	47.14	56.76
100	100	4.0	14.95	11.73	226.34	3.89	45.27	53.30
100	100	5.0	18.36	14.41	271.08	3.84	54.22	64.59
100	100	6.0	21.63	16.98	311.45	3.79	62.29	75.09
113.5	113.5	4.5	19.10	14.99	372.86	4.42	65.70	77.32
113.5	113.5	4.8	20.28	15.92	393.28	4.40	69.30	81.81
113.5	113.5	5.4	22.60	17.74	432.55	4.38	76.22	90.54
113.5	113.5	6.0	24.87	19.52	469.78	4.35	82.78	98.95
132	132	4.8	23.83	18.70	634.36	5.16	96.11	112.68
132	132	5.4	26.59	20.88	700.07	5.13	106.07	125.01
132	132	6.0	29.31	23.01	762.93	5.10	115.60	136.97
150	150	4.0	22.95	18.01	807.78	5.93	107.70	124.86
150	150	5.0	28.36	22.26	982.07	5.89	130.94	152.97
150	150	6.0	33.63	26.40	1145.84	5.84	152.78	179.87
150	150	7.0	38.78	30.44	1299.36	5.79	173.25	205.57
150	150	8.0	43.79	34.37	1442.89	5.74	192.39	230.09
220	220	4.0	34.15	26.81	2639.06	8.79	239.91	275.46
220	220	5.0	42.36	33.25	3237.9	8.74	294.35	339.72
220	220	6.0	50.43	39.59	3813.19	8.7	346.65	402.16
220	220	7.0	58.38	45.83	4365.33	8.65	396.85	462.81