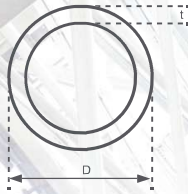




MITRSTEEL

บริษัท มิตรสตีล จำกัด www.mitrsteel.com
114/40 หมู่ 10 ตำบลหนองละลอก อำเภอบ้านค่าย
จังหวัดระยอง 21120 Tel. 66(0)3301-2436-8



CARBON STEEL PIPE

เหล็กงานโครงสร้าง



MATERIAL OF GRADE	CHEMICAL COMPOSITION (%)					MECHANICAL PROPERTIES			COLOR CODE
	C Max	Si Max	Mn Max	P Max	S Max	Yield Strength	Tensile Strength	Elongation	Material of Grade
						N/m ²	N/m ²	%	
HS 41	0.280	-	-	0.048	0.048	235	402	23	GREEN
HS 50	0.210	0.570	1.530	0.048	0.048	314	490	23	RED
HS 51	0.330	0.370	0.330-1.030	0.048	0.048	353	500	15	WHITE

Nominal size		Thickness mm	Weight (plain end) kg/m	Cross sectional area	Geometrical moment of inertia	Modulus of section	Radius of gyration
in	mm	STD	STD	cm ²	cm ⁴	cm ³	cm
1/2"	15	2.00	0.97	1.238	0.607	0.56	0.70
3/4"	20	2.30	1.41	1.799	1.41	1.03	0.88
1"	25	2.30	1.80	2.291	2.89	1.70	1.12
1 1/4"	32	2.30	2.29	2.919	5.97	2.80	1.43
1 1/2"	40	2.30	2.63	3.345	8.99	3.70	1.64
		3.20	3.58	4.564	11.8	4.86	1.61
2"	50	3.20	4.52	5.760	23.7	7.84	2.03
		4.00	5.57	7.100	28.5	9.41	2
2 1/2"	65	3.20	5.77	7.349	49.2	12.9	2.59
		4.00	7.13	9.085	59.5	15.6	2.56
3"	80	3.20	6.78	8.636	79.8	17.9	3.04
		4.00	8.39	10.69	97	21.8	3.01
3 1/2"	90	3.20	7.76	9.892	120	23.6	3.48
		4.00	9.63	12.26	146	28.8	3.45
4"	100	3.20	8.77	11.17	172	30.2	3.93
		4.50	12.20	15.52	234	41	3.89
		5.60	15.00	19.12	283	49.6	3.85
5"	125	4.50	15.00	19.13	438	62.7	4.79
		6.00	19.80	25.22	566	80.9	4.74
6"	150	4.50	17.80	22.72	734	88.9	5.68
		6.00	23.60	30.01	952	115	5.63
7"	175	5.00	22.90	29.17	1260	132	6.57
		7.00	31.70	40.40	1710	179	6.50
8"	200	6.00	31.10	39.61	2190	203	7.44
		8.00	41.10	52.35	2840	263	7.37

Dimension Tolerances

Outside Diameter : ≤ 50 mm : ± 0.5 mm
 > 50 mm : $\pm 1\%$

Thickness : $2.0 \leq t \leq 3.2$: ± 0.30 mm
 $4.0 \leq t \leq 8.0$: $\pm 10\%$

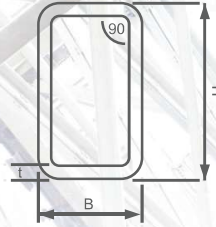
Weight : $\pm 10\%$

STRUCTURAL
PURPOSE



MITRSTEEL

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CARBON STEEL RECTANGULAR PIPE

เหล็กงานโครงสร้าง

TIS 107

MATERIAL OF GRADE	CHEMICAL COMPOSITION (%)					MECHANICAL PROPERTIES			COLOR CODE
	C Max	Si Max	Mn Max	P Max	S Max	Yield Strength	Tensile Strength	Elongation	Material of Grade
						N/mm ²	N/mm ²	%	
HS 41	0.280	-	-	0.048	0.048	235	402	23	GREEN
HS 50	0.210	0.570	1.530	0.048	0.048	314	490	23	RED

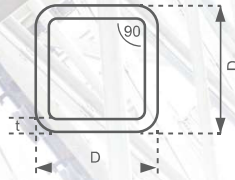
Nominal size		Thickness mm	Weight (plain end) kg/m	Cross sectional area cm ²	Geometrical moment of inertia cm ⁴		Modulus of section cm ³		Radius of gyration cm	
A	B	STD	STD	STD	I _x	I _y	Z _x	Z _y	i _x	i _y
50	25	2.30	2.44	3.102	9.31	3.1	3.72	2.48	1.73	1
		3.20	3.24	4.127	11.6	3.8	4.65	3.04	1.68	0.96
60	30	2.30	2.98	3.792	16.8	5.65	5.61	3.76	2.11	1.22
		3.20	3.99	5.087	21.4	7.08	7.15	4.72	2.05	1.18
75	38	2.30	3.81	4.85	34.6	12	9.23	6.3	2.67	1.57
		3.20	5.15	6.559	45	15.4	12	8.09	2.62	1.53
75	45	2.30	4.06	5.172	38.9	17.6	10.4	7.82	2.74	1.84
		3.20	5.50	7.007	50.8	22.8	13.5	10.1	2.69	1.8
90	45	2.30	4.60	5.862	61	20.8	13.6	9.22	3.23	1.88
		3.20	6.25	7.967	80.2	27.0	17.8	12.0	3.17	1.84
100	50	3.20	7.01	8.927	112	38	22.5	15.2	3.55	2.06
		4.00	8.59	10.95	142	46.7	28.4	18.7	3.55	2.03
		4.50	9.55	12.17	147	48.9	29.3	19.5	3.47	2
125	50	3.20	8.26	10.53	198	46.7	31.6	18.7	4.33	2.11
		4.00	10.2	12.95	238	55.6	38	22.6	4.28	2.07
		4.50	11.3	14.42	261	60.6	41.7	24.2	4.25	2.05
125	75	3.20	9.52	12.13	257	117	41.1	31.1	4.6	3.1
		4.00	11.70	14.95	311	141	49.7	37.5	4.56	3.07
		4.50	13.10	16.67	342	155	54.8	41.2	4.53	3.04
150	80	4.50	15.20	19.37	563	211	75	52.9	5.39	3.3
		6.00	19.80	25.23	710	264	94.7	66.1	5.31	3.24
150	100	4.50	16.60	21.17	658	352	87.7	70.4	5.58	4.08
		6.00	21.70	27.63	835	444	111	88.8	5.50	4.01
200	100	4.50	20.10	25.67	1330	455	133	90.9	7.2	4.21
		6.00	26.40	33.63	1700	577	170	115	7.12	4.14

Dimension Tolerances

Outside Diameter: $b \leq 100 \text{ mm} : \pm 1.5 \text{ mm}$
 $b > 100 \text{ mm} : \pm 1.5\%$

Thickness : $2.0 \leq t \leq 3.2 : \pm 0.30 \text{ mm}$
 $4.0 \leq t \leq 8.0 : \pm 10\%$

Weight : $\pm 10\%$



CARBON STEEL HOLLOW SECTION PIPE

เหล็กงานโครงสร้าง



MATERIAL OF GRADE	CHEMICAL COMPOSITION (%)					MECHANICAL PROPERTIES			COLOR CODE
	C Max	Si Max	Mn Max	P Max	S Max	Yield Strength	Tensile Strength	Elongation	Material of Grade
						N/mm ²	N/mm ²	%	
HS 41	0.280	-	-	0.048	0.048	235	402	23	GREEN
HS 50	0.210	0.570	1.530	0.048	0.048	314	490	23	RED

Nominal size		Thickness mm	Weight (plain end) kg/m	Cross sectional area cm ²	Geometrical moment of inertia cm ⁴	Modulus of section cm ³	Radius of gyration cm
A	B	STD	STD	STD	I _x ,I _y	Z _x ,Z _y	i _x ,i _y
25	25	2.00	1.36	1.737	1.48	1.19	0.924
		2.30	1.53	1.972	1.61	1.29	0.904
32	32	2.30	2.04	2.596	3.71	2.32	1.2
		3.20	2.69	3.423	4.54	2.84	1.15
38	38	2.30	2.47	3.148	6.54	3.44	1.44
		3.20	3.29	4.191	8.18	4.3	1.4
50	50	2.30	3.34	4.252	15.9	6.34	1.93
		3.20	4.50	5.727	20.4	8.16	1.89
60	60	2.30	4.06	5.172	28.3	9.44	2.34
		3.20	5.50	7.007	36.9	12.3	2.3
		4.00	6.71	8.548	43.6	14.5	2.26
75	75	3.20	7.01	8.927	75.5	20.1	2.91
		4.00	8.59	10.948	90.2	24.1	2.87
90	90	3.20	8.51	10.85	135	29.9	3.52
		4.00	10.48	13.35	162	36	3.48
		4.50	11.67	14.87	178	39.5	3.46
100	100	3.20	9.52	12.13	187	37.5	3.93
		4.00	11.70	14.95	226	45.3	3.89
		4.50	13.10	16.67	249	49.9	3.87
150	150	4.50	20.10	25.67	896	120	5.91
		6.00	26.40	33.63	1150	153	5.84
175	175	4.50	23.70	30.17	1450	166	6.93
		6.00	31.10	39.63	1860	213	6.86
200	200	6.00	35.80	45.63	2830	283	7.88
		8.00	46.90	59.79	3620	362	7.78
		9.00	52.30	66.67	3990	399	7.73
250	250	6.00	45.20	57.63	5670	454	9.92
		8.00	59.20	75.79	7320	585	9.82
		9.00	66.50	84.67	8090	647	9.78
300	300	6.00	54.70	69.63	9960	664	12
		9.00	80.60	102.7	14300	956	11.8
		12.00	106.00	134.5	18300	1220	11.7
350	350	9.00	94.70	120.7	23200	1320	13.9
		12.00	124.00	158.5	29800	1700	13.7

Dimension Tolerances

Outside Diameter: ≤100 mm : ± 1.5 mm
>100 mm : ± 1.5%

Thickness : 2.0 ≤ t ≤ 3.2 : ± 0.30 mm
4.0 ≤ t ≤ 8.0 : ± 10%

Weight : ± 10%