

Version 4 (June 2018)  
include new 2" Pipe Line

Welded H-Beam  
Steel Pipe

# Steel Structures



Prime Metal Co., Ltd.  
Yangon, Myanmar

## Greetings



View in October 2016

### Mingalabar!

[Prime Metal Company Limited](#), based in Yangon, is the first Welded H-Beam Factory in South East Aisa. We are a Joint Venture Company between Myanmar and Korea whose investments have been approved by the Myanmar Investment Commission (MIC) in May 2013 and by the Korean Government in December 2013 respectively.

Prime Metal has been invested U\$20 million in Machineries, Heavy Structure Buildings, and Utilities at Mingalardon Industrial Zone. The Machineries are newly designed and supplied by Dongbu EMC, Korea, who has over 30 years of experience in Welded H-Beam production. Another U\$10 – 15 million of Raw Materials will be procured for projected production capacity of 100,000MT composed of 50,000MT of Welded H-Beam and 50,000MT of Steel Pipe.

After commissioning in end of 2015, we made profit continuously in 2016 and 2017. In 2018, we achieved great A grade production yield of H-Beam more than 95% from 85% in 2017. We also invested 2" GI Pipe Line for the market needs. Due to high demands, we have plan to invest more for 2" GI Pipe Lines with one more Slitter in 2018 or early 2019.

We aspire to contribute to the needs of construction and industrial sectors in Myanmar and its neighbor countries. Our management deeply appreciates your support, and pledges to reciprocate through our vision of "The Standard Product", "Transparent Management" and "to train prospective engineers for the future industries in Myanmar"

Thank you and sincerely,

Yoon, Hun Sup  
Managing Director



Under Building  
Extension  
For  
Additional  
2" Pipe Lines  
& Mini Slitter  
(June 15, 2018)

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## Slitter Line View



Coil Yard



35MT OverHead Crane



Slitter View



Knife View



Slit Coil



Slit Coil at H-Beam Line

## Welded H-Beam Line View



H-Beam Line view From Uncoiler



HF Welder



Control of Welding



Saw Cutting



Stacking



Welded H-Beam

## 5" Pipe Line & Others



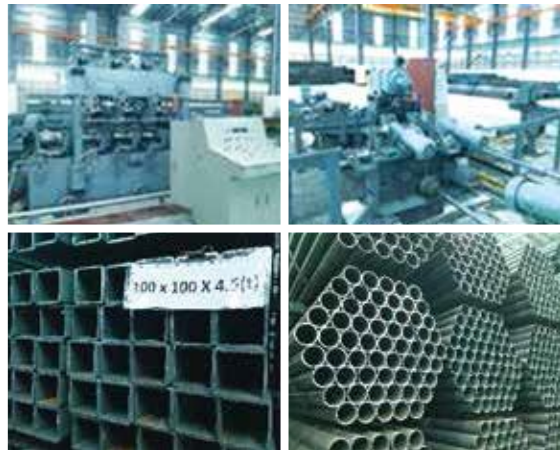
Pipe Line View



Forming ,Welding, Sizing.



Welding



Straightener, End Facer, Pipes



Other Equipments



Testing Equipments

# Factory View

## 2" Pipe Line



2" Pipe Line View



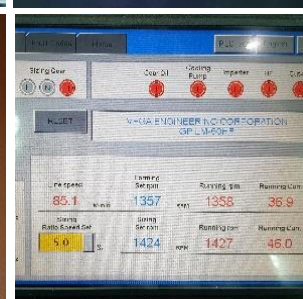
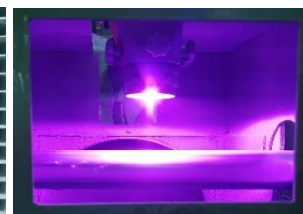
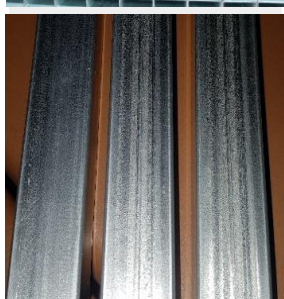
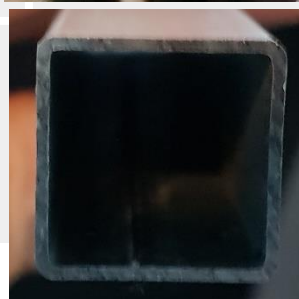
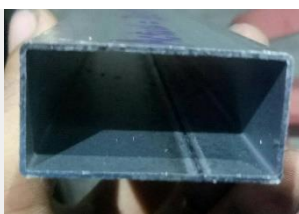
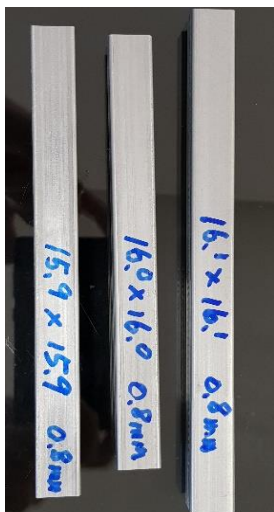
View from Cold Saw



Welding, Zn Spray



View from Accumulator



## Company Briefing

### Investment

(Million USD)			
Myanmar	Korea	Loan	Total
10.0	10.0	-	20.0

### Facilities

Description	Specification	Capacity	Maker
Slitter Line	Width 1,650 mm Thickness 2.0 - 12.7 mm	100,000 MT/Y	Dongbu, Korea
Welded H-Beam Line	Thickness : 2.3 – 12.0 mm Width : 50 – 450 mm	50,000 MT/Y	
5" Pipe Line	Thickness : 1.2 – 7.0 mm Diameter : 48.6 mm -141.3 mm	50,000 MT/Y	
2" Pipe Line	Thickness : 0.5 – 3.2 mm Diameter : 19.0 mm - 63.5 mm	15,000 MT/Y	Vega Eng, Taiwan

Additional Investment Plan (2018-early 2019) : 2 Sets of 2" Pipe Line, Mini Slitter Line

### Raw Material (HR Coil, GI Coil)

Thickness	Width	Weight	Inner Dia.	Outer Dia.
0.5 – 12 mm	1,650 mm Max	35 MT Max	762 mm Max	2,100 mm Max

#### HR Standard Specification

Spec	Chemical Composition (Wt%)					Yield (N/mm <sup>2</sup> )	Tensile (N/mm <sup>2</sup> )	Elongation (%)	
	C	Si	Mn	P	S			No 5	No 1A
SS400	-	-	-	0.050	0.050	245 min	400-510	21	17
SM490	0.200	0.550	1.650	0.035	0.035	325 min	490-610	22	17



## HRC Specifications

Application	Designation	t	Physical Property (Min)			Chemical Composition (Max)					Remark
			YS(Mpa)	TS(Mpa)	El(%)	C	Si	Mn	P	S	
<b>Mild Steel</b> (JIS G3131)	<b>SPHC</b>	≤ 14	-	270	27-31	0.12	-	0.60	0.045	0.035	
	SPHD	≤ 14	-	270	30-39	0.10	-	0.45	0.035	0.035	
	SPHE	≤ 6	-	270	32-41	0.08	-	0.40	0.030	0.030	
<b>General Structure</b> (JIS G3101)	SS330	≤ 16	205	330-430	26	-	-	-	0.050	0.050	
	<b>SS400</b>		245	400-510	21	-	-	-	0.050	0.050	
	SS490		285	490-610	19	-	-	-	0.050	0.050	
	SS540		400	540	16	0.30	1.60	-	0.040	0.040	
(ASTM A36)	<b>A36</b>	< 20	250	400-550	23	0.25	0.40	-	0.040	0.050	
(ASTM A283)	A283C	-	205	380-515	25	0.24	0.40	0.90	0.035	0.040	
(ASTM A1011) (ASTM A1018 Gr36, Gr40, Gr50 6≤t≤25)	SS Gr 33	< 6	230	360	18-23	0.25	-	0.90	0.035	0.040	Ni, Cr, Mo, V, Nb, Ti
	SS Gr 40		275	380	15-21	0.25	-	0.90	0.035	0.040	
	HS Gr 50		340	450	20-22	0.23	-	1.35	0.040	0.040	
	HS Gr 55		380	480	18-20	0.25	-	1.35	0.040	0.040	
EN10025	S235JR	≤ 16	235	360-510	15-24	0.17	-	1.40	0.035	0.035	N, Cu
	S275JR		275	430-580	13-21	0.21	-	1.50	0.035	0.035	
	S355JR		355	510-680	12-20	0.24	0.55	1.60	0.035	0.035	
<b>Welded Structure</b> (JIS G3106)	<b>SM400A</b>	≤ 16	245	400-510	18-23	0.23	-	2.5xC	0.035	0.035	
	SM400B		245	400-510	18-23	0.20	0.35	1.50	0.035	0.035	0°C, 27J
	<b>SM490A</b>		325	490-610	17-22	0.20	0.55	1.65	0.035	0.035	
	SM490B		325	490-610	17-22	0.18	0.55	1.65	0.035	0.035	27J
	SM490YA		365	490-610	15-19	0.20	0.55	1.65	0.035	0.035	
	SM490YB		365	490-610	15-19	0.20	0.55	1.65	0.035	0.035	27J
	SM520 B		365	520-640	15-19	0.20	0.55	1.65	0.035	0.035	27J
<b>Pipe &amp; Tube</b> (JIS G3132)	SPHT1	≤ 13	-	270	30-37	0.10	0.35	0.50	0.040	0.040	
	<b>SPHT2</b>		-	340	25-32	0.18	0.35	0.60	0.040	0.040	
	<b>SPHT3</b>		-	410	20-27	0.25	0.35	0.90	0.040	0.040	
	SPHT4		-	490	15-22	0.30	0.35	1.00	0.040	0.040	
<b>Corrosion Resisting</b>	SPA-H	≤ 16	355	490	15-22	0.12	0.75	0.60	0.150	0.035	G3125
	A242	≤ 20	345	480	21	0.15	-	1.00	0.150	0.050	ASTM
<b>Automobile Structure</b> (JIS G3113)	SAPH310	< 8	185	310	33-41	-	-	-	0.040	0.040	
	SAPH370	< 8	225	370	32-38	-	-	-	0.040	0.040	
	SAPH400	< 6	255	400	31-37	-	-	-	0.040	0.040	
	SAPH440	< 6	305	440	29-35	-	-	-	0.040	0.040	
<b>Automobile Structure HS</b> (JIS G3134)	SPFH540	< 6	355	540	21-24	-	-	-	-	-	
	SPFH590	< 6	420	590	19-22	-	-	-	-	-	
	SPFH590Y	< 4	325	590	22-24	-	-	-	-	-	
<b>SAE</b>	1006					0.08	-	0.45	0.040	0.050	Si to specify ≤0.1, ≤0.25, ≤0.35
	1008					0.10	-	0.50	0.040	0.050	
	1010					0.13	-	0.60	0.040	0.050	
	1012					0.15	-	0.60	0.040	0.050	
	1015					0.18	-	0.60	0.040	0.050	
	1018					0.20	-	0.90	0.040	0.050	
	1020					0.23	-	0.60	0.040	0.050	
- API for Oil and Gas, ASTM A516 and JIS SG255-365 for Gas Cylinder											

## GI Standard Specifications

Class	Specification		Mechanical(N/mm <sup>2</sup> )		
	JIS G3302	(equiv to ASTM 89/95)	YP	TS	EI
<b>1) CR Base</b>					
Commercial	SGCC	A526/A653-CQ	-	-	-
Lock-Forming	SGCD 1	A527/A653-LFQ	-	270	36-38
Drawing	SGCD 2	A528/A653-DQ	-	270	38-40
Deep Drawing	SGCD 3	A642/A653-DQSK	-	270	40-42
Structural	SGC 340	A446-Gr B/A653-SQ255	245	340	20
	SGC 400	A446-Gr C/A653-SQ275	295	400	18
	SGC 440	A446-Gr D/A653-SQ340	335	440	18
	SGC 490	A446-Gr F	365	490	16
	SGC 570	A446-Gr E/A653-SQ550	560	570	-
<b>2) HR Base</b>					
Commercial	SGHC	A526-H/A653-CQ	205	270	-
Look-Forming		A527-H/A653-LFQ			
Structural	SGH 340	-/A653-H G230	245	340	20
	SGH 400	- /A653-H G255	295	400	18
	SGH 440	A446-DH/A653-H G275	335	440	18
	SGH 490	A446-FH/A653-H G340	365	490	18
	SGH 540	A446-EMH G550		540	-

## Zinc Coating Specification

Symbol	JIS	Z06	Z08	Z09	Z10	Z12	Z18	Z20	Z22	Z25	Z27	Z35
	ASTM			G 30		G 40	Z60				G 90	G 115
Coating Weight	g/m <sup>2</sup>	60	80	90	100	120	180	200	220	250	275	350
Coating Thickness	mm	0.013	0.017		0.021	0.026	0.034	0.040	0.043	0.049	0.054	

# Welded H-Beam

## Product Value



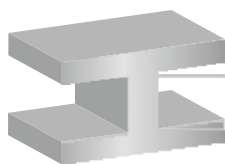
**L**ighter, Stronger, Good Surface

Products	Size (mm)	Section Modulus (Cm <sup>3</sup> )	Unlt Weight (Kg/m)	Ratio (Weight)
Welded H-Beam	150 x 75 x 3.2 x 4.5	57.6	8.84	<b>1.00</b>
Rolled H-Beam	125 x 60 x 4.5 x 6.5	54.9	10.5	<b>1.19</b>
I-Beam	100 x 75 x 5.0 x 8.0	56.5	12.9	<b>1.46</b>
Channel	125 x 65 x 6.0 x 8.0	68.0	13.4	<b>1.52</b>

## Quick Delivery

Products	Delivery to Site
Welded H-Beam	WithIn 3 - 7 days after order
Rolled H-Beam	Average 4 months (Import)

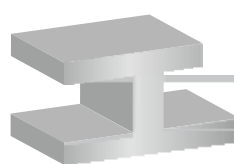
## Any Shape



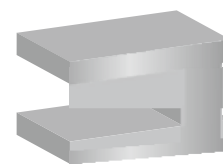
H-Beam



T-Bar



Unequal Beam

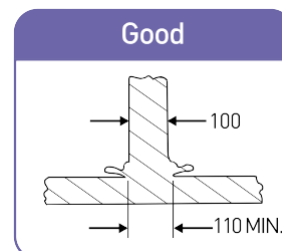
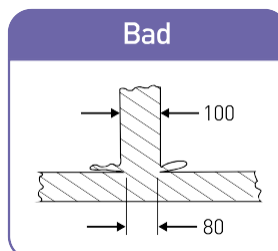


Web-off Center Beam

## Good Welding Performance

Upset Designed  
High Frequency Welder

Weld Metal Rate : 130% or higher



## Product Information

### Size Range

Description	Size Range
Width (Web/Flange)	50 - 450 mm
Thickness	2.3 - 12.0 mm
Length	Max. 18 M

### Grade by Chemical Composition

(%, Max)

Spec	Grade	C	Si	Mn	P	S	Ceq	PCM
KS D3558(2015)	<b>SWH 400</b>	0.25	-	-	0.050	0.050	0.40	-
	<b>SWH 490</b>	0.20	0.55	1.60	0.035	0.035	0.45	-
	<b>SWH 520</b>	0.20	0.55	1.60	0.035	0.035	0.45	-
	<b>SWH 570</b>	0.18	0.55	1.60	0.035	0.035	0.45	-
JIS G3353(2011)	<b>SWH 400</b>	0.20	0.35	1.40	0.030	0.015	0.36	0.26

#### Carbon Equivalent

By KS  $C_{eq} (\%) = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$

By JIS  $C_{eq} (\%) = C + Mn/6 + Si/24 + Ni/40 + Cr/5 + Mo/4 + V/14$

#### Composition on Sensibility of Weld Crack

By JIS  $P_{CM} (\%) = C + Si/30 + Mn/20 + Cu/20 + Ni/60 + Cr/20 + Mo/15 + V/10 + 5B$

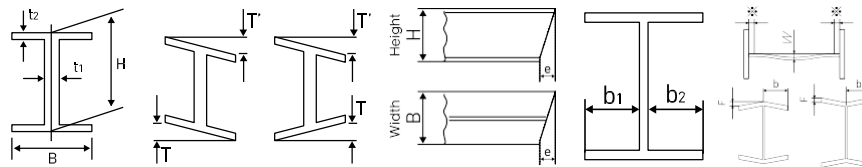
### Grade by Physical Property

Grade	TS (N/mm <sup>2</sup> ) min		YS (N/mm <sup>2</sup> ) min		EL (%) min	
	KS	JIS	KS	JIS	KS	JIS
<b>SWH 400</b>	400-540	400-510	245	245	<5mm : 21 ≥5mm : 17	<5mm : 23 ≥5mm : 18
<b>SWH 490</b>	490-610	-	325	-	<5mm : 22 ≥5mm : 17	-
<b>SWH 520</b>	520-640	-	365	-	<5mm : 19 ≥5mm : 15	-
<b>SWH570</b>	570-720	-	460	-	19	-

- Test Piece for 5mm Thickness below : No 5, 5mm above : No 1A

# Welded H-Beam

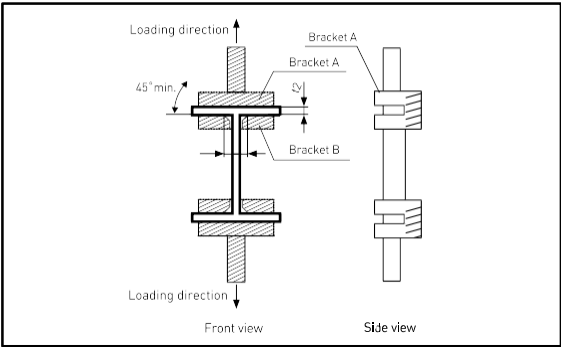
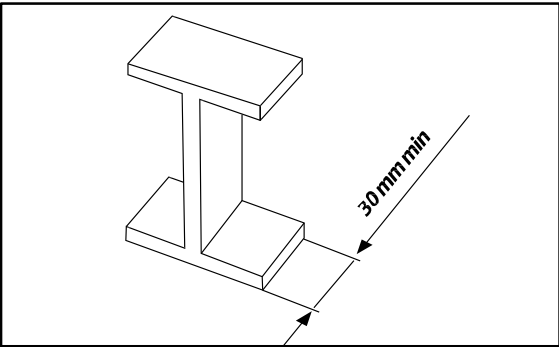
## Dimensional Tolerance



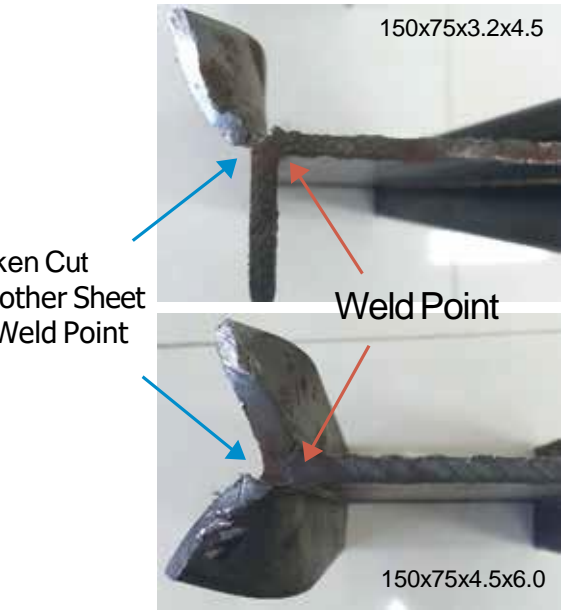
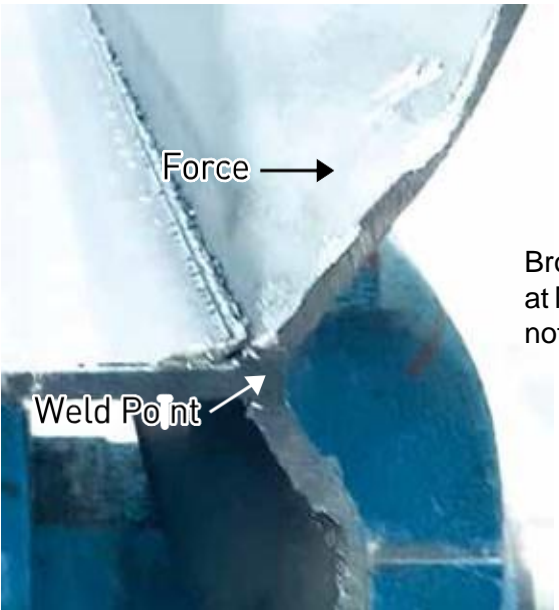
Description	ASTM A-6	KS D 3558 (2015)	JIS G 3353 (2011)
Height (H)	$\pm 1/8$ in	$\pm 1.5$ mm	$\pm 1.0$ mm
Width (B)	$\pm 1/4$ in, $-3/16$ in	$\pm 1.5$ mm	$\pm 1.5$ mm
Thickness (T1, T2)	Not Specified	2.3 mm : $\pm 0.25$ mm	- 4.0mm : $\pm 0.20$ mm
		3.2 mm : $\pm 0.30$ mm	- 6.0mm : $\pm 5\%$
		4.5 mm : $\pm 0.45$ mm	- 12.0mm : $+ 5\%$
		6.0 mm above : $\pm 0.60$ mm	- 0.3mm
Length	30ft & Under : $\pm 3/8$ in 30ft Over : $\pm 3/8$ in plus 1/16 for each add'l 5ft	+Not specified, - 0	+ 40mm, - 0
Camber and Sweep (Bend)	1/8 in x (number of feet of total length/10) But not over 3/8 in	(H)300mm below : $\leq 0.2\%$ x length	0.15% of Length
		(H)300mm above : $\leq 0.1\%$ x length	0.10% of Length
Squareness (T)	Depth Up to 12 in : 1/4 in Over 12 in 5/16in	(H)300mm below : $\leq 1.0\%$ x B (Width), but max 1.5mm	1.0% of B But max 1.5mm
		(H)300mm above : $\leq 1.2\%$ x B	1.2% of B
Eccentricity (S) Web-off-Center	$E \leq 3/16$ in	$s = (b_1 - b_2) / 2 \pm 2.0$ mm	$\pm 1.5$ mm
Square of Cut Face (e)	1/32 in	$\leq 1.6\%$ of (H) or (B), but max 3.0mm	$\leq 1.0\%$ of (H) or (B), but max 2.0mm
Concavity of Web (W)	-	-	2.0mm Max * Shall be 5-15mm
Frang Fold (F)	-	-	1.5% of (B), but min 0.8mm, max 1.5mm
Weight	-	Thickness 10mm below : $\pm 5\%$ 10mm above : $\pm 4\%$	-

## Testing

### Tensile Test Method for Weld (KS, JIS)

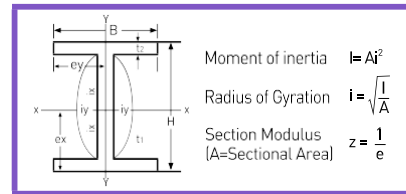


### H-Beam Weld Point Field Test Result



# Welded H-Beam

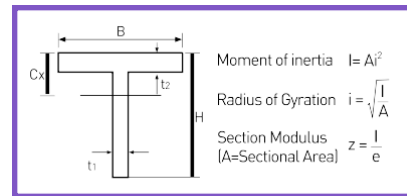
## Standard Size (H-Beam)



Dimension				Unit Weight	Moment of Inertia		Radius of Gyration		Section Modulus	
H	B	t <sub>1</sub>	t <sub>2</sub>	W	I <sub>x</sub>	I <sub>y</sub>	i <sub>x</sub>	i <sub>y</sub>	Z <sub>x</sub>	Z <sub>y</sub>
mm	mm	mm	mm	Kg/m	cm <sup>4</sup>	cm <sup>4</sup>	cm	cm	cm <sup>3</sup>	cm <sup>3</sup>
100	(50)	3.2	4.5	5.820	122.8	9.40	4.07	1.13	28.1	5.9
100	75	3.2	4.5	7.585	174.1	31.7	4.25	1.81	34.8	8.4
100	100	3.2	4.5	9.351	225.5	75	4.35	2.51	45.1	15
150	75	3.2	4.5	8.841	432.1	31.7	6.19	1.68	57.6	8.4
150	75	3.2	6	10.532	536.9	42.2	6.33	1.77	71.6	11.3
150	75	4.5	6	11.94	565.4	42.3	6.10	1.67	86.2	17.6
150	100	3.2	4.5	10.607	551.2	75	6.39	2.36	73.5	15
150	100	3.2	6	12.887	692.5	100	6.5	2.47	92.3	20
150	100	6	9	20.347	1,010.9	150.2	6.24	2.41	134.8	30
150	150	3.2	6	17.597	1,003.7	337.5	6.69	3.88	133.8	45
150	150	6	9	27.412	1,458.8	506.5	6.46	3.81	194.5	67.5
200	100	3.2	4.5	11.863	1,045.9	75.1	8.32	2.23	104.6	15
200	100	3.2	6	14.143	1,306.6	100.1	8.52	2.36	130.7	20
200	100	6	9	22.702	1,944.3	150.3	8.2	2.28	194.4	30.1
250	125	3.2	4.5	14.885	2,068.6	146.6	10.45	2.78	165.5	23.4
250	125	4.5	6	20.182	2,738.6	195.5	10.32	2.76	219.1	31.3
250	125	4.5	9	25.858	3,736.8	293.1	10.65	2.98	298.9	46.9
250	125	6	9	28.590	3,892.9	293.4	10.34	2.84	311.4	46.9
250	250	6	9	46.252	7,161.5	2,344.2	11.03	6.31	572.9	187.5
300	150	4.5	6	24.304	4,786	337.8	12.43	3.3	319.1	45
300	150	4.5	9	31.157	6,558.8	506.5	12.86	3.57	437.3	67.5
300	150	6	9	34.477	6,839.1	506.8	12.48	3.4	455.9	67.6
300	200	6	9	41.542	8,745	1,200.5	12.86	4.76	583	120.1
300	300	6	9	55.672	12,556.9	4,050.5	13.31	7.56	837.1	270
350	175	4.5	6	28.425	7,661.3	536.2	14.55	3.85	437.8	61.3
350	175	4.5	9	36.455	10,531.5	804.2	15.06	4.16	601.8	91.9
350	175	6	9	40.365	10,989	804.5	14.62	3.96	627.9	91.9
400	200	4.5	9	41.754	15,852.1	1,200.3	17.26	4.75	792.6	120
400	200	6	9	46.252	16,548.9	1,200.7	16.76	4.51	827.4	120.1
400	300	6	9	60.382	23,429.7	4,050.7	17.45	7.26	1,171.5	270
450	200	4.5	9	43.520	20,529.0	1,200.3	19.24	4.65	912.4	120.0
450	200	6	9	48.607	21,536.8	1,200.8	18.65	4.4	957.2	120.1
450	300	6	9	62.737	30,289.7	4,050.8	19.47	7.12	1,346.2	270.1

( ) : needs prior discussion

## Standard Size (T-Bar)



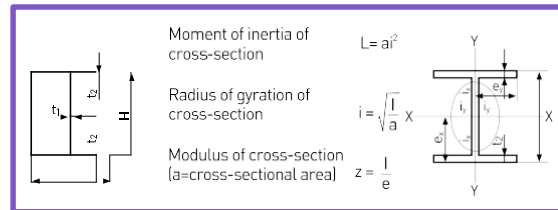
Dimension				Section Area	Unit Weight	Moment of Inertia		Radius of Gyration		Section Modulus	
H	B	t <sub>1</sub>	t <sub>2</sub>			A	W	I <sub>x</sub>	I <sub>y</sub>	i <sub>x</sub>	i <sub>y</sub>
mm	mm	mm	mm	cm <sup>2</sup>	Kg/m	cm <sup>4</sup>	cm <sup>4</sup>	cm	cm	cm <sup>3</sup>	cm <sup>3</sup>
70	70	6	6	8.04	6.311	38	17	2.17	1.47	7.52	4.93
75	125	9	9	17.19	13.494	77	147	2.12	2.92	13.38	23.5
75	150	6	6	13.14	10.315	57	169	2.07	3.58	9.4	22.52
75	150	9	9	19.44	15.260	81	254	2.03	3.61	13.63	33.8
75	150	(12)	(12)	25.56	20.065	102	338	2	3.64	17.62	45.12
90	180	(7)	(7)	18.41	14.452	114	340	2.49	4.3	15.82	37.83
90	180	(10)	(10)	26.00	20.410	156	487	2.45	4.33	21.97	54.07
100	150	6	9	18.96	14.884	136	253	2.68	3.66	16.74	33.77
100	200	(7)	(7)	20.51	16.100	159	467	2.78	4.77	19.67	46.69
100	200	(8)	(12)	31.04	24.366	184	800	2.44	5.08	22.31	80.04
100	200	(10)	(10)	29.00	22.765	218	667	2.74	4.8	27.38	66.74
125	125	6	9	18.21	14.295	247	147	3.68	2.84	25.54	23.47
125	175	(7)	(11)	27.23	21.376	309	492	3.37	4.25	30.51	56.18
130	260	9	9	34.29	26.918	448	1,319	3.62	6.2	42.77	101.46
130	260	(12)	(12)	45.36	35.608	580	1,759	3.57	6.23	55.88	135.33
150	150	6	9	21.96	17.239	434	253	4.44	3.4	37.19	33.78
150	200	(8)	(12)	35.04	27.506	603	801	4.15	4.78	50.13	80.06
175	175	(7)	(11)	30.73	24.123	810	492	5.13	4	59.19	56.2
200	200	6	9	29.46	23.126	1,050	600	5.97	4.51	67.04	60.03
200	200	(8)	(12)	39.04	30.646	1,370	801	5.92	4.53	88.15	80.08
250	250	9	9	44.19	34.689	2,777	1,173	7.93	5.15	150.8	93.87
250	250	(10)	(10)	49.00	38.465	3,067	1,304	7.91	5.16	166.91	104.33
300	300	(10)	(10)	59.00	46.315	5,353	2,252	9.52	6.18	241.91	150.16

( ) : needs prior discussion



# Welded H-Beam

## JIS Standard Sizes



Standard cross-sectional dimension mm			Cross-sectional area cm <sup>2</sup>	Unit mass Kg/m	Reference					
H X B	t <sub>1</sub>	t <sub>2</sub>			Moment of inertia of cross-section cm <sup>4</sup>		Radius of gyration of cross-section cm		Modulus of Cross-section cm <sup>3</sup>	
					I <sub>x</sub>	I <sub>y</sub>	i <sub>x</sub>	i <sub>y</sub>	Z <sub>x</sub>	Z <sub>y</sub>
100 X 100	3.2	4.5	11.91	9.35	225	75.0	4.35	2.51	45.1	15.0
125 X 60	3.2	4.5	9.112	7.15	238	16.2	5.11	1.33	38.0	5.41
125 X 100	3.2	4.5	12.71	10.0	368	75.0	5.38	2.43	59.0	15.0
150 X 75	2.3	2.3	6.794	5.33	247	16.2	6.03	1.54	32.9	4.32
	3.2	3.2	9.395	7.38	338	22.5	5.99	1.55	45.0	6.01
	3.2	4.5	11.26	8.84	432	31.7	6.19	1.68	57.6	8.45
150 X 100	3.2	4.5	13.51	10.6	551	75.0	6.39	2.36	73.5	15.0
	3.2	6.0	16.42	12.9	693	100	6.50	2.47	92.3	20.0
150 X 125	3.2	6.0	19.42	15.2	848	195	6.61	3.17	113	31.3
150 X 150	3.2	4.5	18.01	14.1	789	253	6.62	3.75	105	33.8
	4.5	6.0	24.21	19.0	1,030	338	6.53	3.73	138	45.0
175 X 90	3.2	4.5	13.41	10.5	711	54.7	7.28	2.02	81.2	12.2
175 X 100	4.5	6.0	19.34	15.2	1,020	100	7.26	2.28	117	20.0
200 X 100	3.2	3.2	12.60	9.89	813	53.4	8.04	2.06	81.3	10.7
	3.2	4.5	15.11	11.9	1,050	75.1	8.32	2.23	105	15.0
	3.2	6.0	18.02	14.1	1,310	100	8.52	2.36	131	20.0
200 X 150	3.2	4.5	19.61	15.4	1,480	253	8.68	3.59	148	33.8
250 X 100	3.2	4.5	16.71	13.1	1,730	75.1	10.2	2.12	138	15.0
	3.2	6.0	19.62	15.4	2,150	100	10.5	2.26	172	20.0
	4.5	6.0	22.71	17.8	2,290	100	10.0	2.10	183	20.0
	4.5	9.0	28.44	22.3	3,080	150	10.4	2.30	247	30.0
250 X 125	3.2	4.5	18.96	14.9	2,070	147	10.4	2.78	165	23.4
	4.5	6.0	25.71	20.2	2,740	195	10.3	2.76	219	31.3
	4.5	9.0	32.94	25.9	3,740	293	10.7	2.98	299	46.9
250 X 150	3.2	4.5	21.21	16.6	2,410	253	10.7	3.45	193	33.8
300 X 150	3.2	4.5	22.81	17.9	3,600	253	12.6	3.33	240	33.8
	4.5	6.0	30.96	24.3	4,790	338	12.4	3.30	319	45.0
	4.5	9.0	39.69	31.2	6,560	506	12.9	3.57	437	67.5
350 X 175	4.5	6.0	36.21	28.4	7,660	536	14.5	3.85	438	61.3
	4.5	9.0	46.44	36.5	10,500	804	15.1	4.16	602	91.9
400 X 200	4.5	6.0	41.46	32.5	11,500	800	16.7	4.39	575	80.0
	4.5	9.0	53.19	41.8	15,900	1,200	17.3	4.75	793	120
	6.0	9.0	58.92	46.3	16,500	1,200	16.8	4.51	627	120
450 X 200	4.5	9.0	55.44	43.5	20,500	1,200	19.2	4.65	912	120
	6.0	9.0	61.92	48.6	21,500	1,200	18.6	4.40	957	120

## Product Information



### Machine Detail

Description	Specification (5" Line / 2" Line)
Line Speed	Max. 60 M/min / Max. 90 M/min
Outer Diameter	48.6 - 141.3 mm / 15.0 - 63.5mm
Thickness	1.2 - 7.0 mm / 0.5 - 3.2 mm
Width	100 - 450 mm / 60 - 200 mm
Pipe Length	Max. 12 M / Max. 7 M
Equipments for Quality	Straightener, End Facer, Zn Sprayer

### Roll Range (5" Line)

Nominal Size		(○) Round Out Diameter (mm)			( ) Square Size (mm)	
A	B (inch)	JIS	ASTM	Thickness	Size	Thickness
50A	2	60.5	60.3	2.3-5.0		
65.0		(63.5) (65.0)			50 x 50	1.2-5.0
65A	2 ½	76.3	73.0	2.3-5.0	60 x 60	1.2-5.0
					75 x 45	1.2-5.0
					80 x 40	1.2-5.0
67.0		(67.0)				
73.5		(73.5)				
80A	3	89.1	88.9	2.3-7.0		
83.0		(83.0)				
90A	3 ½	101.6	101.6	2.3-7.0	100 x 50	2.3-7.0
100A	4	114.3	114.3	2.3-7.0		
125A	5	139.8	141.3	2.3/7.0	100 x 100	2.3/7.0
					125 x 75	2.3/7.0

### Size Range (2" Line)

Round : 20mm, 21.7mm, 25.4mm, 31.8mm, 34mm, 38.1mm, 48.6mm, 50.8mm  
 Square : 16 x 16mm, 19 x 19mm, 25 x 25mm, 38 x 19mm, 38 x 38mm, 50 x 25mm

## Specification for General Structural Pipe

By KS D3566 (2014), JIS G3444 (2006)

### Grade by Chemical Composition and Physical Property

Grade	Chemical Composition (% , Max)					Physical Property				
	C	Si	Mn	P	S	TS N/mm <sup>2</sup>	YS N/mm <sup>2</sup>	EI (% ,)		Flatness D (Outdia)
								Vertical	Horizontal	
STK290	-	-	-	0.050	0.050	290min	-	30min	25min	2/3D
STK400	0.25	-	-	0.040	0.040	400min	235min	23min	18min	2/3D
STK490	0.18	0.55	1.50	0.040	0.040	490min	315min	23min	18min	7/8D
STK500	0.24	0.35	0.30-1.30	0.040	0.040	500min	355min	20min	16min	7/8D
STK540	0.23	0.40	1.50	0.040	0.040	540min	390min	20min	16min	7/8D
STK590	0.30	0.40	2.00	0.040	0.040	590min	440min	20min	16min	7/8D
STK690	0.30	0.40	2.00	0.040	0.040	690min	540min	20min	16min	7/8D

### Elongation Table for the Thickness 8mm below

	Test Piece	Over 7mm	Over 6mm	Over 5mm	Over 4mm	Over 3mm	Over 2mm	Over 1mm	below 1mm
STK290	No 12	30	28	27	26	24	22	21	20
	No 5	25	24	22	20	19	18	16	14
STK400	No 12	23	22	20	18	17	16	14	12
	No 5	18	16	15	14	12	10	9	8
STK490	No 12	23	22	20	18	17	16	14	12
	No 5	18	16	15	14	12	10	9	8
STK500	No 12	20	18	17	16	14	12	11	10
	No 5	16	14	13	12	10	8	7	6
STK540	No 12	20	18	17	16	14	12	11	10
	No 5	16	14	13	12	10	8	7	6
STK590	No 12	20	18	17	16	14	12	11	10
	No 5	16	14	13	12	10	8	7	6
STK690	No 12	20	18	17	16	14	12	11	10
	No 5	16	14	13	12	10	8	7	6

## Out Diameter Tolerance

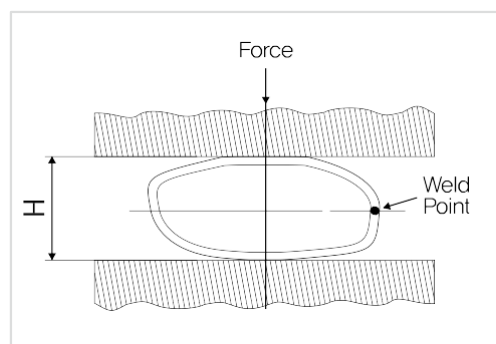
Out Diameter	Tolerance
50mm below	$\pm 0.25\text{mm}$
50mm above	$\pm 0.5\%$

## Thickness Tolerance

Class	Thickness	Tolerance
1	Below 4mm	+ 0.6mm, - 0.5mm
	4mm – 12mm	+ 15%, - 12.5%
2	Below 3mm	$\pm 0.3\text{mm}$
	3mm – 12mm	$\pm 10\%$

## Testing

Out Diameter	Test Method	Test Piece
100mm below	One each for TS, Flatness and Bend for every 5,000m	KS B0801 (JIS Z 2201) No 11, No 12A, No 12B, No 12C or No 5 Length Min 50mm
100 – 200mm	One each for TS, and Flatness for every 2,500m	
200 – 350mm	One each for TS, and Flatness for every 1,250m	



Testing Method



Pipe Weld Point Test Result

## Specification for General Structural Square Pipe

By KS D3568 (2009, 2014 Checked), JIS G3466(2006)

### Grade by Chemical Composition and Physical Property

Grade KS (JIS)	Chemical Composition (% , Max)					Physical Property		
	C	Si	Mn	P	S	TS N/mm <sup>2</sup>	YS N/mm <sup>2</sup>	EI (No5) (%)
SPSR 400 (STKR 400)	0.25	-	-	0.040	0.040	400min	245min	23min
SPSR 490 (STKR 490)	0.18	0.55	1.50	0.040	0.040	490min	325min	23min
SPSR 540	0.23	0.40	1.50	0.040	0.040	540min	390min	20min
SPSR 590	0.30	0.40	2.00	0.040	0.040	590min	440min	20min

### Tolerances

		Tolerance
Square Width	100mm and below	± 1.5 mm
	100mm above	± 1.5 %
Width Flatness	100mm and below	Below 0.5 mm
	100mm above	Below 0.5% of Width
Angle for Square		± 1.5°
Size of Angle		Below 3 x thickness
Length		-0, + not specified
Camber		Below 0.3% of total length
Thickness	Below 3 mm	± 0.3mm
	3 mm and above	± 10 %

## Comparisons

### Specifications' Comparison

Application	Specification	Chemical Composition (%)						Physical Property (Min.)				Tolerance					
		C <sub>Max</sub>	Si <sub>Max</sub>	Mn <sub>Max</sub>	P <sub>Max</sub>	S <sub>Max</sub>	Others	TS (Kg/m <sup>2</sup> )	YS (Kg/m <sup>2</sup> )	El (%)	Out Dia.	Thickness	Length	Weight			
General Piping	ASTM A53	A	0.25	-	0.95	0.050	0.045	*1	33.8	21.1	*2						
		B	0.30	-	1.20	0.050	0.045	*1	42.2	24.6	*2						
Conveying Liquid, Gas, or Vapor	ASTM A135	A	0.25	-	0.95	0.035	0.035	-	33.8	21.1	35			- 12.5%	-	± 10%	
		B	0.30	-	1.20	0.035	0.035	-	42.2	24.6	30						
Ordinary Screwing	BS 1387	L	0.20	-	1.20	0.045	0.045	-						- 8%	-0,+150mm	± 4%	
		M	0.20	-	1.20	0.045	0.045	-	33-47.2	20	20			- 10%	(-0,+6mm)		
		H	0.20	-	1.20	0.045	0.045	-						- 10%			
Pressure Purpose	BS 3601 ERW	320	0.16	-	0.70	0.040	0.040	Mn 0.30	320-460 N/mm <sup>2</sup>	195 N/mm <sup>2</sup>	25				+6mm,-0, every 3M +1.5mm (Max 12mm)	-	
		360	0.17	-	0.80	0.040	0.040	Mn 0.40, Si 0.35	360-500 N/mm <sup>2</sup>	235 N/mm <sup>2</sup>	25						
		410	0.21	-	1.20	0.045	0.045	Mn 0.40, Si 0.35	430-570 N/mm <sup>2</sup>	275 N/mm <sup>2</sup>	22						
Ordinary Purpose	KSD 3507 (JIS G 3452)	SPP (SGP)	-	-	-	0.040	0.040	-	290 N/mm <sup>2</sup>	-	30				- 12.5%	-	-
		A	0.30	-	-	0.045	0.050	0.18	310 N/mm <sup>2</sup>	228 N/mm <sup>2</sup>	25						
Structural	ASTM A500 (Grade A,B,C,D)	B	0.30	-	-	0.045	0.050	0.18	400 N/mm <sup>2</sup>	290 N/mm <sup>2</sup>	23					± 10%	+1/2In, -1/4In
		290	-	-	-	0.50	0.050	-	30	-	30						
General Structural	KSD 3566 (JIS G 3444) STK	400	0.25	-	-	0.040	0.040	-	41	24,235N/mm <sup>2</sup>	23						
		500	0.24	0.35	0.3-1.30	0.040	0.040	-	51	36(355N/mm <sup>2</sup> )	20						
		490	0.18	0.55	1.50	0.040	0.040	-	50	32,315N/mm <sup>2</sup>	23						
		540	0.23	0.40	1.50	0.040	0.040	-	55	40,390N/mm <sup>2</sup>	20						

\*1 : Cu, Ni, Cr Max 0.15%, Mo Max 0.15%, V Max 0.08%

\*2 : e = 62,500 x (A0.2/U0.9)

## Size Comparison

General Structure		Conduit (Thick)			Conduit (Thin)			ERW Steel Pipe				Square Pipe for General Structural				Myanmar Size	
Out Dia	Wall Thick	JIS C8305		JIS C8305		JIS C8305		ASTM A135		Kg/M	Size		Thickness		Round	Square	
		Nom Size	Out Dia	Wall Thick	Nom Size	Out Dia	Wall Thick	Nom Size	Out Dia		Wall Thick	JIS/KS	ASTM	Nom			Min
<b>2" New Line</b>																	
<b>21.7</b>	2.0	G16	21.0	2.3	16	19.1	1.6	1/2"	21.3			20 x 20	15.9x15.9	1.524	1.372	<b>20.0</b>	<b>16x16</b>
														1.524	1.372		
27.2	2.0, 2.3	G22	26.5	2.3	25	<b>25.4</b>	1.6	3/4"	26.7	1.28	25 x 25	25.4x25.4	1.524	1.372	25.0	<b>25x25</b>	
34.0	2.3	G28	33.3	2.5	31	<b>31.8</b>	1.6	1"	33.4	2.09	30 x 30	38.1x19.1	1.524	1.372	32.0	<b>38x19</b>	
42.7	2.3, 2.5, 2.8	G36	41.9	2.5	39	<b>38.1</b>	1.6	1 1/4"	42.2	2.69	40 x 40	38.1x38.1	1.524	1.372	42.0	<b>38x38</b>	
														1.905	1.715		
														3.048	2.743		
48.6	2.3 - 3.2	G42	47.8	2.5	51	<b>50.8</b>	1.6	1 1/2"	<b>48.3</b>	3.11	50 x 30	50.8x25.4	1.524	1.372	<b>48.3</b>	<b>50x25</b>	
<b>5" Line</b>																	
60.5	2.3, 3.2, 4.0	G54	59.6	2.8	63	63.5	2.0	2"	<b>60.3</b>	3.93	50 x 50	50.8x50.8	1.524	1.372	<b>60.0</b>	<b>50x50</b>	
													1.905	1.715			
													3.048	2.743			
76.3	2.8, 3.2, 4.0	G70	75.2	2.8	75	76.2	2.0	2 1/2"	73.0	5.26	60 x 60		HR	HR	<b>76.3</b>	<b>75x45</b>	
89.1	2.8, 3.2, 4.0	G82	87.9	2.8				3"	88.9	6.46			3.048	2.743	<b>89.1</b>		
101.6	3.2, 4.0, 5.0	G92	100.7	3.5				3 1/2"	101.6	7.41	100x50	101.6x50.8	4.775	4.298	<b>101.6</b>	<b>100x50</b>	
114.3	3.2,3.6,4.5,5.6	G104	113.4	3.5				4"	114.3	8.37	100x100	101.6x101.6	6.350	5.715	<b>114.3</b>	<b>100x100</b>	
139.8	3.6,4.0,4.5,6.0							5"	141.3	11.58					<b>139.8</b>		

## Standard Size and Theoretical Weight

### 2" Pipe (GI/HR/CR)

(Kg/M)

Dia \ Thick		0.85	1.00	1.20	1.50	1.80	2.30	3.20
20.0		0.401	0.469	0.556	0.684	0.808	1.004	1.326
21.0		0.422	0.493	0.586	0.721	0.852	1.061	1.405
21.7		0.437	0.510	0.607	0.747	0.883	1.100	1.460
25.4		0.515	0.602	0.716	0.884	1.048	1.310	1.752
31.8		0.649	0.760	0.906	1.121	1.332	1.673	2.257
34.0		0.695	0.814	0.971	1.202	1.429	1.798	2.430
38.1		0.781	0.915	1.092	1.354	1.611	2.031	2.754
48.3		0.995	1.166	1.394	1.731	2.064	2.609	3.559
48.6		1.001	1.174	1.403	1.742	2.077	2.626	3.583
50.8		1.047	1.228	1.468	1.824	2.175	2.751	3.756
16	16	0.404	0.471	0.558	0.683	0.803	0.989	1.286
19	19	0.484	0.565	0.671	0.824	0.972	1.206	1.588
25	25	0.645	0.754	0.897	1.107	1.311	1.639	2.190
38	19	0.738	0.864	1.029	1.272	1.509	1.892	2.542
38	38	0.992	1.162	1.387	1.719	2.046	2.578	3.497
50	25	0.978	1.146	1.368	1.696	2.018	2.542	3.446

### 5" Pipe (HR/GI)

(Kg/M)

Dia \ Thick		2.00	2.30	2.80	3.20	4.50	5.00	6.00
60.5		2.885	3.301	3.984	4.522	6.214	6.843	8.064
76.3		3.664	4.197	5.075	5.768	7.968	8.791	10.402
89.1		4.296	4.923	5.959	6.779	9.388	10.370	12.295
101.6		4.912	5.632	6.822	7.765	10.775	11.911	14.145
114.3		5.539	6.352	7.699	8.767	12.185	13.477	16.024
139.8		6.796	7.799	9.460	10.779	15.014	16.621	19.797
50	50	3.014	3.445	4.150	4.702	6.429	7.065	8.290
60	60	3.642	4.167	5.029	5.707	7.842	8.635	10.174
75	45	3.642	4.167	5.029	5.707	7.842	8.635	10.174
100	50	4.584	5.250	6.348	7.214	9.962	10.990	13.000
100	100	6.154	7.056	8.546	9.726	13.494	14.915	17.710



# Welded H-Beam / Steel Pipe

## Applications



POKKA Drink Factory,  
Mingaladon,  
Yangon

350x175x4.5x6.0  
300x150x4.5x6.0  
150x75x3.2x4.5



San Yee Cartoon Box Factory, ▲  
Mingaladon,  
Yangon

Tie Beam 300x150x4.5x6.0



Garment Factory at  
**Shwe Lin Ban**, Yangon  
by Pacific Asia Hi-Tech  
Construction (J World)

Square Pipe 100x50x1.8mm



# Welded H-Beam / Steel Pipe



Baan Technology Galvanizing Factory, Myaungthagar, Myanmar 350x175x6x9

## Hlaing Thar Yar Private Projects



▲ Warehouse and Shop  
 ▲ Ceiling and Wall of Private House

150x75x3.2x4.5
150x75x3.2x6.0
150x75x4.5x6.0

◀ Warehouse and Office  
 ▶ Tenement House



# Welded H-Beam / Steel Pipe



Housing Project,  
**Sittwe,**  
Myanmar

300x150x6.0x9.0  
200x200x6.0x9.0  
150x75x3.2x4.5



▲ Car Protection, RK Myanmar  
**Thilawa,** Yangon  
Ø114.3mm x 6.0mm Pipe

▲ Ayetharyar Industry Zone,  
**Taunggyi,** Myanmar

H-Beam 150 x 75 x 4.5 x 6.0

Thar Baung Bridge,  
**Ayeyarwady**

H-Beam 450 x 300 x 6.0 x 9.0



▲ Royal Ayar Construction Co  
**Pathein**



# Welded H-Beam / Steel Pipe



Telecomm Pole,  
Yangon ▶  
Ø60.5mm x 4mm



▲ Yangon International Airport  
100x100x2.3/3.2, 100x50x2.3, 50x50x2.3, 75x45x2.3



▲ Car Park at Prime Metal  
Mingaladon 150x75x3.2x4.5/6.0

Shop at Mingaladon ▲  
150x150x6x9 150x75x3.2x6.0



Daewoo Amara Hotel Py  
ay Road, Yangon  
(J World)

Square Pipe for  
Marble Structure & Interior

100x100x3.2, 100x50x1.8/2.0  
50x50x1.8/2.0



# Welded H-Beam / Steel Pipe



## Mandalay

Education School  
by Jeeda

150x75x3.2x6.0

150x75x4.5x6.0



## NTG Steel Trading, Ayeyarwady

40'x200'+ 40'x60'

Main Shop 350x175x6.0x9.0,

Office 150x75x4.5x6.0



NTG Stadium Structure,  
Ayeyarwady, 250x125x4.5x9.0



Private Shop/House  
Kyon Pyaw,

## Ayeyarwady

(by NTG Steel)

150x75x4.5x6.0



Office Building

## Yegy, Ayeyarwady

150x75x4.5x6.0



# Welded H-Beam / Steel Pipe



Animal Protection Wall at Highway, Maryland, USA



Guard Rail (Impact Protection) and Sign Board at Maryland Highway, USA



Trailer/Container Support Frame

Temporary Support (Recycle)  
Train Station, Korea  
H-Beam 150x75x3.2x4.5/6.0



Light Structures,  
Korea

Sub-train Door Frame, Korea



# Beautiful Myanmar / Memo



*Myanmar Bougainvillea  
(Satkupan)*

Beautiful  
Myanmar



Downtown, Yangon



View from  
Park Royal  
Hotel

Painted by  
Mr Lim Jin Woo,  
CEO of  
Junglim Architecture Co.,Ltd

Memo



## Prime Metal Co., Ltd.

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