STEELMAX INTERNATIONAL CO., LTD.



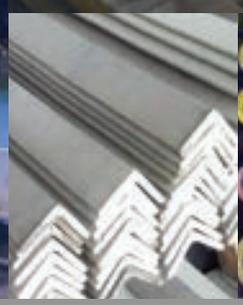


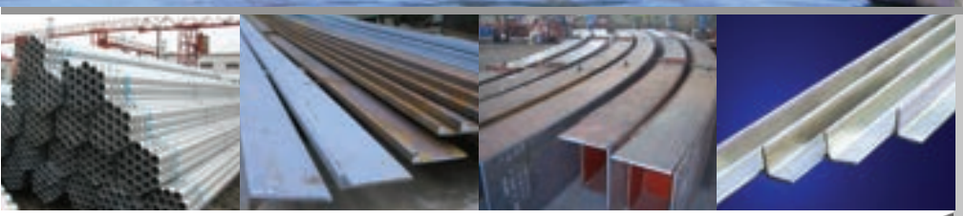

TOGETHER INTO THE FUTURE

Application

Steelmax International Co., Ltd. was established to serve the growing demands of steel materials arising from a wide spectrum of industries including :

- Offshore Oil and Gas
- Ship Repair and Conversions
- Ship Building
- Civil Constructions
- Onshore Constructions





Products

- High Tensile Steel
- Mild Steel
- Flange & Forging Material
- Stainless Steel

STEELMAX INTERNATIONAL CO., LTD.

HIGH TENSILE PRODUCTS

1) Offshore, Shipbuilding and Structural Plate	Offshore & Structural Grades	BS 7191 355EM, 355EMZ BS 7191 450EM, 450EMZ BS 7191 355D BS 7191 275D
		BS EN 10025 S355 J2G3 BS EN 10025 S355 J2G4 BS EN 10025 S355 K2G3 BS EN 10025 S355 K2G4
		API 2H GR.50 API 2W GR.50 ASTM A572 GR.50
	Shipbuilding Grade	ABS GR.A ABS GR.EH36 ST 52-3N
	Structural Grade	BS 4360 GR.50C
	Mild Steel Grade	ASTM A36, S275JR JIS G3101 SS400, ASTM A283 GR.C
2) Boiler, Pressure Vessel Plate		ASME SA516 GR.70N ASTM A516 GR.70N ASME SA 387 Class 1, Class 2
3) Section, Bars and Shapes	Universal Beams / Universal Columns	BS 7191 355EM BS 7191 355D BS 7191 275D BS 4360 GR.50B, 50C, 50D BS 4360 GR.43A, 43D, MOD JIS G3101 SS400 EN 10025 S355 J2G4 EN 10025 S275 J2G4 ASTM A572 GR.50 ASTM A36
	Steel Channels * Hot Rolled Steel Angles	BS EN 10025 S355JO MO BS 4369 GR.50C, 55C ASTM A572 GR.50
	* Round Square & Flat Bars	BS 4360 GR.50B, 50D EN 10025 S355 J2G4
	European Channels * European Beams / Euro norm Sections	BS 4360 GR.50D ASTM A572 GR.50 BS 7191 355D BS 7191 355EM EN 10025 S355 J2G4 ASTM A36 ST 52-3 Normalized
4) Pipe, Tubular & Hollow Sections	Seamless Casing & Tubing	API 5CT
	Structural Seamless Tubes	API 5L X 52 Modified BS 7191 355EM, BS 7191 355EMZ EN 10210 S355 J2H (MOD) APL 5L X56, X60, X65, X70 BS 7191 450EM, BS 7191 450EMZ
	SAW Pipes	API 5L GR.B API 5L X52-X70 API 2H GR.50 ASTM A36 ASTM A572 GR.50 BS 7191 355EM BS 7191 355EMZ BS 7191 450EM BS 7191 450EMZ
	Square Hollow Sections / Rectangular Hollow Sections	EN 10210 S275J2H EN 10210 S355J2H

1. PRODUCT ITEMS

1) FORGED CARBON, STAINLESS STEEL & ALLOY STEEL FLANGES
2) CARBON & STAINLESS STEEL PLATE FLANGES

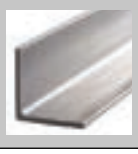
IN ACCORDANCE WITH ANSI / ASME, MSS, API, AWWA, DIN, NF, KS & JIS STANDARD AND SPECIAL DESIGNED SIZE

2. MAJOR HANDLING ITEMS

1) FLANGE (MANUFACTURED)
2) GASKET, GLAND PACKING AND MECHANICAL SEAL
3) FORGED AND BUTT-WELD FITTINGS AND OTHERS PIPING MATERIAL (PIPE, BOLT & NUT, FLEXIBLE JOINT ETC.)
4) VALVES
   * FORGED GATE, GLOBE, CHECK AND BALL VALVES
   * CASTING GATE, GLOBE, CHECK AND BALL VALVES
   * BUTTERFLY VALVE
   * OTHERS

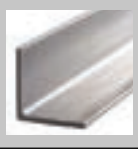
3. MATERIAL

1) Carbon Steel	S/A105
	S/A 350 - LF1
	S/A 350 - LF2
	S/A 350 - LF3
	S/A 266 - CL.4
	S/A 266 - CL.2
	SS400
	A694-F65
2) Stainless Steel	S/A 182 - F304 (L)
	S/A 182 - F316 (L)
	S/A 182 - F321
	S/A 182-F51
	S/A 182-F347
3) Alloy Steel	S/A 182 - F1
	S/A 182 - F5
	S/A 182 - F6
	S/A 182 - F9
	S/A 182 - F11
	S/A 182 - F12
	S/A 182 - F22



ANGLE SS400/SS540

ANGLE	WEIGHT KG/M
25 X 25 X 3 X 6M	1.12
25 X 25 X 5 X 6M	1.77
30 X 30 X 3 X 6M	1.36
30 X 30 X 5 X 6M	2.18
40 X 40 X 3 X 6M	1.83
40 X 40 X 4 X 6M	2.42
40 X 40 X 5 X 6M	2.95
40 X 40 X 6 X 6M	3.52
45 X 45 X 4 X 6M	2.74
45 X 45 X 5 X 6M	3.38
50 X 50 X 3 X 6M	2.33
50 X 50 X 4 X 6M	3.06
50 X 50 X 5 X 6M	3.77
50 X 50 X 6 X 6M	4.43
60 X 60 X 4 X 6M	3.68
60 X 60 X 5 X 6M	4.55
60 X 60 X 6 X 6M	5.42
65 X 65 X 5 X 6M	5.00
65 X 65 X 6 X 6M	5.90
65 X 65 X 8 X 6M	7.66
70 X 70 X 6 X 6M	6.38
75 X 75 X 6 X 6M	6.85
75 X 75 X 9 X 6M	9.96
75 X 75 X 12 X 6M	13.00
80 X 80 X 6 X 6M	7.32
90 X 90 X 6 X 6M	8.28
90 X 90 X 7 X 6M	9.59
90 X 90 X 10 X 6M	13.30
100 X 100 X 7 X 6M	10.70
100 X 100 X 10 X 6M	14.90
100 X 100 X 12 X 6M	17.70
120 X 120 X 8 X 6M	14.70
130 X 130 X 9 X 6M	17.90
130 X 130 X 12 X 6M	23.40
130 X 130 X 15 X 6M	28.80
150 X 150 X 12 X 6M	27.30
150 X 150 X 15 X 6M	33.60



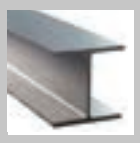
ANGLE SS400/SS540

ANGLE	WEIGHT KG/M
200 X 200 X 15 X 6M	45.30
200 X 200 X 20 X 6M	59.70
200 X 200 X 25 X 6M	73.60
250 X 250 X 25 X 6M	93.70
250 X 250 X 35 X 6M	128.00

CHANNEL SS400/SM520

CHANNEL	WEIGHT KG/M
50 X 25 X 5 X 6 X 6M	3.70
75 X 40 X 5 X 7 X 6M	6.90
100 X 50 X 5 X 7.5 X 6M	9.40
125 X 65 X 6 X 8 X 6M	13.40
150 X 75 X 6.5 X 10 X 6M	18.60
150 X 75 X 9 X 12.5 X 6M	24.00
180 X 75 X 7 X 10.5 X 6M	21.40
200 X 80 X 7.5 X 11 X 6M	24.60
200 X 90 X 8 X 13.5 X 6M	30.30
250 X 90 X 9 X 13 X 6M	34.60
250 X 90 X 11 X 14.5 X 6M	40.20
300 X 90 X 9 X 13 X 6M	38.10
300 X 90 X 10 X 15.5 X 6M	43.80
300 X 90 X 12 X 16 X 6M	48.60
380 X 100 X 10.5 X 16 X 6M	54.50
380 X 100 X 13 X 16.5 X 6M	62.00
380 X 100 X 13 X 20 X 6M	67.30

Note : Length 9M & 12M is also available depending on requirement.



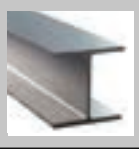
H - BEAM SS400/SM520

H - BEAM	WEIGHT KG/M
100 X 50 X 5 X 7 X 6M	9.30
100 X 100 X 6 X 8 X 6M	17.20
125 X 125 X 6.5 X 9 X 6M	23.80
148 X 100 X 6 X 9 X 6M	21.10
150 X 75 X 5 X 7 X 6M	14.00
150 X 150 X 7 X 10 X 6M	31.50
175 X 90 X 5 X 8 X 6M	18.10
175 X 175 X 7.5 X 11 X 6M	40.20
200 X 100 X 5.5 X 8 X 6M	21.30
194 X 150 X 6 X 9 X 6M	30.60
200 X 200 X 8 X 12 X 6M	49.90
250 X 125 X 6 X 9 X 6M	29.60
244 X 175 X 7 X 11 X 6M	44.10
250 X 250 X 9 X 14 X 6M	72.40
300 X 150 X 6.5 X 9 X 6M	36.70
294 X 200 X 8 X 12 X 6M	56.80
300 X 300 X 10 X 15 X 6M	94.00
350 X 175 X 7 X 11 X 6M	49.60
340 X 250 X 9 X 14 X 6M	79.70
350 X 350 X 12 X 19 X 6M	137.00
400 X 200 X 8 X 13 X 6M	66.00
390 X 300 X 10 X 16 X 6M	107.00
400 X 400 X 13 X 21 X 6M	172.00
450 X 200 X 9 X 14 X 6M	76.00
440 X 300 X 11 X 18 X 6M	124.00
500 X 200 X 10 X 16 X 6M	89.60
488 X 300 X 11 X 18 X 6M	128.00
600 X 200 X 11 X 17 X 6M	106.00
588 X 300 X 12 X 20 X 6M	151.00
700 X 300 X 13 X 24 X 6M	185.00
800 X 300 X 14 X 26 X 6M	210.00
900 X 300 X 16 X 28 X 6M	243.00

I - BEAM SS400

I - BEAM	WEIGHT KG/M
150 X 75 X 5.5 X 9.5 X 6M	17.10
200 X 100 X 7 X 10 X 6M	26.00
200 X 150 X 9 X 16 X 6M	50.40
250 X 125 X 7.5 X 12.5 X 6M	38.30
250 X 125 X 10 X 19 X 6M	55.50
300 X 150 X 8 X 13 X 6M	48.30
300 X 150 X 10 X 18.5 X 6M	65.50
300 X 150 X 11.5 X 22 X 6M	76.80
350 X 150 X 9 X 15 X 6M	58.50
350 X 150 X 12 X 24 X 6M	87.20
400 X 150 X 10 X 18 X 6M	72.00
400 X 150 X 12.5 X 25 X 6M	95.80
450 X 175 X 11 X 20 X 6M	91.70
450 X 175 X 13 X 26 X 6M	115.00
600 X 190 X 13 X 25 X 6M	133.00
600 X 190 X 16 X 35 X 6M	176.0

Note : Length 9M & 12M is also available depending on requirement.



SUBSERIES H - BEAM SS400

SUBSERIES H - BEAM	WEIGHT KG/M
198 X 99 X 4.5 X 7 X 6M	18.2
200 X 204 X 12.0 X12 X 6M	56.2
208 X 202 X 10.0 X16 X 6M	65.7
244 X 252 X 11.0 X 11 X 6M	64.4
248 X 124 X 5.0 X 8 X 6M	25.7
248 X 249 X 8.0 X 13 X 6M	66.5
250 X 255 X 14.0 X 14 X 6M	82.2
294 X 302 X 12.0 X 12 X 6M	84.5
298 X 149 X 5.5 X 8 X 6M	32.0
298 X 201 X 9.0 X 14 X 6M	65.4
298 X 299 X 9.0 X 14 X 6M	87.0
300 X 305 X 15.0 X 15 X 6M	106.0
304 X 301 X 11.0 X 17 X 6M	106.0
336 X 249 X 8.0 X 12 X 6M	69.2
338 X 351 X 13.0 X 13 X 6M	106.0
344 X 348 X 10.0 X 16 X 6M	115.0
344 X 354 X 16.0 X 16 X 6M	131.0
346 X 174 X 6.0 X 9 X 6M	41.4
354 X 176 X 8.0 X 13 X 6M	57.8
386 X 299 X 9.0 X 14 X 6M	94.3
388 X 402 X 15.0 X 15 X 6M	140.0
394 X 398 X 11.0 X 18 X 6M	147.0
396 X 199 X 7.0 X 11 X 6M	56.60
400 X 408 X 21.0 X 21 X 6M	197.0
404 X 201 X 9.0 X 15 X 6M	75.5
414 X 405 X 18.0 X 28 X 6M	232.0
434 X 299 X 10.0 X 15 X 6M	106.0
446 X 199 X 8.0 X 12 X 6M	66.2
446 X 302 X 13.0 X 21 X 6M	145.0
456 X 201 X 10.0 X 17 X 6M	88.9
482 X 300 X 11.0 X 15 X 6M	114.0

SUBSERIES H - BEAM	WEIGHT KG/M
494 X 302 X 13.0 X 21 X 6M	150.0
496 X 199 X 9.0 X 14 X 6M	79.5
506 X 201 X 11.0 X 19 X 6M	103.0
582 X 300 X 12.0 X 17 X 6M	137.0
594 X 302 X 14.0 X 23 X 6M	175.0
596 X 199 X 10.0 X 15 X 6M	94.6
606 X 201 X 12.0 X 20 X 6M	120.0
612 X 202 X 13.0 X 23 X 6M	134.0
692 X 300 X 13.0 X 20 X 6M	166.0
792 X 300 X 14.0 X 22 X 6M	191.0
890 X 299 X 15.0 X 23 X 6M	213.0
912 X 302 X 18.0 X 34 X 6M	286.0

Note : Length 9M & 12M is also available depending on requirement.

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HOT ROLLED CARBON STEEL PLATE

Structure : SS400 (6'X20',8'X20'), A/SA36
Boiler : A/SA283 GR.C, A285 GR.C, A/SA516 GR.70, SA516 GR.70N
High Tensile : A572 GR.50, SM490YA, SM490YB, SM520B, S355JR, S355J2, EH36, ABREX, CORTEN-A, CORTEN-B

width x length thickness (MM)	1219 X 2438MM (4' X 8') (Weight / PCE)	1524 X 3048MM (5' X 10') (Weight / PCE)	1524 X 6096MM (5' X 20') (Weight / PCE)
1	23	-	-
1.2	28	-	-
1.4	33	-	-
1.45	34	-	-
1.5	35	-	-
1.6	37	-	-
1.8	42	-	-
2	47	73	146
2.3	54	84	168
2.5	58	91	182
2.7	63	98	197
2.8	65	102	204
3	70	109	219
3.2	75	117	233
4	93	146	292
4.5	105	164	328
5	117	182	365
5.5	128	201	401
6	140	219	438
8	187	292	583
9	210	328	656
10	233	365	729
12	280	438	875
12.7	296	463	926
15	350	547	1094
16	373	583	1167
18	420	656	1313
19	443	693	1386
20	467	729	1459
22	513	802	1604
25	583	912	1823
28	653	1021	2042
30	700	1094	2188
32	747	1167	2334
36	840	1313	2625
38	887	1386	2771
40	933	1459	2917
50	1166	1823	3646
60	1400	2188	4376
70	1633	2553	5105
80	1866	2917	5834
90	2100	3282	6564
100	2333	3646	7293

Note : Special length can be cut as per requirement.

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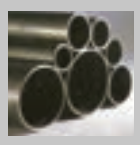

ROUND PIPE
TIS107 STK400

Material of Grade	Chemical Composition (%)					Mechanical Properties		
	C Max	Si Max	Mn Max	P Max	S Max	Yield Strength N/mm2	Tensile Strength N/mm2	Elongation %
STK 400	0.250	-	-	0.040	0.040	235	400	23
STK 490	0.180	0.550	1.500	0.040	0.040	315	490	23

Nominal Size			Thickness MM	Weight KG/M
A (MM)	B (MM)	IN	STD	STD
15	21.70	1/2"	2.00	0.97
20	27.20	3/4"	2.00	1.24
			2.30	1.41
25	34.00	1"	2.30	1.80
32	42.70	1-1/4"	2.30	2.29
			2.50	2.48
40	48.60	1-1/2"	2.30	2.63
			2.50	2.84
			2.80	3.16
			3.20	3.58
50	60.50	2"	2.30	3.30
			3.20	4.52
			4.00	5.57
65	76.30	2-1/2"	2.80	5.08
			3.20	5.77
			4.00	7.13
80	89.10	3"	2.80	5.96
			3.20	6.78
			4.00	8.39
90	101.60	3-1/2"	3.20	7.76
			4.00	9.63
			5.00	11.90
100	114.30	4"	3.20	8.77
			3.50	9.58
			4.50	12.20
			5.60	15.00
125	139.80	5"	3.60	12.10
			4.00	13.40
			4.50	15.00
			6.00	19.80
150	165.20	6"	4.50	17.80
			5.00	19.80
			6.00	23.60
			7.10	27.70
200	216.30	8"	4.50	23.50
			5.80	30.10
			6.00	31.10
			7.00	36.10
			8.00	41.10
			8.20	42.10
250	267.40	10"	6.00	38.70
			6.60	42.40
			7.00	45.00
			8.00	51.20
			9.00	57.30
			9.30	59.20

Nominal Size			Thickness MM	Weight KG/M
A (MM)	B (MM)	IN	STD	STD
300	318.50	12"	6.00	46.20
			6.90	53.00
			8.00	61.30
			9.00	68.70
			10.30	78.30
350	355.60	14"	6.40	55.10
			7.90	67.70
			9.00	76.90
			9.50	81.10
			12.00	102.00
			12.70	107.00
400	406.40	16"	7.90	77.60
			9.00	88.20
			9.50	93.00
			12.00	117.00
			12.70	123.00

Other Specifications : ASTM A500, AS1163, EN 10219

Dimension Tolerances

Outside Diameter : DN < 50MM : ±0.5MM
DN ≥ 50MM : ±1%

Thickness : < 4MM : +0.6MM, -0.5MM
4MM ≤ t ≤ 12MM : +15%, -12.5%
≥ 12MM : +15%, -1.5MM

Weight : ±10%

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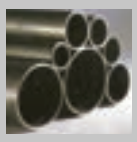

ROUND PIPE
A53 GR.A / A53 GR.B / A106 GR.B / API 5L GR.B

Outside Diameter		Schedule	Thickness mm	Weight kg/m
in	mm			
3/8"	17.1	40	2.31	0.84
		80	3.20	1.10
1/2"	21.3	40	2.77	1.27
		80	3.73	1.62
		160	4.78	1.95
3/4"	26.7	40	2.87	1.69
		80	3.91	2.20
		160	5.56	2.90
1"	33.4	40	3.38	2.50
		80	4.55	3.24
		160	6.35	4.24
1-1/4"	42.2	40	3.56	3.39
		80	4.85	4.47
		160	6.35	5.61
1-1/2"	48.3	40	3.68	4.05
		80	5.08	5.41
		160	7.14	7.25
2"	60.3	40	3.91	5.44
		80	5.54	7.48
		160	8.74	11.11
2-1/2"	73.0	40	5.16	8.63
		80	7.01	11.41
		160	9.53	14.92
3"	88.9	40	5.46	11.29
		80	7.62	15.27
		160	11.13	21.35
3-1/2"	101.6	40	5.74	13.54
		80	8.08	18.63
4"	114.3	40	6.02	16.07
		80	8.56	22.32
		160	13.49	33.54
5"	141.3	40	6.55	21.77
		80	9.53	30.97
		160	15.88	49.11
6"	168.3	40	7.11	28.26
		80	10.97	42.56
		160	18.26	67.56

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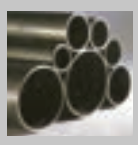

ROUND PIPE
A53 GR.A / A53 GR.B / A106 GR.B / API 5L GR.B

Outside Diameter		Schedule	Thickness mm	Weight kg/m
in	mm			
8"	219.1	40	8.18	42.55
		XS	12.70	64.64
		80	12.70	64.64
		160	23.01	111.27
10"	273.1	40	9.27	60.31
		XS	12.70	81.55
		80	15.09	96.01
12"	323.9	40	10.31	79.73
		XS	12.70	97.46
		80	17.48	132.08
14"	355.6	40	11.13	94.55
		XS	12.70	107.39
		80	19.05	158.10
16"	406.4	40	12.70	123.30
		XS	12.70	123.30
		80	21.44	203.53
18"	457.2	40	14.27	155.80
		XS	12.70	139.15
20"	508.0	40	15.09	183.42
		XS	12.70	155.12
24"	609.6	40	17.48	255.41
		XS	12.70	187.06

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SQUARE PIPE
TIS107 STKR400

Material of Grade	Chemical Composition (%)					Mechanical Properties		
	C Max	Si Max	Mn Max	P Max	S Max	Yield Strength N/mm2	Tensile Strength N/mm2	Elongation %
STKR 400	0.250	-	-	0.040	0.040	245	400	23
STKR 490	0.180	0.550	1.500	0.040	0.040	325	490	23

Nominal Size		Thickness MM	Weight KG/M
A	B	STD	STD
25	25	2.00	1.36
		2.30	1.53
32	32	2.30	2.04
		3.20	2.69
38	38	2.30	2.47
		3.20	3.29
40	40	1.60	1.88
		2.30	2.62
50	50	1.60	2.38
		2.30	3.34
		3.20	4.50
60	60	1.60	2.80
		2.30	4.06
		3.20	5.50
		4.00	6.71
75	75	1.60	3.64
		2.30	5.14
		3.20	7.01
		4.00	8.59
		4.50	9.55
80	80	2.30	5.50
		3.20	7.51
		4.50	10.30
90	90	2.30	6.23
		3.20	8.51
		4.00	10.48
		4.50	11.67
100	100	2.30	6.95
		3.20	9.52
		4.00	11.70
		4.50	13.10
		6.00	17.00
		9.00	24.10
125	125	3.20	12.00
		4.50	16.60
		5.00	18.30
		6.00	21.70 "
		9.00	31.10
		10.00	34.14
		12.00	39.67
150	150	4.50	20.10
		5.00	22.30
		6.00	26.40
		9.00	38.20

Nominal Size		Thickness MM	Weight KG/M
A	B	STD	STD
175	175	4.50	23.70
		5.00	26.20
		6.00	31.10
200	200	4.50	27.20
		6.00	35.80
		8.00	46.90
		9.00	52.30
		12.00	67.90
250	250	5.00	38.00
		6.00	45.20
		8.00	59.50
		9.00	66.50
		12.00	46.80
300	300	4.50	41.30
		6.00	54.70
		9.00	80.60
		12.00	106.00

Other Specifications : ASTM A500, AS1163, EN 10219

Dimension Tolerances

Length of Side : A,B ≤ 100MM : ±1.5MM
A,B > 100MM : ±1.5%

Thickness : < 3.00MM : ±0.30MM
≥ 3.00MM : ±10%

Weight : ±10%

STEELMAX INTERNATIONAL CO., LTD.

RECTANGULAR PIPE
TIS107 STKR400

Material of Grade	Chemical Composition (%)					Mechanical Properties		
	C Max	Si Max	Mn Max	P Max	S Max	Yield Strength N/mm2	Tensile Strength N/mm2	Elongation %
STKR 400	0.250	-	-	0.040	0.040	245	400	23
STKR 490	0.180	0.550	1.500	0.040	0.040	325	490	23

Nominal Size		Thickness MM	Weight KG/M
A	B	STD	STD
60	30	1.60	2.13
		2.30	2.98
		3.20	3.99
75	45	1.60	2.88
		2.30	4.06
		3.20	5.50
100	50	2.30	5.14
		3.20	7.01
		4.50	9.55
		6.00	12.80
125	75	2.30	6.95
		3.20	9.52
		4.00	11.70
		4.50	13.10
		6.00	17.00
150	50	3.20	9.53
		4.00	11.75
		4.50	13.10
150	75	3.20	10.80
		4.50	15.08
		6.00	19.82
150	80	4.50	15.20
		5.00	16.80
		6.00	19.80
150	100	3.20	12.00
		4.50	16.60
		6.00	21.70
		9.00	31.10
200	100	4.50	20.10
		6.00	26.40
		9.00	38.20
200	150	4.50	23.70
		6.00	31.10
		9.00	45.30
250	150	6.00	35.80
		9.00	52.30
		12.00	67.90
300	200	6.00	45.20
		9.00	66.50
		12.00	86.80
350	150	6.00	45.20
		9.00	66.50
		12.00	86.80

Nominal Size		Thickness MM	Weight KG/M
A	B	STD	STD
400	200	6.00	54.70
		9.00	80.60
		12.00	106.00

Other Specifications : ASTM A500, AS1163, EN 10219

Dimension Tolerances

Length of Side : A,B ≤ 100MM : ±1.5MM
A,B > 100MM : ±1.5%

Thickness : < 3.00MM : ±0.30MM
≥ 3.00MM : ±10%

Weight : ±10%

STEELMAX INTERNATIONAL CO., LTD.

STEELMAX INTERNATIONAL CO., LTD.

LIGHT LIP CHANNEL
TIS1228

Dimensions	Thickness	Weight	Cross Sectional Area	Center of Gravity		Secondary Moment of Area		Radius of Gyration of Area		Modulus of Section		Center of Shear	
H X A X C	mm	kg/m	cm^2	cm		cm^4		cm		cm^3		cm	
mm	t		a	Cx	Cy	Ix	Iy	Ix	Iy	Zx	Zy	Sx	Sy
60 X 30 X 10	1.60	1.63	2.072	0	1.06	11.60	2.56	2.37	1.11	3.88	1.32	2.50	0
	2.00	1.99	2.537	0	1.06	14.00	3.01	2.35	1.09	4.65	1.55	2.50	0
	2.30	2.25	2.872	0	1.06	15.60	3.32	2.33	1.07	5.20	1.71	2.50	0
75 X 45 X 15	1.60	2.32	2.952	0	1.72	27.10	8.71	3.03	1.72	7.24	3.13	4.10	0
	2.00	2.86	3.637	0	1.72	33.00	10.50	3.01	1.70	8.79	3.76	4.00	0
	2.30	3.25	4.137	0	1.72	37.10	11.80	3.00	1.69	9.90	4.24	4.00	0
100 X 50 X 20	1.60	2.88	3.672	0	1.87	58.40	14.00	3.99	1.95	11.70	4.47	4.50	0
	2.00	3.56	4.537	0	1.86	71.40	16.90	3.97	1.93	14.30	5.40	4.40	0
	2.30	4.06	5.172	0	1.86	80.70	19.00	3.95	1.92	16.10	6.06	4.40	0
	2.80	4.87	6.205	0	1.88	99.80	23.20	3.96	1.91	20.00	7.44	4.30	0
	3.20	5.50	7.007	0	1.86	107.00	24.50	3.90	1.87	21.30	7.81	4.40	0
	4.00	6.71	8.548	0	1.86	127.00	28.70	3.85	1.83	25.40	9.13	4.30	0
	4.50	7.43	9.469	0	1.86	139.00	30.90	3.82	1.81	27.70	9.82	4.30	0
125 X 50 X 20	2.30	4.51	5.747	0	1.69	137.00	20.60	4.88	1.89	21.90	6.22	4.10	0
	3.20	6.13	7.807	0	1.68	181.00	26.60	4.82	1.85	29.00	8.02	4.00	0
	4.00	7.50	9.548	0	1.68	217.00	33.10	4.77	1.81	34.70	9.38	4.00	0
	4.50	8.32	10.590	0	1.68	238.00	33.50	4.74	1.78	38.00	10.00	4.00	0
150 X 50 X 20	2.30	4.96	6.322	0	1.55	210.00	21.90	5.77	1.86	28.00	6.33	3.80	0
	3.20	6.76	8.607	0	1.54	280.00	28.30	5.71	1.81	37.40	8.19	3.80	0
	4.50	9.20	11.720	0	1.54	368.00	35.70	5.60	1.75	49.00	10.50	3.70	0
150 X 75 X 20	3.20	8.01	10.210	0	2.51	366.00	76.40	5.99	2.74	48.90	15.30	5.10	0
	4.00	9.85	12.550	0	2.51	445.00	91.00	5.95	2.69	59.30	18.20	5.80	0
	4.50	11.00	13.970	0	2.50	489.00	99.20	5.92	2.66	65.20	19.80	6.00	0
150 X 75 X 25	3.20	8.27	10.530	0	2.66	375.00	83.60	5.97	2.82	50.00	17.30	6.40	0
	4.00	10.20	12.950	0	2.65	455.00	99.80	5.93	2.78	60.60	20.60	6.30	0
	4.50	11.30	14.420	0	2.65	501.00	109.00	5.90	2.75	66.90	22.50	6.30	0
200 X 75 X 20	3.20	9.27	11.810	0	2.19	716.00	84.10	7.79	2.67	71.60	15.80	5.40	0
	4.00	11.40	14.550	0	2.19	871.00	100.00	7.74	2.62	87.10	18.90	5.30	0
	4.50	12.70	16.220	0	2.19	963.00	109.00	7.71	2.60	96.30	20.60	5.30	0
200 X 75 X 25	3.20	9.52	12.130	0	2.33	736.00	92.30	7.70	2.76	73.60	17.80	5.70	0
	4.00	11.70	14.950	0	2.32	895.00	110.00	7.74	2.72	89.50	21.30	5.70	0
	4.50	13.10	16.670	0	2.32	990.00	121.00	7.61	2.69	99.00	23.30	5.60	0
250 X 75 X 25	4.50	14.90	18.920	0	2.07	1,690.00	129.00	9.44	2.62	135.00	23.80	5.10	0

Note : Special length can be produced.

Dimension Tolerances

Length of Side	A	:	±1.5MM
	H < 150MM	:	±1.5MM
	150MM ≤ H < 300MM	:	±2MM
	H ≥ 300MM	:	±3MM
	C	:	±2MM
Thickness (t)	1.6MM	:	±0.22MM
	2.0MM and 2.3MM	:	±0.25MM
	2.8MM	:	±0.28MM
	3.2MM	:	±0.30MM
	4.0MM and 4.5MM	:	±0.45MM
Weight		:	±10%

Checker Plate (SS400)

Available Size 4' X 8' : 2MM, 2.8MM, 3.8MM, 4.3MM, 5.8MM, 8.8MM

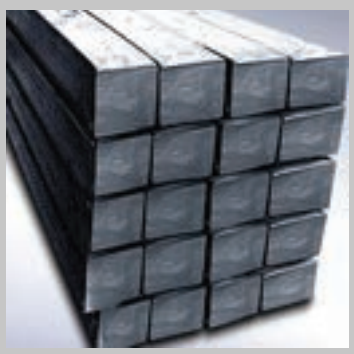
Available Size 5' X 10' : 3MM, 3.8MM, 4.3MM, 5.8MM, 8.8MM

Round Bar

Available Size : 6MM - 400MM

Available Length : 6M or Cut to length

Available Spec : SGD-400, SS400, S45C, SCM440, SCM415, SKD11



Square Bar

Available Size : 3/16" X 3/16" - 75 X 75MM

Available Length : 6M

Available Spec : SS400, S50C

Round Bar (SR24)

Available Size : 6MM, 9MM, 12MM, 15MM, 19MM, 25MM

Available Length : 10M or Cut to length

Deformed Bar (SD40,SD40T)

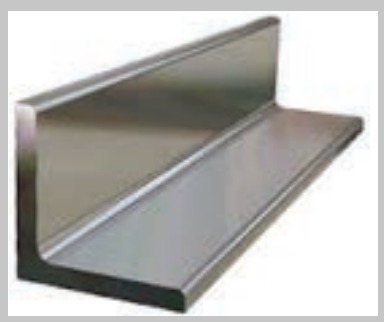
Available Size : 10MM, 12MM, 16MM, 20MM, 25MM, 28MM, 32MM

Available Length : 10M, 12M or Cut to length

STEELMAX INTERNATIONAL CO., LTD.

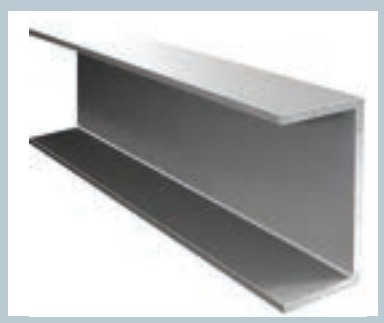
Plate

Available Thickness : 0.4MM - 100MM
Available Width & Length : 4' X 8', 5' X 10', 5' X 20'
Available Spec : TP304, TP304L, TP310S, TP316L, TP321,
2205/UNS S32205,
2507/UNS S32750,
2304/UNS S32304



Angle

Available Size : INCH Size 3/4"X 3/4"- 4"X 4"
MM Size 20 X 20MM - 100 X 100MM
Available Thickness : 3MM, 4MM, 5MM, 6MM, 8MM, 9MM, 10MM
Available Length : 6M
Available Spec : TP304, TP304L, TP316L



Channel

Available Size : 80 X 40MM, 100 X 50MM, 130 X 65MM,
150 X 75MM
Available Thickness : 5MM, 6MM
Available Length : 6M
Available Spec : TP304, TP316L

Round Bar

Available Size : 1/8" - 18"
Available Length : 6M or Cut to length
Available Spec : TP304, TP304L,TP316L,
TP310S, TP431, TP904

STEELMAX INTERNATIONAL CO., LTD.

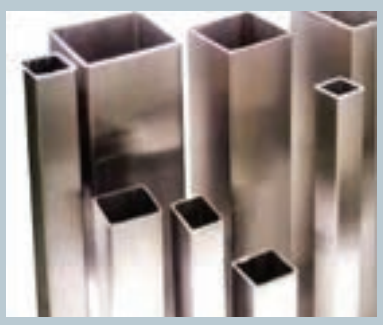
STAINLESS STEEL

Square Bar

Available Size : 3/16"X 3/16"- 4"X 4"
Available Length : 6M
Available Spec : TP304

Pipe

Available Size : ERW 1/2" - 24"
SMLS 1/4" - 10"
Available Thickness : SCH10, SCH40, SCH80
Available Length : 6M
Available Spec : TP304/ TP304L,TP316L,
TP310S, TP904L



Square Pipe & Rectangular Pipe

Available Size : Square Pipe 1/2" X 1/2" - 4" X 4"
Rectangular Pipe 25 X 12MM - 120 X 80MM
Available Thickness : 1MM, 1.2MM, 1.5MM, 2MM, 3MM
Available Length : 6M
Available Spec : TP304

Checker Plate

Available Thickness : 1.5MM, 2MM, 3MM, 4MM, 4.5MM
(Excluding Pattern)
Available Width & Length : 4' X 8', 5' X 10'
Available Spec : TP304

STEELMAX INTERNATIONAL CO., LTD.

SPECIFICATION

Classifications			Mechanical Properties										
			Yield Strength Minimum (MPa)			Tensile Strength (MPa)	Elongation Minimum (%)			Bending Angle	Impact	
Standard		Grade	t ≤ 16	t >16 t ≤ 40	t > 40 t ≤ 100		t ≤ 16	t >16 t ≤ 50	t > 50 t ≤ 100		Temp. (°C)	Absorb Energy Minimum (J)
THAILAND	TIS 528	HR1	-			-	-			-	-	-
		HR2	-			270-430	-			-	-	-
		HR3	-			270-370	-			-	-	-
		HR4	-			270-390	-			-	-	-
JAPANESE INDUSTRIAL STANDARD (JIS)	JIS G 3101	SS400	245	235	215	400-510	17	21	23	180°	-	-
		SS490	285	275	255	490-610	15	19	21			
	JIS G 3106 (TIS 1499)	SM400A	245	235	215	400-510	18	22	24	-	-	-
		SM400B									0	27
		SM400C									0	47
		SM490A	325	315	295	490-610	17	21	23	-	-	-
		SM490B									0	27
		SM490C									0	47
		SM490YA	365	355	335	490-610	15	19	21	-	-	-
		SM490YB									0	27
	JIS G 3136	SN400A	235		215	400-510	17	21	23	-	-	-
		SN400B	235-355		215-335		18	22	24		0	27
		SN400C[1][2]										
		SN490B	325-445		295-415	490-610	17	21	23			
		SN490C[1][2]										
EUROPEAN	EN10025 (CE Mark)	S235JR	235	225	215	360-510	$L_0=5.65\sqrt{S_0}$	26 (L) 24 (T)	25 (L) 23 (T)	24 (L) 22 (T)	-	20	27
		S235JO										0	
		S235J2										-20	
		S275JR	275	265	255	410-560		23 (L) 21 (T)	22 (L) 20 (T)	21 (L) 29 (T)	-	20	27
		S275JO										0	
		S275J2										-20	
		S355JR	355	345	335	470-630		22 (L) 20 (T)	21 (L) 19 (T)	20 (L) 18 (T)	-	20	27
		S355JO										0	
		S355J2										-20	
		S355K2										-20	40
AS/NZS	AS/NZS 3678	200	200	-	-	300 min	$L_0=5.65\sqrt{S_0}$	24			-	-	-
		250	260	250	250	410 min		22				-	-
		250L 15										-15	27
		300	310	300	300	430 min		21				-	-
		300L 15										-15	27
		350	360	350	350	450 min		20				-	-
		350L 15										-15	27
AMERICAN STANDARD (ASTM)	A36/A36M	A36	250			400-550	20			-	-	-	
	A283/A283M	A283Gr.A	165			310-415	27			-	-	-	
		A283Gr.B	185			345-450	25						
		A283Gr.C	205			380-515	22						
		A283Gr.D	230			415-550	20						
	A285/A285M	A285Gr.A	165			310-450	27			-	-	-	
		A285Gr.B	185			345-485	25						
		A285Gr.C	205			380-515	23						
	A516/A516M	A516Gr.55	205			380-515	23			-	-	-	
		A516Gr.60	220			415-550	21						
		A516Gr.65	240			450-585	19						
		A516Gr.70	260			485-620	17						
	A572/A572M	A572Gr.42	290			415 min	20			-	-	-	
		A572Gr.50	345			450 min	18						
SHIP BUILDING	ABS, BV, CCS, DNV, GL, KR, LR, Class	A	235			400-520	$L_0=5.65\sqrt{S_0}$	22			-	-	-
		B										0	27 (L)
		D[3]										-20	20 (T)

Remark : (1) For SN400C and SN490C shall be test the Through-thickness characteristics with contraction average of three tested values 25% minimum.
(2) Applicable thickness shall be with 16 mm or over, up to 100 mm incl.
(3) D grade for Class NK only.
(4) Other than specification of EN10025, AS/NZS and Ship building use gauge length = 200 mm

SPECIFICATION

Classifications			CHEMICAL COMPOSITION by Ladle (maximum value)														
Standard		Grade	C	Si	Mn	P	S	Nb	V	Mo	Cu	Cr	Ni	Al	Ti	Pcm	CEQ
JAPANESE INDUSTRIAL STANDARD (JIS)	TIS 528	HR1	0.15	-	0.60	0.050	0.050	-	-	-	-	-	-	-	-	-	-
		HR2	0.12	-	0.50	0.040	0.040										
		HR3	0.10	-	0.45	0.030	0.030										
		HR4	0.08	-													
	JIS G 3101	SS400	-	-	-	0.050	0.050	-	-	-	-	-	-	-	-	-	-
		SS490															
	JIS G 3106 (TIS 1499)	SM400A	0.23	-	2.5xCmin	0.035	0.035	-	-	-	-	-	-	-	-	-	0.38
		SM400B	0.20	0.35	0.60-1.40[1]												
		SM400C	0.18		1.40												
		SM490A	0.20	0.55	1.60												
		SM490B, C	0.18														
		SM490YA,YB	0.20														
	JIS G 3136	SN400A	0.24	-	-	0.050	0.050	-	-	-	-	-	-	-	-	-	-
		SN400B	0.20	0.35	0.60-1.40[1]	0.030	0.015									0.26	0.36
		SN400C				0.020	0.008										
		SN490B	0.18	0.55	1.60	0.030	0.015									0.29	0.44
		SN490C				0.020	0.008										
AMERICAN STANDARD (ASTM)	A36/A36M	A36	0.25	0.15-0.40[1]	0.80-1.20[1]	0.040	0.050	-	-	-	0.20[7]	-	-	-	-	-	-
	A283/A283M	Gr.A	0.14	0.15-0.40[1]	0.90	0.035	0.040	-	-	-	0.20[7]	-	-	-	-	-	-
		Gr.B	0.17														
		Gr.C,D	0.24														
	A285/A285M	Gr.A	0.17	-	0.90	0.035	-										
		Gr.B,C	0.22														
	A516/A516M	Gr.55	0.18	0.15-0.40[1]	0.60-0.90[1][2]	0.035	0.035	-	-	-	-	-	-	-	-	-	-
					0.60-1.20[1][3]												
		Gr.60	0.21		0.60-0.90[1][2]												
					0.85-1.20[1][3]												
		Gr.65	0.24		0.85-1.20[1]												
		Gr.70	0.27														
	A572/A572M	Gr.42	0.21	0.40	1.35	0.040	0.050	[8]	[8]	-	0.20[7]	-	-	-	-	-	-
		Gr.50	0.23														
		Gr.55	0.25														
EUROPEAN	EN10025 (CE Mark)	S235JR	0.17	-	1.40	0.035	0.035	-	-	0.012	0.55	-	-	-	-	-	0.35
		S235JO				0.030	0.030										
		S235J2				0.025	0.025			-							
		S275JR	0.21	-	1.50	0.035	0.035	-	-	0.012	0.55	-	-	-	-	-	-
		S275JO	0.18			0.030	0.030										
		S275J2				0.025	0.025			-							
		S355JR	0.24	0.55	1.60	0.035	0.035	-	-	0.012	0.55	-	-	-	-	-	0.45
		S355JO	0.20			0.030	0.030										
		S355J2				0.025	0.025			-							
		S355K2															
AS/NZS	AS/NZS 3678	200	0.15	0.35	0.60	0.030	0.030	[9]	[9]	0.10	0.40	0.30	0.50	0.10	0.040	-	0.25
		250, 250L 15	0.22	0.55	1.70	0.040	0.030										0.44
		300, 300L 15						[10]	[10]	0.35							0.48
		350, 350L 15															
SHIP BUILDING	ABS, BV, CCS, DNV, GL, KR,	A	0.21	0.50	2.5xC min	-	-	-	-	-	-	-	-	-	-	-	-
		B		0.35	0.80_{min}[5][6]												
		D[4]			0.60_{min}												

Remark : (1) Value in range.
(2) For thickness ≤ 12.5 mm.
(3) For thickness > 12.5 mm.
(4) For Class NK only.
(5) Minimum 0.60% when the steel is impact tested.
(6) The value of C + Mn / 6 is not exceed 0.40%.
(7) Cu min, % when copper steel is specified.
(8) Alloy type according to ASTM A572 standard.
(9) Nb + V : 0.030% max.
(10) V : 0.10% max. Nb + V : 0.15% max.

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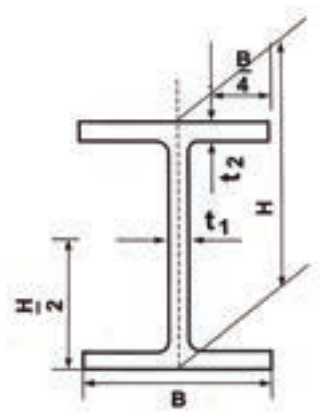
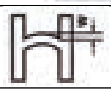
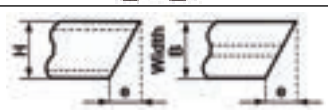
TIS 1227-1996 H - BEAMS					
Dimension					**Remark**
Depth (H)		H < 380 380 ≤ H < 580 ≥ 580		±2.0 ±3.0 ±4.0	
With (B)		B < 95 95 ≤ B < 190 ≥ 190		±2.0 ±2.5 ±3.0	
Thickness (t_1, t_2)	t_1	t_1 < 16 16 ≤ t_1 < 25 25 ≤ t_1 <40		±0.7 ±1.0 ±1.5	
	t_2	t_2 < 16 16 ≤ t_2 < 25 25 ≤ t_2 < 40		±1.0 ±1.5 ±1.7	
Length (L)		L ≤ 7m.		±40 0	
		L > 7m.		40 + (no. of meter of L-7) x 5 0	
Squareness (T)		H ≤ 300	B ≤ 150 B > 150	≤ 1.5 ≤ 1.0% of B	
		H > 300	B ≤ 125 B > 125	≤ 1.5 ≤ 1.2% of B	
Bend		H ≤ 300 H > 300		≤ 0.15 of L ≤ 0.15 of L	To be applied to bend such as sweep and camber
Eccentricity (S)		H ≤ 300, B ≤ 200 H > 300, B > 200		±2.5 ±3.5	
Concavity of web (W)		H < 400 400 ≤ H < 600 H ≥ 600		2.0 2.5 3.0	
Squareness of cut end (e)		H ≤ 187.5 B ≤ 187.5 H > 187.5 B > 187.5		≤ 3.0 mm. ≤ 3.0 mm. ≤ 1.6% of H ≤ 1.6% of B	
Mass (kg/m.)		t < 10		±5%	1. The maximum thickness shall be apply 2. These tolerances shall apply in the purchase of a single set of structural steel of the same size and thickness comprising not less than 10 pieces and mass of not less than 1,000 kg.
		t ≥ 10		±4%	

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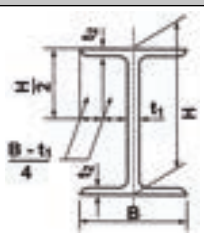
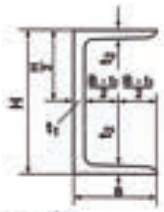
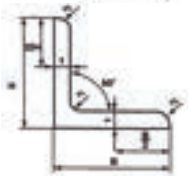
TIS 1227-1996 I - BEAMS, CHANNEL AND ANGLES				
Dimension			**Tolerance**	**Remark**
Depth (H)	H < 100 100 ≤ H < 200 200 ≤ H < 400 H ≥ 400		±1.5 ±2.0 ±3.0 ±4.0	
Leg Length (H or B)	B < 50 50 ≤ B < 100 100 ≤ B < 200 B ≥ 200		±1.5 ±2.0 ±3.0 ±4.0	
Thickness (t, t_1, t_2)	H < 130	t < 6.3 6.3 ≤ t < 10 10 ≤ t < 16 t ≥ 16	±0.6 ±0.7 ±0.8 ±1.0	
	H ≥ 130	t < 6.3 6.3 ≤ t < 10 10 ≤ t < 16 16 ≤ t < 25 t ≥ 25	±0.7 ±0.8 ±1.0 ±1.2 ±1.5	
Length (L)	L ≤ 7m.		+40 0	
	L > 7m.		40 + (no. of meter of L-7) x 5 0	
Squareness Out-of-square (T)	I-Beam		2.0% of width B	
	Channel, Angle		2.5% of Flange B	
Bend	I-Beam		0.20% of L	To be applied to bend such as sweep and camber
	Channel, Angle		0.30% of L	
Eccentricity, Web-off-center (S)	-		Not specified	
Mass (kg/m.)	t < 10		±5%	1. Thicker nominal values shall be applied. 2. To be applied to one lot of the same size (1 t or over), provided that, when the number of pieces cowesponding to 10 pieces, it shall be applied to each lot of 10 or more pieces.
	t ≥ 10		±4%	

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สูตรคำนวณน้ำหนักเหล็ก

เหล็กแผ่น = 7.85 X หนา (มิลลิเมตร) X กว้าง (เมตร) X ยาว (เมตร)

ตัวอย่าง PL 8MM X 5' X 20' (1524 X 6096MM)

วิธีคำนวณ 7.85 X 8 X 1.524 X 6.096 = 583Kgs.

Note : ความกว้างและความยาว (มิลลิเมตร) ÷ 1000 ให้เป็น เมตร

1' = 304.8MM 4' = 1219MM 5' = 1524MM

8' = 2438MM 10' = 3048MM 20' = 6096MM

เหล็กแบน = 7.85 X กว้าง (มิลลิเมตร) X หนา (มิลลิเมตร) ÷ 1000 X ยาว (เมตร)

ตัวอย่าง FB 100 X 6MM X 6M (6000MM)

วิธีคำนวณ (7.85 X 100 X 6) ÷ 1000 X 6 = 28.26Kgs.

Note : ความกว้างและความหนา (มิลลิเมตร) ÷ 1000 ให้เป็น เมตร

ตัวอย่าง FB 100 X 6MM X 4250MM

วิธีคำนวณ (7.85 X 100 X 6) ÷ 1000 X 4.250 = 20.02 Kgs.

Note : ความกว้างและความหนา (มิลลิเมตร) ÷ 1000 ให้เป็น เมตร

สี่เหลี่ยมตัน = 7.85 X ด้าน (มิลลิเมตร) X ด้าน (มิลลิเมตร) ÷ 1000 X ยาว (เมตร)

ตัวอย่าง SQ BAR 50 X 50MM X 6M

วิธีคำนวณ (7.85 X 50 X 50) ÷ 1000 X 6M = 117.75 Kgs.

Note : ด้าน (มิลลิเมตร) ÷ 1000 ให้เป็น เมตร

เพลาขาว = 6.17 X OD (มิลลิเมตร) X OD (มิลลิเมตร) ÷ 1000 X ยาว (เมตร)

ตัวอย่าง RB 20 X 6M

วิธีคำนวณ (6.17 X 20 X 20) ÷ 1000 X 6 = 14.81 Kgs.

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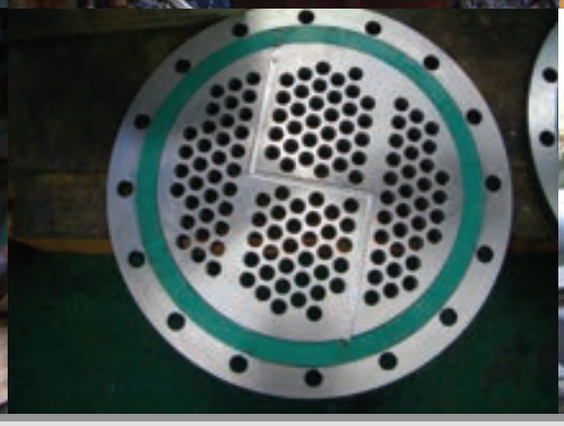

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