



# Carbon Steel Tubes for General Structure

JIS G3444

Grade	% Chemical Composition (Max)					Mechanical Properties (Min)		
	C	Si	Mn	P	S	Yield Strength	Tensile Strength	Elongation
						MPa	MPa	%
STK400	0.25	-	-	0.040	0.040	235	400	23
STK490	0.18	0.55	1.65	0.035	0.035	315	490	23

Nominal Size	Outside Diameter	Thickness (t)	Weight	Cross Sectional Area	Geometrical Moment of Inertia	Modulus of Section	Radius of Gyration
mm.	mm.	mm.	kg/m	cm <sup>2</sup>	cm <sup>4</sup>	cm <sup>3</sup>	cm
15	21.7	2.00	0.972	1.238	0.607	0.560	0.700
20	27.2	2.00	1.24	1.583	1.26	0.930	0.890
		2.30	1.41	1.799	1.41	1.03	0.880
25	34.0	2.30	1.80	2.291	2.89	1.70	1.12
32	42.7	2.30	2.29	2.919	5.97	2.80	1.43
		2.50	2.48	3.157	6.40	3.00	1.42
40	48.6	2.30	2.63	3.345	8.99	3.70	1.64
		2.50	2.84	3.621	9.65	3.97	1.63
		2.80	3.16	4.029	10.6	4.36	1.62
		3.20	3.58	4.564	11.8	4.86	1.61
50	60.5	2.30	3.30	4.205	17.8	5.90	2.06
		3.20	4.52	5.760	23.7	7.84	2.03
		4.00	5.57	7.100	28.5	9.41	2.00
65	76.3	2.80	5.08	6.465	43.7	11.5	2.60
		3.20	5.77	7.349	49.2	12.9	2.59
		4.00	7.13	9.085	59.5	15.6	2.58
80	89.1	2.80	5.96	7.591	70.7	15.9	3.05
		3.20	6.78	8.636	79.8	17.9	3.04
90	101.6	3.20	7.76	9.892	120	23.6	3.48
		4.00	9.63	12.26	146	28.8	3.45
		5.00	11.9	15.17	177	34.9	3.42
100	114.3	3.20	8.77	11.17	172	30.2	3.93
		3.50	9.56	12.18	187	32.7	3.92
		4.50	12.2	15.52	234	41.0	3.89
125	139.8	3.60	12.1	15.40	357	51.1	4.82
		4.00	13.4	17.07	394	56.3	4.80
		4.50	15.0	19.13	438	62.7	4.79
		6.00	19.8	25.22	566	80.9	4.74
		7.10	27.7	35.26	1100	134	5.60

Nominal Size	Outside Diameter	Thickness (t)	Weight	Cross Sectional Area	Geometrical Moment of Inertia	Modulus of Section	Radius of Gyration
mm.	mm.	mm.	kg/m	cm <sup>2</sup>	cm <sup>4</sup>	cm <sup>3</sup>	cm
175	190.7	4.50	20.7	26.32	1140	120	6.59
		5.30	24.2	30.87	1330	139	6.56
		6.00	27.3	34.82	1490	156	6.53
		7.00	31.7	40.40	1710	179	6.50
200	216.3	8.20	36.9	47.01	1960	206	6.46
		4.50	23.5	29.94	1680	155	7.49
		5.80	30.1	38.36	2130	197	7.45
		6.00	31.1	39.64	2190	203	7.44
250	267.4	7.00	36.1	46.03	2520	233	7.40
		8.00	41.1	52.35	2840	263	7.37
		8.20	42.1	53.61	2910	269	7.36
		6.00	38.7	49.27	4210	315	9.24
300	318.5	6.60	42.4	54.08	4600	344	9.22
		7.00	45.0	57.26	4860	363	9.21
		8.00	51.2	65.19	5490	411	9.18
		9.00	57.3	73.06	6110	457	9.14
		9.30	59.2	75.41	6290	470	9.13
350	355.6	6.00	46.2	58.91	7190	452	11.1
		6.90	53.0	67.55	8200	515	11.0
		8.00	61.3	78.04	9410	591	11.0
		9.00	68.7	87.51	10500	659	10.9
400	406.4	10.30	78.3	99.73	11900	744	10.9
		6.40	55.1	70.21	10700	602	12.3
		7.90	67.7	86.29	13000	734	12.3
		9.00	76.9	98.00	14700	828	12.3
		9.50	81.1	103.3	15500	871	12.2
400	406.4	12.00	102	129.5	19100	1080	12.2
		12.70	107	136.8	20100	1130	12.1
		7.90	77.6	98.90	19600	967	14.1
		9.00	88.2	112.4	22200	1090	14.1
		9.50	93.0	118.5	23300	1150	14.0
400	406.4	12.00	117	148.7	28900	1420	14.0
		12.70	123	157.1	30500	1500	13.9

Dimension Tolerances	Outside Diameter		Thickness		
	Class 1	: OD < 50 mm. : OD ≥ 50 mm.	: ±0.5 mm. : ±1%	Class 1	t < 4.0 mm. 4.0 mm. ≤ t < 12.0 mm. t > 12.0 mm.
Class 2	: OD < 50 mm. : OD ≥ 50 mm.	: ±0.25 mm. : ± 0.5%	Class 2	t < 3.0 mm. 3.0 mm. ≤ t < 12.0 mm. t ≥ 12.0 mm.	: ±0.3 mm. : ±10% : -1.2 mm., +10%