

Standard JIS G3444 : 1994

Carbon Steel Tubes for General Structural Purposes and Scaffolding

Nominal Size	Outside Diameter		Thickness	Unit mass	Area of Section	Moment of Inertia	Radius of Section
	in	mm					
1/2 (15)	21.70	2.00	0.97	1.24	0.61	0.70	
3/4 (20)	27.20	2.00	1.24	1.58	1.26	0.89	
		2.30	1.41	1.80	1.41	0.88	
1 (25)	34.00	2.30	1.80	2.29	2.89	1.12	
1 1/4 (32)	42.70	2.30	2.29	2.92	5.97	1.43	
		2.50	2.48	3.16	6.40	1.42	
1 1/2 (40)	48.60	2.30	2.63	3.35	8.99	1.64	
		2.50	2.84	3.62	9.65	1.63	
		2.80	3.16	4.03	10.60	1.62	
		3.20	3.58	4.56	11.80	1.61	
2 (50)	60.50	2.30	3.30	4.21	17.80	2.06	
		3.20	4.52	5.76	23.70	2.03	
		4.00	5.57	7.10	28.50	2.00	
2 1/2 (65)	76.30	2.80	5.08	6.47	43.70	2.60	
		3.20	5.77	7.35	49.20	2.59	
		4.00	7.13	9.09	59.50	2.58	
3 (80)	89.10	2.80	5.96	7.59	70.70	3.05	
		3.20	6.78	8.64	79.80	3.04	
3 1/2 (90)	101.60	3.20	7.76	9.82	120	3.48	
		4.00	9.63	12.26	146	3.45	
		5.00	11.90	15.17	177	3.42	
4 (100)	114.30	3.20	8.77	11.17	172	3.93	
		3.50	9.58	12.18	187	3.92	
		4.50	12.20	15.52	234	3.89	
5 (125)	139.80	3.60	12.10	15.40	357	4.82	
		4.00	13.40	17.07	394	4.80	
		4.50	15.00	19.13	438	4.79	
		6.00	19.80	25.22	566	4.74	
6 (150)	165.20	4.50	17.80	22.72	734	5.68	
		5.00	19.80	25.16	808	5.67	
		6.00	23.60	30.01	952	5.63	
		7.10	27.70	35.26	1100	5.60	
8 (200)	216.30	4.50	23.50	29.94	1680	7.49	
		5.80	30.10	38.36	2130	7.45	
		7.00	36.10	46.03	2520	7.40	
		8.20	42.10	53.61	2910	7.36	

Technical Specifications :

Chemical Composition (%)						Mechanical Properties				Flattening Strength	Bending Strength	
Symbol of Grade	C Max	Si Max	Mn Max	P Max	S Max	Tensile Strength N/mm ²	Yield Strength N/mm ²	Elongation (%)			Bend Angle	Inside Radius
								No.11,12 Test Piece Longitudinal	No.5 Test Piece Transverse			
STK 290	-	-	-	0.050	0.050	290 (min)	-	30 (min)	25 (min)	2/3 D	90°	6 D
STK 400	0.25	-	-	0.040	0.040	400 (min)	235 (min)	23 (min)	18 (min)	2/3 D	90°	6 D
STK 490	0.18	0.55	1.50	0.040	0.040	490 (min)	315 (min)	23 (min)	18 (min)	7/8 D	90°	6 D
STK 500	0.30	0.35	0.3 to 1.0	0.040	0.040	500 (min)	355 (min)	15 (min)	10 (min)	7/8 D	90°	8 D
STK 540	0.23	0.55	1.50	0.040	0.040	540 (min)	390 (min)	20 (min)	16 (min)	7/8 D	90°	6 D

Dimension Tolerances :

Permissible Variation	
Side Length	: under 50 mm ±0.5 mm : 50 mm or over, ±1 %
Wall Thickness	: under 3 mm ±0.3 mm : 3 mm or over, ±10 %
Length	: +30 mm, -0 mm
Weight	: ±10%

Standard JIS G3452 : 1997

Carbon Steel Pipes for Ordinary Piping

Nominal Size	Outside Diameter			Wall Thickness		Weight (Plain Ends)	
	in	mm	Tolerances	mm	Tolerances	kg/ft	kg/m
1/2 (15)	0.854	21.7	±0.5 mm	2.8	+ Not specified -12.5%	0.399	1.31
3/4 (20)	1.071	27.2	±0.5 mm	2.8		0.512	1.68
1 (25)	1.338	34.0	±0.5 mm	3.2		0.741	2.43
1 1/4 (32)	1.681	42.7	±0.5 mm	3.5		1.03	3.38
1 1/2 (40)	1.913	48.6	±0.5 mm	3.5		1.19	3.89
2 (50)	2.382	60.5	±1%	3.8		1.62	5.31
2 1/2 (65)	3.004	76.3	±1%	4.2		2.28	7.47
3 (80)	3.508	89.1	±1%	4.2		2.68	8.79
3 1/2 (90)	4.000	101.6	±1%	4.2		3.08	10.10
4 (100)	4.500	114.3	±1%	4.5		3.72	12.20
5 (125)	5.504	139.8	±1%	4.5		4.57	15.00
6 (150)	6.504	165.2	±1.6 mm	5.0		6.04	19.80
8 (200)	8.516	216.3	±0.8%	5.8		9.17	30.10

Note : For the designation of diameter, (A) or (B) is used. When (A) or (B) is used. Put an A or B mark. Respectively, after each figure for the purpose of classification.

Technical Specifications :

Chemical Composition (%)				Mechanical Properties		Hydrostatic Test bar
Symbol of Grade	P Max	S Max	Tensile Strength N/mm ²	Elongation (%)		
				No.11, 12 test piece	No.5 test piece	
SGP	0.040	0.040	290 (min)	Longitudinal 30 (min)	Transverse 25 (min)	25

Standard DIN 2440 / 2441 : Black & Galvanized Steel Pipe

Nominal Size DN	Outside Diameter		Wall Thickness	Calculated Weight	
	Max	Min		Plain Ends	Threads & Coupling
	in	mm	kg/ft	kg/m	
1/2 (15)	21.80	21.00	2.65	1.22	1.23
3/4 (20)	27.30	26.50	2.65	1.58	1.59
1 (25)	34.20	33.30	3.25	2.44	2.46
1 1/4 (32)	42.90	42.00	3.25	3.14	3.17
1 1/2 (40)	48.80	47.90	3.25	3.61	3.65
2 (50)	60.80	59.70	3.65	5.10	5.17
2 1/2 (65)	76.60	75.30	3.65	6.51	6.63
3 (80)	89.50	88.00	4.50	8.47	8.64
4 (100)	115.00	113.10	4.50	12.10	12.40
5 (125)	140.80	138.50	4.85	16.20	16.70
6 (150)	166.50	163.90	4.85	19.20	19.80

Technical Specifications :

Chemical Composition (%)				Mechanical Properties			Hydrostatic Test bar
C Max	Mn Max	P Max	S Max	Tensile Strength N/mm ²	Yield Strength N/mm ²	Elongation %	
-	-	-	-	310 - 540	185 (min)	12 - 18	50

Dimension Tolerances :

Permissible Variation	
Wall Thickness	: -12.5% + Not Specified
Length	: +100 mm, -50 mm
Weight	: ±10% per piece ±7.5% for a consignment of not less than 10 t

Standard JIS G3466 : 1988 Carbon Steel Square Pipe for General Structural Purpose

Side Length A x B		Wall Thickness mm	Unit Mass kg/m	Area of Section cm ²	Moment of Inertia cm ⁴	Radius of Section cm
in	mm					
1 1/2 x 1 1/2	40 x 40	1.60	1.88	2.392	5.79	1.56
		2.30	2.62	3.332	7.73	1.52
2 x 2	50 x 50	1.60	2.38	3.032	11.7	1.96
		2.30	3.34	4.252	15.9	1.93
		3.20	4.50	5.727	20.4	1.89
3 x 3	75 x 75	1.60	3.64	4.632	41.3	2.99
		2.30	5.14	6.552	57.1	2.95
		3.20	7.01	8.927	75.5	2.91
4 x 4	100 x 100	4.50	9.55	12.17	98.6	2.85
		2.30	6.95	8.852	140	3.97
		3.20	9.52	12.13	187	3.93
		4.00	11.70	14.95	226	3.89
		4.50	13.10	16.67	249	3.87
5 x 5	125 x 125	6.00	17.00	21.63	311	3.79
		9.00	24.10	30.67	408	3.65
		3.20	12.00	15.33	376	4.95
		4.50	16.60	21.17	506	4.89
6 x 6	150 x 150	5.00	18.30	23.36	553	4.86
		6.00	21.70	27.63	641	4.82
		9.00	31.10	39.67	865	4.67
		4.50	20.10	25.67	896	5.91
		5.00	22.30	28.36	982	5.89
		6.00	26.40	33.63	115 x 10	5.84
		9.00	38.20	48.67	158 x 10	5.69

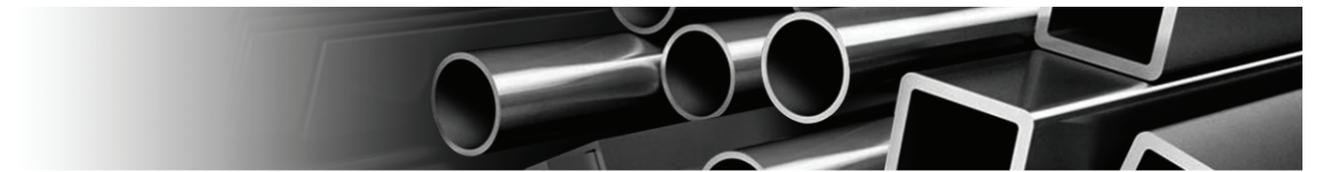
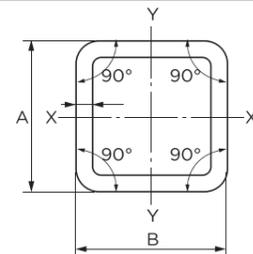
Technical Specifications :

Designation of Grade	Chemical Composition (%)					Mechanical Properties		
	C Max	Si Max	Mn Max	P Max	S Max	Tensile Strength N/mm ²	Yield Strength N/mm ²	Elongation (%) No.5 test piece
STKR 400	0.25	-	-	0.040	0.040	400 (min)	245 (min)	23 (min)
STKR 490	0.18	0.55	1.50	0.040	0.040	490 (min)	325 (min)	23 (min)

Dimension Tolerances :

Permissible Variation

Side Length : 100 mm or under : ±1.50 mm, over 100 mm ±1.50%
 Wall Thickness : under 3.00 mm : ±0.30 mm, over 3.00 mm ±10%
 Length : + Not Specified, -0 mm
 Weight : ±10%



Standard JIS G3466 : 1988 Carbon Steel Square Pipe for General Structural Purpose

Side Length A x B	Wall Thickness	Unit Mass	Area of Section	Moment of Inertia		Radius of Section	
				cm ⁴		cm.	
mm	mm	kg/m	cm ²	Ix	Iy	ix	iy
60 x 30	1.60	2.13	2.712	12.50	4.25	2.15	1.25
	2.30	2.98	3.792	16.80	5.65	2.11	1.22
	3.20	3.99	5.087	21.50	7.08	2.05	1.18
75 x 45	1.60	2.88	3.672	28.40	12.90	2.78	1.88
	2.30	4.06	5.172	38.90	17.60	2.74	1.84
	3.20	5.50	7.007	50.80	22.80	2.69	1.80
100 x 50	1.60	3.64	4.632	61.30	21.10	3.64	2.13
	2.30	5.14	6.552	84.80	29.00	3.60	2.10
	3.20	7.01	8.927	112.00	38.00	3.55	2.06
	4.50	9.55	12.170	147.00	48.90	3.47	2.00
125 x 75	2.30	6.95	8.852	192.00	87.50	4.65	3.14
	3.20	9.52	12.130	257.00	117	4.60	3.10
	4.00	11.70	14.950	311.00	141	4.56	3.07
	4.50	13.10	16.670	342.00	155	4.53	3.04
	6.00	17.00	21.630	428.00	192	4.45	2.98
150 x 75	3.20	10.80	13.730	402.00	137	5.41	3.16
150 x 100	3.20	12.00	15.330	488.00	262	5.64	4.14
	4.50	16.60	21.170	658.00	352	5.58	4.08
	6.00	21.70	27.630	835.00	444	5.50	4.01
	9.00	31.10	39.670	113.10	595	5.33	3.87
200 x 100	4.50	20.10	25.670	133.10	455	7.20	4.21
	6.00	26.40	33.630	170.10	577	7.12	4.14
	9.00	38.20	48.670	235.10	782	6.94	4.01

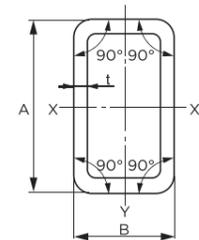
Technical Specifications :

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	C Max	Si Max	Mn Max	P Max	S Max	Tensile Strength N/mm ²	Yield Strength N/mm ²	Elongation (%) No.5 test piece
STKR 400	0.25	-	-	0.040	0.040	400 (min)	245 (min)	23 (min)
STKR 490	0.18	0.55	1.50	0.040	0.040	490 (min)	325 (min)	23 (min)

Dimension Tolerances :

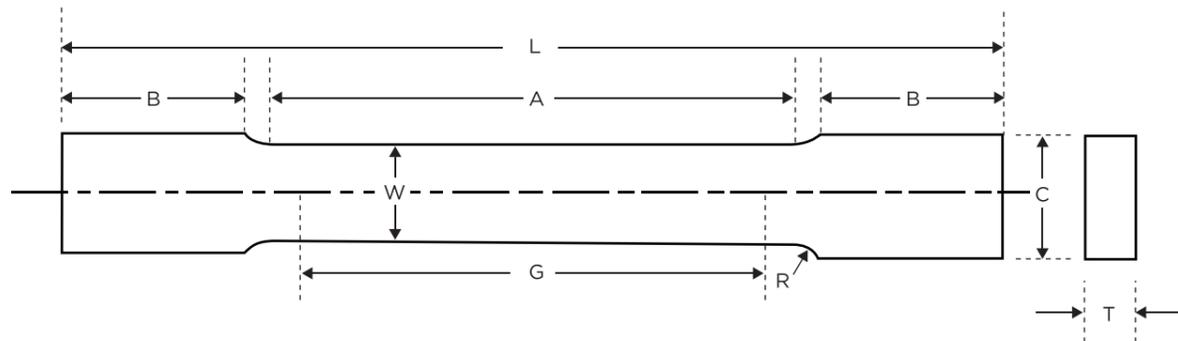
Permissible Variation

Side Length : 100 mm or under : ±1.50 mm, over 100 mm ±1.50%
 Wall Thickness : under 3.00 mm : ±0.30 mm, over 3.00 mm ±10%
 Length : + Not Specified, -0 mm
 Weight : ±10%



SAMPLING OF MATERIALS

1. TEST PIECE FOR STEEL PLATE

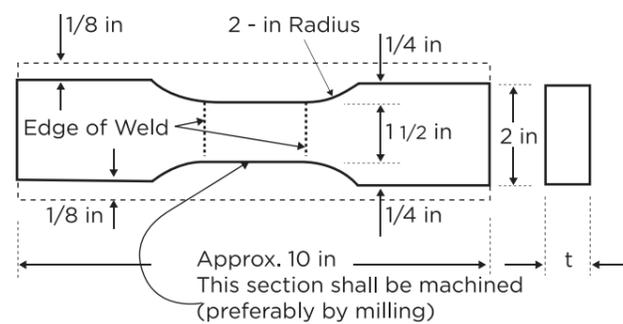


Standard DIN 2440 / 2441 : Black & Galvanized Steel Pipe

	Standard Specimen		Subsize Specimen
	Plate - Type 40 mm Wide (mm)	Sheet - Type 12.5 mm Wide (mm)	6.25 mm Wide (mm)
G - Gage length	200 ±0.25	50 ±0.10	25.0 ±0.08
W - Width	40 ±2	12.5 ±0.25	6.25 ±0.05
T - Thickness	5 min	16 max	6.25 max
R - Radius of fillet, min	13	13	6
L - Over-all length, min	450	200	100
A - Length of reduced section, min	225	60	32
B - Length of grip section, min	75	50	32
C - Width of grip section, approximate	50	20	10

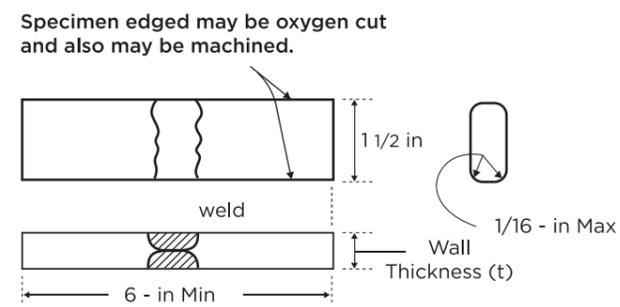
2. TEST PIECE FOR PRODUCTION WELD

2.1 TENSILE TEST PIECE



Note
Weld reinforcement or flash need not be removed flush with base metal.

2.2 GUIDED BEND TEST PIECE



Note
Weld reinforcement or flash need not be removed flush with base metal.



THAI STEEL PRODUCTS CO., LTD.

บริษัท ไทยสตีลโปรดักส์ จำกัด