

Properties of SHS

IS : 4923 : 1997/EN 10219-1 : 2006*/ASTM A-500

SHS	Thickness	Sec Area	Unit Wt	Moment of Inertia		Radius of Gyration		Elastic Modulus		Torsional Constants		Outer Surface Area
				I _{xx}	I _{yy}	r _{xx}	r _{yy}	z _{xx}	z _{yy}	J	B	per m
D X B	t	A	W	cm ⁴	cm ⁴	cm	cm	cm ³	cm ³	cm ⁴	cm ³	m ²
mm	mm	cm ²	kg/m									
25 x 25	1.6	1.43	1.12	1.28	1.28	0.94	0.94	1.02	1.02	1.96	1.46	0.092
	2	1.74	1.36	1.48	1.48	0.92	0.92	1.19	1.19	2.29	1.68	0.09
	2.6	2.16	1.69	1.72	1.72	0.89	0.89	1.38	1.38	2.86	1.92	0.087
	3.2	2.53	1.98	1.89	1.89	0.86	0.86	1.51	1.51	2.96	2.07	0.084
32 x 32	2	2.3	1.8	3.36	3.36	1.21	1.21	2.1	2.1	5.3	5.3	0.118
	2.6	2.88	2.26	4.02	4.02	1.18	1.18	2.51	2.51	6.45	6.45	0.115
	3.2	3.42	2.69	4.54	4.54	1.15	1.15	2.84	2.84	7.41	7.41	0.112
38 x 38	2	2.78	2.18	5.88	5.88	1.46	1.46	3.1	3.1	9.31	9.31	0.142
	2.6	3.51	2.75	7.14	7.14	1.43	1.43	3.76	3.76	11.51	11.51	0.139
	3.2	4.19	3.29	8.18	8.18	1.4	1.4	4.3	4.3	13.45	13.45	0.136
	4	5.03	3.95	9.26	9.26	1.36	1.36	4.87	4.87	15.67	15.67	0.131
40 x 40	2.6	3.72	2.92	8.45	8.45	1.51	1.51	4.22	4.22	13.63	13.63	0.147
	2.9	4.09	3.21	9.11	9.11	1.49	1.49	4.56	4.56	14.85	14.85	0.145
	3.2	4.45	3.49	9.72	9.72	1.48	1.48	4.86	4.86	16	16	0.144
	4	5.35	4.2	11.07	11.07	1.44	1.44	5.54	5.54	18.75	18.75	0.139s
49.5 x 49.5	2.6	4.7	3.69	16.91	16.91	1.9	1.9	6.83	6.83	27.19	27.19	0.185
	2.9	5.19	4.07	18.37	18.37	1.88	1.88	7.42	7.42	29.81	29.81	0.183
	3.6	6.28	4.93	21.42	21.42	1.85	1.85	8.66	8.66	35.54	35.54	0.179
	4.5	7.58	5.95	24.64	24.64	1.8	1.8	9.96	9.96	42.15	42.15	0.175
60 x 60	2.6	5.8	4.55	31.33	31.33	2.33	2.33	10.44	10.44	50.08	50.08	0.227
	2.9	6.41	5.03	34.21	34.21	2.31	2.31	11.4	11.4	56.12	56.12	0.225
	3.2	7.01	5.5	36.94	36.94	2.3	2.3	12.31	2.31	60.02	60.02	0.224
	4	8.55	6.71	43.55	43.55	2.26	2.26	14.52	14.52	72.41	72.41	0.219
	4.8	10.01	7.85	49.22	49.22	2.22	2.22	16.41	16.41	83.86	83.86	0.215
72 x 72	3.2	8.54	6.71	66.32	66.32	2.79	2.79	18.42	18.42	106.81	106.81	0.272
	4	10.47	8.22	79.03	79.03	2.75	2.75	21.95	21.95	129.85	129.85	0.267

80 x 80	4	12.31	9.66	90.31	90.31	2.71	2.71	25.09	25.09	151.55	151.55	0.263
	3.2	9.57	7.51	92.71	92.71	3.11	3.11	23.18	23.18	148.55	148.55	0.304
	4	11.75	9.22	111.04	111.04	3.07	3.07	27.76	27.76	181.22	181.22	0.299
	4.8	13.85	10.87	127.58	127.58	3.04	3.04	31.89	31.89	212.26	212.26	0.295
91.5 x 91.5	3.6	12.32	9.67	156.49	156.49	3.56	3.56	34.21	34.21	251.17	251.17	0.347
	4.5	15.4	11.88	187.57	187.57	3.52	3.52	41	41	306.78	306.78	0.343
	5.4	17.85	14.01	215.68	215.68	3.48	3.48	47.14	47.14	359.76	359.76	0.338
100 x 100	4	14.95	11.73	226.35	226.35	3.89	3.89	45.27	45.27	364.75	364.75	0.379
	5	18.36	14.41	271.1	271.1	3.84	3.84	54.22	54.22	441.84	441.84	0.374
	6	21.63	16.98	311.47	311.47	3.79	3.79	62.29	62.29	511.8	511.8	0.369
113.5 x 113.5	4.8	20.28	15.92	393.3	393.3	4.4	4.4	69.3	69.3	637.45	637.45	0.429
	5.4	22.6	17.74	432.58	432.58	4.38	4.38	76.23	76.23	708.69	708.69	0.426
132 x 132	4.8	23.83	16.71	634.39	634.39	5.16	5.16	96.12	96.12	1018.3	1018.3	0.503
	5.4	26.59	20.88	700.11	700.11	5.13	5.13	106.08	106.08	1134.25	1134.25	0.5
150 x 150	4	22.95	18.01	807.82	807.82	5.93	5.93	107.71	107.71	1273.46	1273.46	0.579
	5	28.36	22.26	982.12	982.12	5.89	5.89	130.95	130.95	1569.09	1569.09	0.574
	6	33.63	26.4	1154.91	1154.91	5.84	5.84	152.7g	152.7g	1856.18	1856.18	0.569
	7	38.78	30.44	1299.44	1299.44	5.79	5.79	173.26	173.26	2134.99	2134.99	0.564
	8	43.79	44.38	1443	1443	5.74	5.74	192.4	192.4	2405.78	2405.78	0.559
180 x 180	4	27.75	21.78	1421.74	1421.74	7.16	7.16	157.97	157.97	2224.31	2224.31	0.699
	5	43.36	26.97	1736.87	1736.87	7.11	7.11	192.99	192.99	2747.93	2747.93	0.694
	6	40.83	32.05	2036.52	2036.52	7.06	7.06	226.28	226.28	3259.23	3259.23	0.689
	7	47.18	33.03	2321.04	2321.04	7.01	7.01	257.89	257.89	3758.53	3758.53	0.684
	8	53.39	41.9	2590.73	2590.73	6.97	6.97	287.86	287.86	4246.16	4246.16	0.679
220 x 220	4	34.15	26.61	2639.14	2639.14	8.79	8.79	239.92	239.92	4099.49	4099.49	0.859
	5	42.36	33.25	3238.02	3238.02	8.74	8.74	294.37	294.37	5076.22	5076.22	0.854
	6	50.43	39.59	3813.36	3813.36	8.7	8.7	346.67	346.67	6034.73	6034.73	0.849
	7	58.38	45.83	4365.55	4365.55	8.65	8.65	396.67	396.67	6974.82	6974.82	0.844
	8	66.19	51.96	4894.99	4894.99	8.6	8.6	445	445	7897.48	7897.48	0.839
250 x 250*	4	38.95	30.57	3907.3	3907.3	10.02	10.02	312.58	312.58	6045.4	6045.4	0.979
	5	48.36	37.96	4805.01	4805.01	9.97	9.97	384.4	384.4	7494.83	7494.83	0.974
	6	57.63	45.24	5672	5672	9.92	9.92	453.76	453.76	8920.44	8920.44	0.969
	7	66.78	52.42	6508.73	6508.73	9.87	9.87	520.7	520.7	10322.7	10322.7	0.964
	8	75.79	59.5	7315.65	7315.65	9.82	9.82	585.25	585.25	11702.07	11702.07	0.959