

WEIGHT CHART FOR CIRCULAR HOLLOW SECTION FOR STRUCTURAL PURPOSES CONFIRMING TO IS1161

THICKNESS (mm) →		0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.20	2.50	3.00	3.20	3.60	4.00	4.80	5.00	5.60	6.00	7.40	8.00	9.50	10.00	12.00	14.00	16.00
SIZE / OD (Outside Diameter) CLASS : LIGHT, MEDIUM & HEAVY	(mm)	WEIGHT : KG / MTR																							
	21.30	0.40	0.50	0.59	0.69	0.78	0.87	0.95	1.04	1.16	1.35	1.43													
	26.90	0.51	0.64	0.76	0.88	1.00	1.11	1.23	1.34	1.50	1.77	1.87													
	33.70	0.65	0.81	0.96	1.12	1.27	1.42	1.56	1.71	1.92	2.27	2.41	2.67	2.93											
	38.00	0.73	0.91	1.09	1.26	1.44	1.61	1.78	1.94	2.19	2.59	2.75	3.05	3.35											
	42.40	0.82	1.02	1.22	1.42	1.61	1.80	1.99	2.18	2.46	2.91	3.09	3.44	3.79											
	48.30	0.94	1.17	1.39	1.62	1.84	2.06	2.28	2.50	2.82	3.35	3.56	3.97	4.37											
	50.80	0.99	1.23	1.47	1.71	1.94	2.18	2.41	2.64	2.98	3.54	3.76	4.19	4.62											
	60.30	1.17	1.46	1.75	2.03	2.32	2.60	2.88	3.15	3.56	4.24	4.51	5.03	5.55	6.57	6.82	7.55	8.03							
	76.10	1.49	1.85	2.22	2.58	2.94	3.30	3.65	4.01	4.54	5.41	5.75	6.44	7.11	8.44	8.77	9.74	10.37							
	88.90	1.74	2.17	2.60	3.02	3.44	3.87	4.29	4.70	5.33	6.36	6.76	7.57	8.38	9.96	10.35	11.50	12.27							
	101.60					3.95	4.43	4.91	5.39	6.11	7.29	7.77	8.70	9.63	11.46	11.91									
	114.30					4.45	4.99	5.54	6.08	6.89	8.23	8.77	9.83	10.88	12.96	13.48	15.01	16.03							
	127.00							6.17	6.77	7.68	9.17	9.77	10.96	12.13	14.47	15.04	16.77	17.90							
	139.70							6.79	7.46	8.46	10.11	10.77	12.08	13.39	15.97	16.61	18.52	19.78							
	165.10							8.04	8.84	10.02	11.99	12.78	14.34	15.89	18.98	19.74	22.03	23.54	28.78	30.99	36.45	38.25	45.31		
	168.30							8.20	9.01	10.22	12.23	13.03	14.62	16.21	19.35	20.14	22.47	24.02	29.36	31.63	37.20	39.04	46.26		
	193.70							9.46	10.39	11.79	14.11	15.03	16.88	18.71	22.36	23.27	25.98	27.77	34.00	36.64					
	219.10							10.71	11.77	13.35	15.99	17.04	19.13	21.22	25.37	26.40	29.49	31.53	38.63	41.65	49.11	51.57	61.29		
	244.50							11.96	13.15	14.92	17.87	19.04	21.39	23.72	28.37	29.53	32.99	35.29	43.27	46.66	55.06	57.83	68.81		
	273.00							13.37	14.69	16.68	19.98	21.29	23.92	26.54	31.75	33.05	36.93	39.51	48.47	52.28	61.73	64.86	77.24	89.42	101.41
	323.90										23.74	25.31	28.44	31.56	37.77	39.32	43.96	47.04	57.76	62.32	73.66	77.41	92.30	107.00	121.49
	355.60													34.68	41.53	43.23	48.34	51.73	63.54	68.58	81.09	85.23	101.68	117.94	134.00
	406.50													39.71	47.55	49.51	55.37	59.26	72.83	78.62	93.01	97.78	116.75	135.51	154.09
	457.20														53.55	55.76	62.37	66.76	82.09	88.62	104.89	110.29	131.75	153.02	174.09
	508.00															62.02	416.30	74.28	91.36	98.65	116.79	122.81	146.79	170.56	194.14

HOUSE OF QUALITY STEEL TUBES

SIZE RANGE

SHAPES / PRODUCT	SIZE	THICKNESS	LENGTH Meter	INDIAN STANDARD	STEEL GRADE
ROUND ERW PIPE (CHS)	21.70mm OD - 508.00mm OD	1.200MM – 12.00MM	4.00 to 12.00mtr	IS 1161 / IS 3589	YST 210/240/310/355 & FE330/FE410
SQUARE HOLLOW SECTION (SHS)	12mm X 12mm - 400mm X 400mm	1.200MM – 12.00MM	4.00 to 12.00mtr	IS 4923	YST 210/240/310/355
RECTANGLE HOLLOW SECTION (RHS)	26mm X 13mm - 400mm X 200mm	1.200MM – 12.00MM	4.00 to 12.00mtr	IS 4923	YST 210/240/310/355

APPLICATION, SPECIFICATIONS & STEEL GRADE – MECHANICAL & CHEMICAL PROPERTIES

APPLICATION	INDIAN STANDARD IS	AMERICAN STANDARD ASTM	EUROPEAN STANDARD EN
Mechanical, Structural & General Engineering	CHS : IS1161 RHS & SHS : IS4923 YST210, YST240, YST310, YST355	ASTM A500 GR A / B / C / D	EN 10219

TENSILE PROPERTIES OF STEEL TUBES FOR STRUCTURAL PURPOSE

GRADE	CHS (CIRCULAR HOLLOW SECTIONS)			SHS / RHS (SQUARE/RECTANGLE HOLLOW SECTIONS)		
	TENSILE STRENGTH Min - MPA	YIELD STRENGTH Min - MPa	ELONGATION %	TENSILE STRENGTH Min - MPA	YIELD STRENGTH Min - MPa	ELONGATION %
YST210	330	210	20	330	210	20
YST240	410	240	17	410	240	15
YST310	450	310	14	450	310	10
YST355	490	355	10	490	355	10

DIMENSIONAL TOLERANCE FOR SHS & RHS / SQUARE & RECTANGLE HOLLOW SECTIONS

OUTSIDE DIMENSIONAL	THICKNESS	SQUARENESS	CORNER RADIUS	WEIGHT INDIVIDUAL LENGTHS	WEIGHT ON LOT OF 10 MT
+/- 1% with a minimum of +/- 0.50mm	+/- 10.00%	90 deg +/- 2deg.	3t Max	10% -8%	+/- 7.5%

TOLERANCE FOR CHS – CIRCULAR HOLLOW SECTIONS

OUTSIDE DIMENSIONAL	THICKNESS	WEIGHT INDIVIDUAL LENGTHS	WEIGHT ON LOT OF 10 MT
Upto 48.30mm : + 0.40mm / - 0.80mm Above 48.30 : + / - 1.00%	+/- 10.00%	10% - 8%	+/- 5. % for Light Class +/- 7.5% For Medium & Heavy Class

CHEMICAL & MECHANICAL PROPERTIES – AS PER STEEL GRADE IS2062

STEEL GRADE	LADLE ANALYSIS, PERCENT, MAX					CARBON EQUIVALENT	TENSILE STRENGTH	YIELD STRENGTH	ELONGATION
	C	Mn	S	P	Si	CE, Max	Rm, Min Mpa	Min, Mpa	%
E250	0.22	1.50	0.045	0.045	0.40	0.41	410	250	23
E300	0.20	1.50	0.045	0.045	0.45	0.44	440	300	22
E350	0.20	1.55	0.045	0.045	0.45	0.47	490	350	22
E410	0.20	1.60	0.045	0.045	0.45	0.50	540	410	20

SHREEJI STEEL TUBES | HOUSE OF QUALITY STEEL TUBES