



yujin

Carbon Steel Pipes
for Ordinary Piping

Carbon Steel Tubes
for General Structural Purposes

Carbon Steel Square Pipes
for General Structural Purposes

Carbon Steel Tubes
for Machine Structural Purposes

Coated Steel Pipes
for Plastic Housing

ASTM A500 Carbon Steel
Structural Tubing in Shapes

ASTM A500 Carbon Steel
Structural Tubing in Rounds

ASTM A252 Welded Steel
Pipe Piles

*Excellent members,
Excellent company!*





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CI Introduction



YUJIN 유진철강산업(주)
YUJIN STEEL INDUSTRY CO., LTD.

YUJIN 유진철강산업(주)

YUJIN STEEL INDUSTRY

www.YUJIN STEEL.com

www.YUJIN STEEL.co.kr


DIC 68p


DIC 255p


DIC 222p


DIC 254p


DIC 163p

Yujin Steel Industry's new identity system represents the image of sound and active company, pursuing consistent changes and innovations on the existing growth basis against the uncertainty in the future.

The whole shape leaned to the right emphasizes the strong activity and future vision and shows the infinite possibilities of the company expansion in the future

 object of J and I is symbolizes well-prepared posture for vibrant set-off on the starting line to the future.

The orange colored  object on  shows the the mind pursuing changes and innovations indirectly.

And the identity system emphasizes the process of the changes and innovations visually through the gradation of main color.



CEO Greetings

Dear Customers,

Thank you very much for your interest in Yujin Steel Industry Co.,Ltd.

We, YUJIN STEEL INDUSTRY CO., LTD. are various steel pipes, tubes and hollow sections manufacturer in Jincheon-gun, Chungcheongbuk-do, Korea. We produce about over 8,000 tons of pipes, tubes and hollow sections per month in our capacity.

We are all supplied HR, GI, HGI coils by POSCO and HYUNDAI STEEL directly for raw materials for production, mainly JIS SS400, SPHT1, SPHT2, SGCC, SGHC, SGH340, SGH400. Our production range is MIN 15.9mm dia, 1.2t to MAX 168.3mm dia, 7.0t for round pipes. And MIN 15/15×1.2t to MAX 127/127 or 152.4/101.6×7.0t for rectangular or square hollow sections. And for rectangular or square hollow sections, we can produce it red primed. This is good for anti-rust on surface and you can skip the primer process for painting. And for special dimension, we have also 50/25, 60/30, 75/50, 80/30, 80/40, 100/60, 150/50, 150/75 specifications.

And as one of our many endeavors for quality improvement and management, we have KS and JIS, and ISO 9001 certification.

Besides it, all members in our company are doing our best for quality improvement and customer satisfaction.

If you have any further interest about YUJIN STEEL INDUSTRY Co.,Ltd.

Don't hesitate to give us any question.

Thank you very much.

Respectfully,
Yu, Jae-wang
Chairman,
Yujin Steel Industry Co.,Ltd



Brief History

1970

Jul. 1976 Established Jae-Wang Steel Company
Aug. 1979 Switchover to Jae-Wang Steel Co., Ltd.

1980

Mar. 1987 Won an official commendation from the commissioner of Korean National Tax Service
Nov. 1987 Established Yujin Steel Industry Company
Jun. 1988 Completed the construction of steel pipe factory and machinery facilities
Jul. 1988 Completed test working of tube mill line and started production
Jul. 1989 Installed tube mill line #2 and expanded warehouse

1990

Dec. 1990 Be selected as a prominent small & medium size corporate (by the former Commercial Bank of Korea)
Jun. 1991 Expanded the factory and automated partial equipments of facilities
Jan. 1993 Switchover to Yujin Steel Industry Co., Ltd.
Dec. 1996 Yujin Steel Industry Co., Ltd. Completed a course of prominent small & medium size corporate (The Present Woori Bank)
Mar. 1999 Yujin Steel Industry Co., Ltd. Won an official commendation from the commissioner of Korean National Tax Service

2000

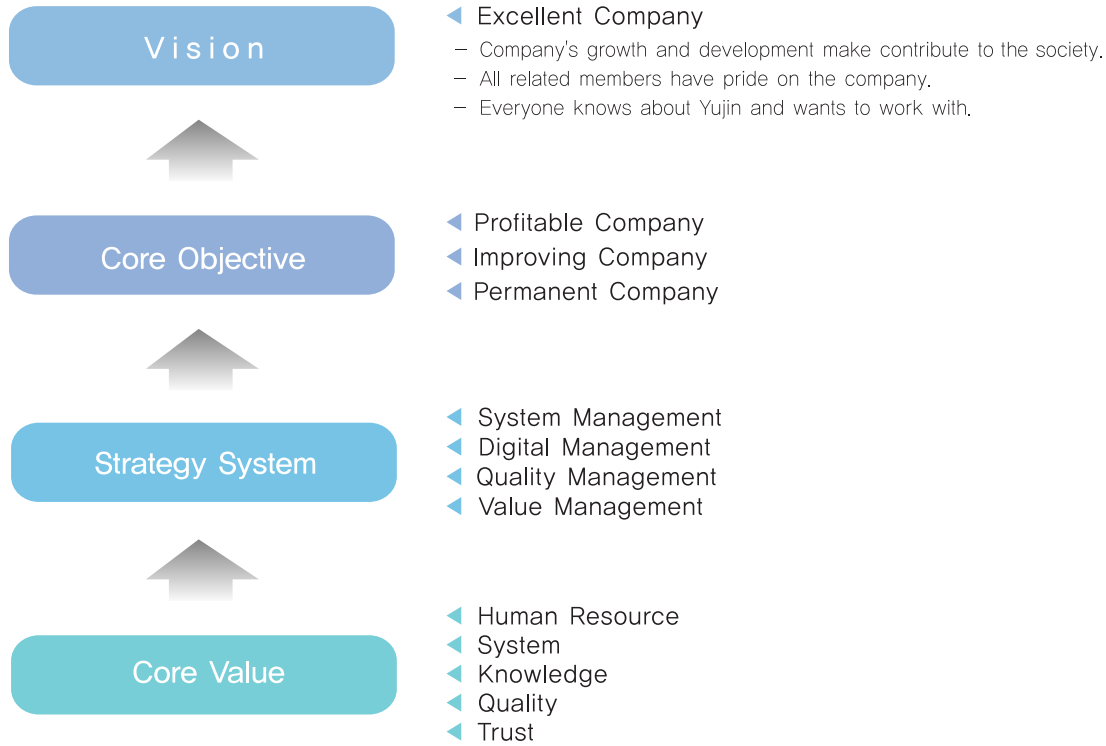
Dec. 2001 Obtained ISO 9001 Certificate
Feb. 2002 Obtained KS certificate of KS D 3566 carbon steel tubes for general structural purposes - STK 290 (below outdiameter 48.6mm)
- SKT 400 (below outdiameter 114.3mm) #02-2531
Obtained KS certificate of KS D 3568 carbon steel square pipes for general structural purposes - SPSR 400 (square below 75×75, rectangle below 100×50) #02-2532
Feb. 2003 Completed the construction of the 2nd factory and machinery facilities
Mar. 2003 Completed test working of the 2nd factory and started production
Oct. 2003 Attained 6,500 tons of production per month
Jul. 2004 Yujin Steel Industry Co., Ltd. Merged Jae-wang Steel Co., Ltd.
Apr. 2005 Obtained KS certificate of KS D 3507 carbon steel pipes for ordinary piping (#05-0178)
- SPP black pipe (below 150A)
Obtained KS certificate of KS D 3517 carbon steel tube for machine structural purposes (#05-0179)
- STKM13B (below outdiameter 165.2mm)
Obtained KS certificate of KS D 3566 carbon steel tube for general structural purposes (#05-0181)
- STK400 (below outdiameter 165.2mm)
Obtained KS certificate of KS D 3568 carbon steel square pipes for general structural purposes
- SPSR400 (square below 125×125 rectangle below 150×100)
Feb. 2008 Replaced tube mill line #3
Oct. 2008 Replaced tube mill line #2
Sep. 2009 Completed the construction of the 2nd factory warehouse

2010

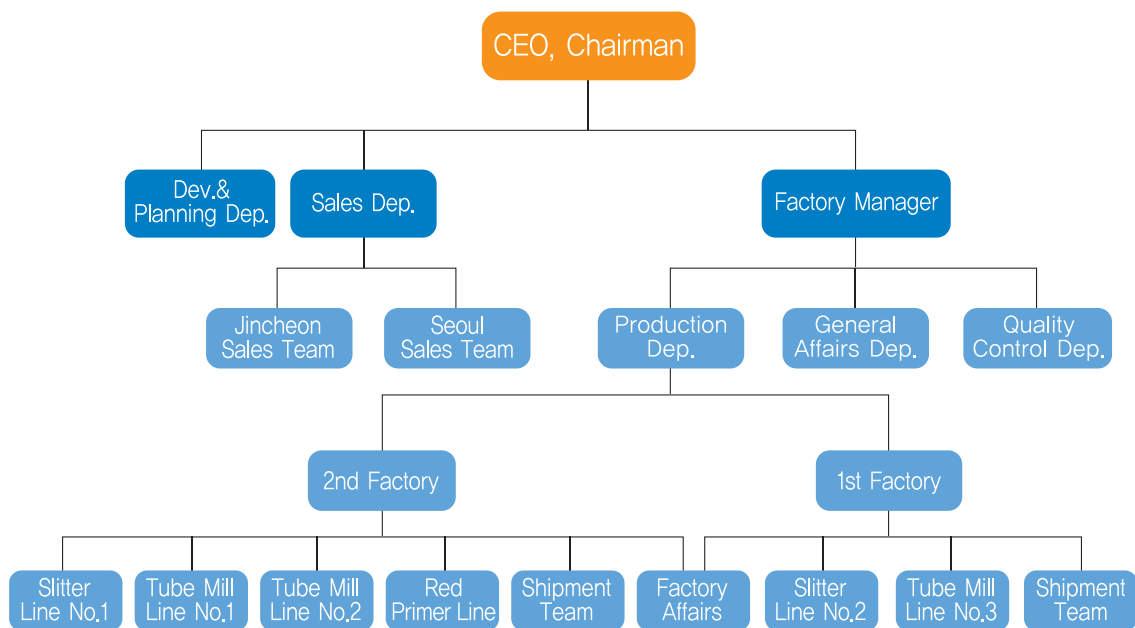
Nov. 2010 KS Q ISO 9001:2009 / ISO 9001:2008 certificate converted
Dec. 2010 Obtained KS certificate of KS D 3760 coated steel pipes for plastic housing
- SPVHS: 25~31
Jul. 2011 Obtained JIS certificate of JIS G 3452 carbon steel pipes for ordinary piping
- SGP black pipes
Obtained JIS certificate of JIS G 3444 carbon steel pipes for general structural purposes
- SKT400, SKT490
Obtained JIS certificate of JIS G 3466 carbon steel square pipes for general structural purposes
- SKTR400, SKTR490
Dec. 2011 Attained 84 billion korean won of sales figure and 81,000 tons of production for 2011



Management Philosophy



Organization



Products

Sort	Classification	Standard No.	Application
Structural	Carbon Steel Tubes for General Structural Purposes	KS D 3566, JIS G 3444 ASTM A 500, BS 1139	Building, bridge, machinery, steel tower, bicycle, electric light post, steel furniture, hand rail, fence, Plastic house, ornament, etc
	Carbon Steel Square Pipes for General Structural Purposes	KS D 3568, JIS G 3466 ASTM A500, BS 4848	
	Carbon Steel Tubes for Machine Structural Purposes	KS D 3517, JIS G 3445 BS 980/6326	
	Coated Steel Pipes for Plastic Housing	KS D 3760 ASTM A 787/84	
	Structural Pipes for Special Purposes	Yujin Steel Industry Standard	
	Steel pipe for piling	ASTM A252	
	Red Primed Square & Rectangular Pipes for General Structural Purposes	Yujin Steel Industry Standard	
Piping	Carbon Steel Pipes for Ordinary Piping	KS D 3507, JIS G 3452 ASTM A 53, BS 1387	Carbon Steel Pipes used in piping for steam, water, oil, gas, air, etc, of comparatively low working pressure





Certification

Certificate	Spec.No.	Spec. Name.	Mark	Scope of Supply	Certificate No.	Date	Accreditation body	Remark
ISO	ISO 9001	KS Q ISO 9001:2009 /ISO 9001:2008	ISO	Factory No.1: Product & Services of General Structure Purpose's Carbon Steel Pipe, Square Steel Pipe and Galvanized Steel Pipe for Vinyl-housing Factory No.2: Product & Services of General Structure Purpose's Carbon Steel Pipe, Square Steel Pipe, Carbon Steel Pipe for Ordinary Piping, Carbon Steel Pipe for Pressure Service and Carbon Steel Tubes for Machine Structure Purpose	KICT-083	2001.12.17	Korea Institute of Construction Technology	1nd factory 2nd factory
KS	KSD3566	Carbon Steel Tubes for General Structural Purposes	STK	STK 290 : Under 34,0mm STK 400 : Under 34,0mm	No. 02-2531	2002.02.28	Korean Standards Association	1nd factory
	KSD3568	Carbon Steel Square Pipes for General Structural Purposes	SPSR	SPSR 400 : Under 40 × 20 Under 30 × 30	No. 02-2532	2002.02.28	Korean Standards Association	1nd factory
	KSD3760	Coated Steel Pipes for Plastic Housing	SPVHS	25 ~ 31	No. 10-0672	2010.12.08	Korean Standards Association	1nd factory
	KSD3507	Carbon Steel Pipes for Ordinary Piping	SPP	Under black 150A	No. 05-0178	2005.04.14	Korean Standards Association	2nd factory
	KSD3517	Carbon Steel Tubes for Machine Structural Purposes	STKM13B	Under 165,2mm	No. 05-0179	2005.04.14	Korean Standards Association	2nd factory
	KSD3566	Carbon Steel Tubes for General Structural Purposes	STK	STK 400 : Under 165,2mm	No. 05-0181	2005.04.14	Korean Standards Association	2nd factory
	KSD3568	Carbon Steel Square Pipes for General Structural Purposes	SPSR	SPSR 400 : Under 125 × 125 Under 150 × 100	No. 05-0182	2005.04.14	Korean Standards Association	2nd factory
JIS	JISG3452	Carbon Steel Pipes for Ordinary Piping	SGP	Black SGP	CRKR11005	2011.07.26	Korea Testing and Research Institute	1nd factory 2nd factory
	JISG3444	Carbon Steel Tubes for General Structural Purposes	STK	STK400 STK490	CRKR11005	2011.07.26	Korea Testing and Research Institute	1nd factory 2nd factory
	JISG3466	Carbon Steel Square Pipes for General Structural Purposes	STKR	STKR400 STKR490	CRKR11005	2011.07.26	Korea Testing and Research Institute	1nd factory 2nd factory

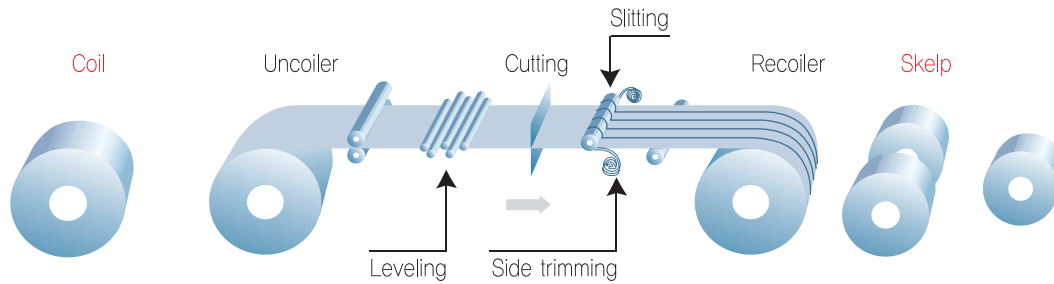
Main Facilities

Facility	Specification	Production Range	Capability	Remark
Tube Mill Line No.1	Skelp Skelp Weight : MAX 13 ton Skelp Thickness : 1.0~7.0 t Skelp I.D : $\varnothing$ 610 mm Skelp Width : 270~520 mm	Tube Size $\varnothing$ 88.9~168.3 □ 75/75~127/127 □ 100/50~152.4/101.6 Length : 4,200~16,000 mm	40,000 ton/y	2nd factory
Tube Mill Line No.2	Skelp Skelp Weight : MAX 7 ton Skelp Thickness : 1.0~4.5 t Skelp I.D : $\varnothing$ 610 mm Skelp Width : 102.5~237 mm	Tube Size $\varnothing$ 33.4~76.3 □ 38.1/50.8~76.2/50.8 □ 38.1/38.1~63.5/63.5 Length : 4,200~12,500 mm	30,000 ton/y	2nd factory
Tube Mill Line No.3	Skelp Skelp Weight : MAX 5 ton Skelp Thickness : 1.0~2.3 t Skelp I.D : $\varnothing$ 610 mm Skelp Width : 47~98.5 mm	Tube Size $\varnothing$ 15.9~38.1 □ 19/19~40/40 □ 30/20~50.8/31.8 Length : 4,200~13,000 mm	15,000 ton/y	1nd factory
Slitter Line No.1	Coil Thickness : 1.0~7.0 t Coil Width : MAX 1,550 mm Coil I.D : $\varnothing$ 508 $\varnothing$ 610 $\varnothing$ 762 Coil O.D : $\varnothing$ 1,200~2,000 mm Coil Weight : 25,000 kg	Skelp Thickness : 1.0~7.0 t Recoiling I.D : $\varnothing$ 610 mm Recoiling O.D : $\varnothing$ 1,200~2,000 mm	82,000 ton/y	2nd factory
Slitter Line No.2	Coil Thickness : 1.0~3.2 t Coil Width : MAX 1,300 mm Coil I.D : $\varnothing$ 762 Coil O.D : $\varnothing$ 1,200~2,000 mm Coil Weight : 20,000 kg	Skelp Thickness : 1.0~3.2 t Recoiling I.D : $\varnothing$ 610 mm Recoiling O.D : $\varnothing$ 1,200~2,000 mm	42,000 ton/y	1nd factory
Automatic Red Primer Line	Square Pipe □ 19/19~152.4/152.4 □ 30/20~152.4/101.6 mm	Square Pipe Size □ 19/19~152.4/152.4 □ 30/20~152.4/101.6 Length : 5,300~13,000 mm	27,000 ton/y	2nd factory
Universal Testing Machine	Capability : 30,000 kgf			1nd factory 2nd factory
Bending Testing Machine	8/5 “~2”			1nd factory
Zinc-coating Weight Tester	Electrical Balance 0.01~220 g			1nd factory
Coating-thickness Testing Machine	Optical Microscope			1nd factory
	Polishing Machine 0~600 RPM			1nd factory
	Coating-thickness Measuring Instrument 0~500 μ m			1nd factory

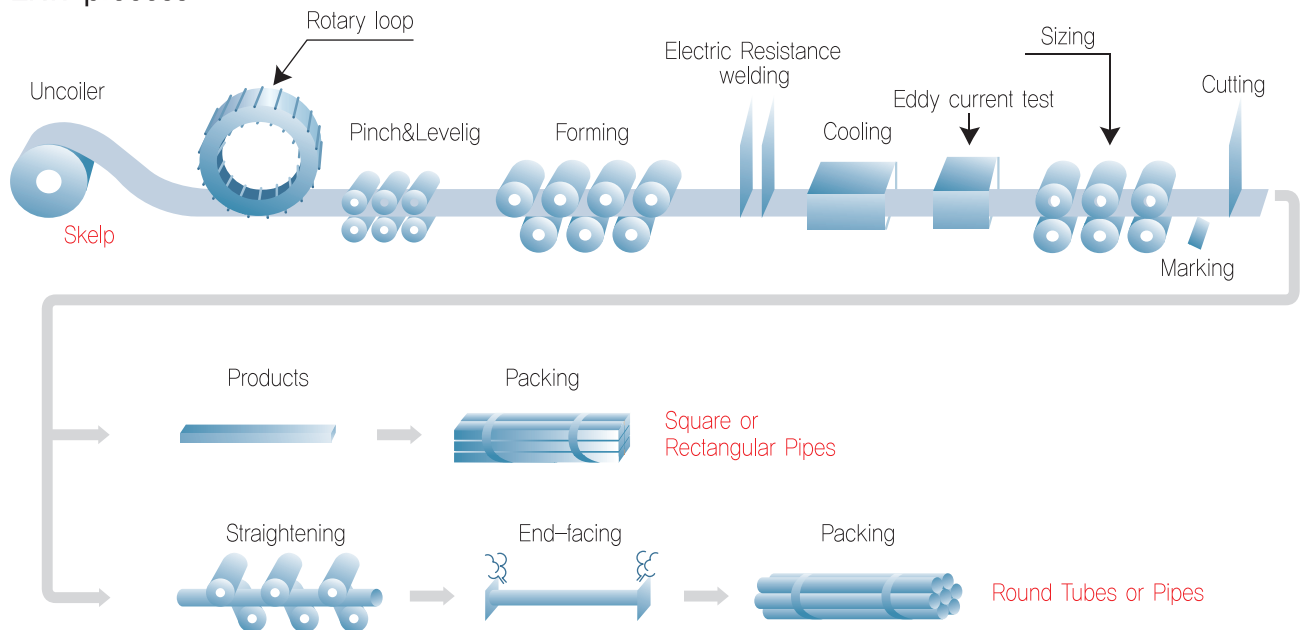


Production Flow Chart

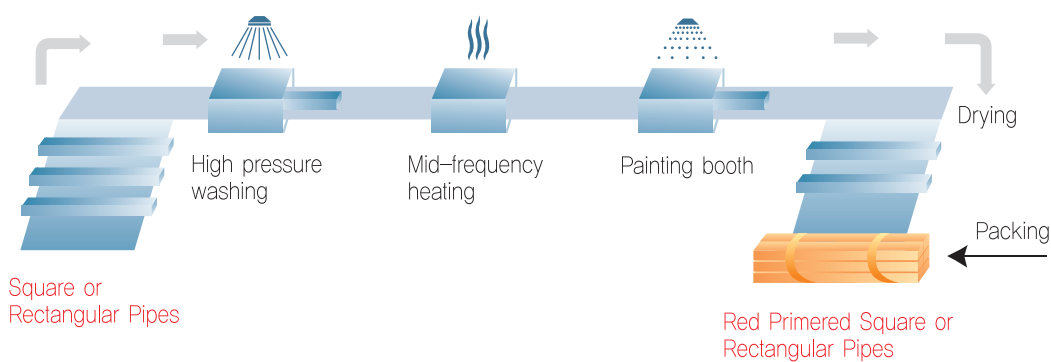
Slitting process



ERW process



Primer process



Production Range

1) Square & Rectangular Pipes, Structural Pipes for Special Purpose

Size (inch)	Outdiameter (mm)	Dimension (mm)	Thickness(mm)														
			1.2	1.4	1.5	1.6	1.8	2.0	2.3	2.9	3.2	4.0	4.5	5.7	6.0	6.5	7.0
3/4"	19,1	15×15															
7/8"	22,2	19×19, 19,1×19,1															
1"	25,4	20×20, 22,2×22,2															
1 1/4"	31,8	30×20, 31,8×22,2 25×25, 25,4×25,4															
1 1/2"	38,1	40×20, 38,1×22,2 30×30, 31,8×31,8															
		*50×25															
2"	50,8	50×30, 50,8×31,8 40×40, 38,1×38,1															
		*60×30, 63,5×31,8															
2 1/2"	63,5	50×50, 50,8×50,8 60×40, 63,5×38,1															
3"	76,3	75×45 60×60, 63,5×63,5															
		*75×50, 76,2×50,8															
		*80×40															
4"	101,6	100×50, 101,6×50,8 75×75, 76,2×76,2															
		*125×50, 127×50,8 *100×75, 101,6×76,2															
5"	127	100×100, 101,6×101,6 125×75, 127×76,2															
		*150×50, 152,4×50,8															
5 1/2"	139,8	*150×75, 152,4×76,2															
		125×125, 127×127 150×100, 152,4×101,6															

 Production range
 Possible production length : 4.2M~13M
 Possible production length : 4.2M~12.5M
 Possible production length : 4.2M~16M

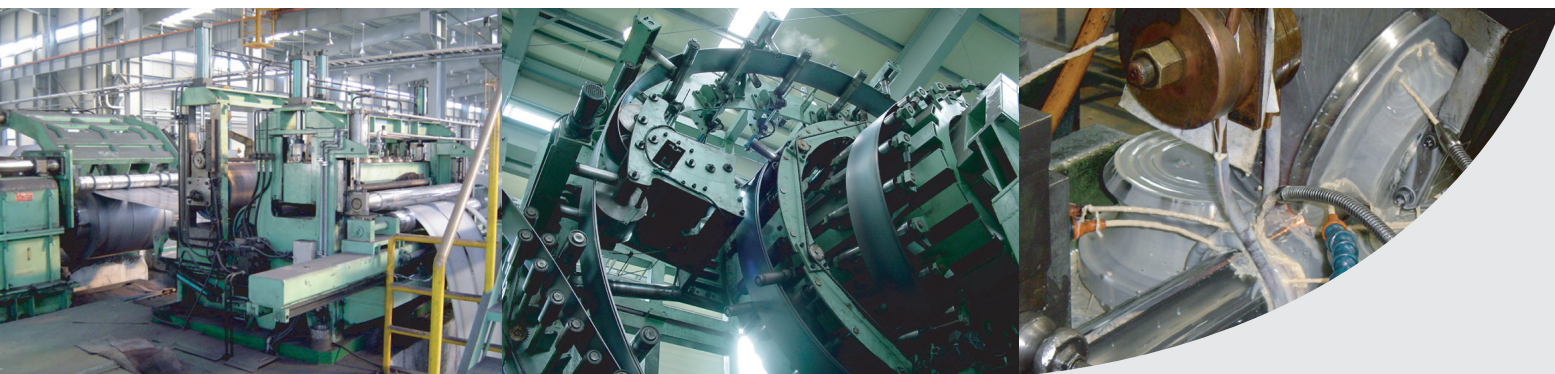
*Asterisks are for order-made dimension



2) Carbon Steel Pipes and Tubes

Size (A)	Size (B)	Outdiameter (mm)	Thickness(mm)														
			1,2	1,4	1,5	1,6	1,8	2,0	2,3	2,9	3,2	4,0	4,5	5,7	6,0	6,5	7,0
15A	1/2"	21,3~21,7															
20A	3/4"	26,7~27,2															
25A	1"	33,4~34,0															
32A	1 1/4"	42,2~42,7															
40A	1 1/2"	48,1~48,6															
50A	2"	59,9~60,5															
65A	2 1/2"	73~76,5															
80A	3"	88,9~89,1															
90A	3 1/2"	101,6															
100A	4"	114,3															
		127															
125A	5"	139,8~141,3															
150A	6"	165,2~168,3															

■ Production range
 □ Possible production length : 4,2M~13M
 □ Possible production length : 4,2M~12,5M
 □ Possible production length : 4,2M~16M



Carbon Steel Pipes for Ordinary Piping

This standard specifies the carbon steel pipes used in piping for steam, water, oil, etc. of comparatively low working pressure.

1) Weight, Dimension and Dimensional Tolerance

KS D 3507(SPP)

Size		Outdiameter (mm)	Outdiameter tolerance		Thickness (mm)	Thickness tolerance	Weight excluding Socket (kg/m)
A	B		Pipes to be threaded with taper threads	Other pipes			
15	1/2	21,7	±0,5mm	±0,5mm	2,65	+Not specified -12,5%	1,25
20	3/4	27,2	±0,5mm	±0,5mm	2,65		1,60
25	1	34,0	±0,5mm	±0,5mm	3,25		2,45
32	1 1/4	42,7	±0,5mm	±0,5mm	3,25		3,16
40	1 1/2	48,6	±0,5mm	±0,5mm	3,25		3,63
50	2	60,5	±0,5mm	±1%	3,65		5,12
65	2 1/2	76,3	±0,7mm	±1%	3,65		6,34
80	3	89,1	±0,8mm	±1%	4,05		8,49
90	3 1/2	101,6	±0,8mm	±1%	4,05		9,74
100	4	114,3	±0,8mm	±1%	4,5		12,2
125	5	139,8	±0,8mm	±1%	4,85		16,1
150	6	165,2	±0,8mm	±1%	4,85		19,2

2) Mechanical Properties

Designation of Class	Tensile test		
	Tensile strength kgf/mm ² (N/mm ²)	Elongation(%)	
		No.11 or No.12 test piece	No.5 test piece
		Longitudinal	Transverse
SPP	Min, 30(294)	Min, 30	Min, 25

3) Weight Calculation Formula

$$W=0,02466t(D-t)$$

W : Weight of pipe(kg/m)
 t : Wall thickness of pipe(mm)
 D : Outdiameter of pipe(mm)

Reference : The values for weight shall be calculated from the following formula assuming 1cm³ of steel to be 7.85g. and be rounded off to 3 significant figures in compliance with KS Q 5002 but, over 1,000kg/m values shall be rounded off to integer of decimal place of kg/m



Carbon Steel Pipes for Ordinary Piping

This standard specifies the carbon steel pipes used in piping for steam, water, oil, etc. of comparatively low working pressure.

1) Weight, Dimension and Dimensional Tolerance

JIS G 3452(SGP)

Size		Outdiameter (mm)	Outdiameter tolerance		Thickness (mm)	Thickness tolerance	Weight excluding Socket (kg/m)
A	B		Pipes to be threaded with taper threads	Other pipes			
15	1/2	21,7	±0,5mm	±0,5mm	2,8	+Not specified -12,5%	1,31
20	3/4	27,2	±0,5mm	±0,5mm	2,8		1,68
25	1	34,0	±0,5mm	±0,5mm	3,2		2,43
32	1 1/4	42,7	±0,5mm	±0,5mm	3,5		3,38
40	1 1/2	48,6	±0,5mm	±0,5mm	3,5		3,89
50	2	60,5	±0,5mm	±1%	3,8		5,31
65	2 1/2	76,3	±0,7mm	±1%	4,2		7,47
80	3	89,1	±0,8mm	±1%	4,2		8,79
90	3 1/2	101,6	±0,8mm	±1%	4,2		10,1
100	4	114,3	±0,8mm	±1%	4,5		12,2
125	5	139,8	±0,8mm	±1%	4,5		15,0
150	6	165,2	±0,8mm	±1,6mm	5,0		19,8

2) Mechanical Properties

Designation of Class	Tensile test							
	Tensile strength kgf/mm ² (N/mm ²)	Specimen Type		Elongation(%)				
				Under 3mm~ Min 4mm	Under 4mm~ Min 5mm	Under 5mm~ Min 6mm	Under 6mm~ Min 7mm	Under 7mm~ Min 8mm
SGP	Min, 290	No.11 test piece	Longitudinal	Min, 30	Min, 30	Min, 30	Min, 30	Min, 30
		No.12 test piece	Longitudinal	Min, 24	Min, 26	Min, 27	Min, 28	Min, 30
		No.5 test piece	Transverse	Min, 19	Min, 20	Min, 22	Min, 24	Min, 25

3) Weight Calculation Formula

$$W=0.02466t(D-t)$$

W : Weight of pipe(kg/m)
 t : Wall thickness of pipe(mm)
 D : Outdiameter of pipe(mm)

Reference : The values for weight shall be calculated from the following formula assuming 1m³ of steel to be 7.85g, and be rounded off to 3 significant figures in compliance with JLS Z 8401, but, over 1,000kg/m values shall be rounded off to integer of decimal place of kg/m

Carbon Steel Tubes for General Structural Purposes

This standard specifies the carbon steel tubes used for civil engineering, architecture, steel towers, scaffoldings, struts, piles for suppression of landslide and other structures.

1) Weight and Dimension

KS D 3566(STK)
JIS G 3444(STK)

Outdiameter (mm)	Thickness (mm)	Weight (kg/m)	Reference			
			Cross sectional area cm ²	Geometrical moment of inertia cm ⁴	Modulus of section	Radius of gyration of area cm
21.7	2.0	0.972	1,238	0.067	0.560	0.700
27.2	2.0	1.24	1,583	1.26	0.930	0.890
	2.3	1.41	1,799	1.41	1.03	0.880
34.0	2.3	1.80	2,291	2.89	1.70	1.12
42.7	2.3	2.29	2,919	5.97	2.80	1.43
	2.5	2.49	3,157	6.40	3.00	1.42
48.6	2.3	2.63	3,345	8.99	3.70	1.64
	2.5	2.84	3,621	9.65	3.97	1.63
	2.8	3.16	4,029	10.6	4.36	1.62
	3.2	3.58	4,564	11.8	4.86	1.61
60.5	2.3	3.30	4,205	17.8	5.90	2.06
	3.2	4.52	5,760	23.7	7.84	2.03
	4.0	5.57	7,100	28.5	9.41	2.00
76.3	2.8	5.08	6,465	43.7	11.5	2.60
	3.2	5.77	7,349	49.2	12.9	2.59
	4.0	7.13	9,085	59.5	15.6	2.58
89.1	2.8	5.96	7,591	70.7	15.9	3.05
	3.2	6.78	8,636	79.8	17.9	3.04
101.6	3.2	7.76	9,892	120	23.6	3.48
	4.0	9.63	12,26	146	28.8	3.45
	5.0	11.9	15,17	177	34.9	3.42
114.3	3.2	8.77	11,17	172	30.2	3.93
	3.5	9.58	12,18	187	32.7	3.92
	4.5	12.2	15,52	234	41.0	3.89
139.8	3.6	12.1	15,40	357	51.1	4.82
	4.0	13.4	17,07	394	56.3	4.80
	4.5	15.0	19,13	438	62.7	4.79
	6.0	19.8	25,22	566	80.9	4.74
165.2	4.5	17.8	22,72	734	88.9	5.68
	5.0	19.8	26,16	808	97.8	5.67
	6.0	23.6	30,01	952	115	5.63
	7.1	27.7	35,26	110×10	134	5.60

* Outdiameter, Thickness and Weight obey above chart unless there are special directions, though on grounds of agreement between consumer and supplier another standard can be applied.



2) Mechanical Properties

Symbol of grade	Tensile strength N/mm ²	Yield strength N/mm ²	Elongation %		Bendability		Flattening
			No.11 test pieces No.12 test pieces	No.5 test pieces	Bend angle	Inside radius (D: outdiameter of tube)	distance between flattening plates(H) (D: outdiameter of tube)
			Longitudinal direction	Transverse direction			
	Seamless, butt-welding, electric resistance welding and arc welding process				Seamless, butt-welding, electric resistance welding process		Seamless, butt-welding, electric resistance welding process
	Full range	Full range	Over 40mm		50mm or under		Full range
STK 290	Min. 290	-	Min. 30	Min. 25	90°	6D	2/3D
STK 400	Min. 400	Min. 235	Min. 23	Min. 18	90°	6D	2/3D
STK 490	Min. 490	Min. 315	Min. 23	Min. 18	90°	6D	7/8D
STK 500	Min. 500	Min. 355	Min. 15	Min. 10	90°	6D	7/8D
STK 540	Min. 540	Min. 390	Min. 20	Min. 16	90°	6D	7/8D
STK 590	Min. 590	Min. 440	Min. 20	Min. 16	90°	6D	7/8D
STK 690	Min. 690	Min. 540	Min. 20	Min. 16	90°	6D	7/8D

3) Dimensional Tolerance

Unless otherwise specified, the tolerance on outdiameter and thickness of the tube shall be applied to Class 1.

► Thickness tolerance

Classification	Tolerances	
	Seamless steel tube	Other than seamless steel tube
Class 1	Under 4mm +0.6mm -0.5mm	Under 4mm +0.6mm -0.5mm
	Min. 4mm +15% -12.5%	4mm to 12mm excl. +15% -12.5%
Class 2	Under 3mm ±0.3mm Min. 3mm ±10%	Under 3mm ±0.3mm 3mm to 12mm excl. ±10%

► Outdiameter tolerance

Classification	Tolerances
Class 1	Under 50mm ±0.5mm Min 50mm ±1%
Class 2	Under 50mm ±0.25mm Min 50mm ±0.5%

4) Weight Calculation Formula

$$W=0.02466t(D-t)$$

W : Weight of pipe(kg/m)
 t : Wall thickness of pipe(mm)
 D : Outdiameter of pipe(mm)

Reference : The values for weight shall be calculated from the following formula assuming 1m³ of steel to be 7,85g, and be rounded off to 3 significant figures in compliance with KS Q 5002(JIS Z 8401), but, over 1,000kg/m values shall be rounded off to integer of decimal place of kg/m

Carbon Steel Square Pipes for General Structural Purposes

This standard specifies carbon steel square pipes used for civil engineering, architecture and other structures.

1) Weight and Dimension

► Square

KS D 3568(SPSR)
JIS G 3466(STKR)

Dimensions		Weight	Area	Moment of Inertia	Section Modulus	Radius of Gyration
A×B	Thickness t					
mm	mm	kg/m	cm ²	cm ⁴	cm ³	cm
20×20	1,2	0,697	0,865	0,53	0,52	0,769
	1,6	0,872	1,123	0,67	0,65	0,751
25×25	1,2	0,867	1,105	1,03	0,824	0,965
	1,6	1,12	1,432	1,27	1,02	0,942
30×30	1,2	1,06	1,345	1,83	1,22	1,17
	1,6	1,38	1,752	2,31	1,54	1,15
40×40	1,6	1,88	2,392	5,79	2,90	1,56
	2,3	2,62	3,332	7,73	3,86	1,52
50×50	1,6	2,38	3,032	11,7	4,68	1,96
	2,3	3,34	4,252	15,9	6,34	1,93
	3,2	4,50	5,727	20,4	8,16	1,89
60×60	1,6	2,88	3,672	20,7	6,89	2,37
	2,3	4,06	5,172	28,3	9,44	2,34
	3,2	5,50	7,007	36,9	12,3	2,30
75×75	1,6	3,64	4,632	41,3	11,0	2,99
	2,3	5,14	6,552	57,1	15,2	2,95
	3,2	7,01	8,927	75,5	20,1	2,91
	4,5	9,55	12,17	98,6	26,3	2,85
90×90	2,3	6,23	7,932	101	22,4	3,56
	3,2	8,51	10,85	135	29,9	3,52
100×100	2,3	6,95	8,852	140	27,9	3,97
	3,2	9,52	12,13	187	37,5	3,93
	4,0	11,7	14,95	226	45,3	3,89
	4,5	13,1	16,67	249	49,9	3,87
	6,0	17,0	21,63	311	62,3	3,79
125×125	3,2	12,0	15,33	376	60,1	4,95
	4,5	16,6	21,17	506	80,9	4,89
	5,0	18,3	23,36	553	88,4	4,86
	6,0	21,7	27,63	641	103	4,82

*Dimension and weight obey above chart unless there are special directions, though on grounds of agreement between consumer and supplier another standard can be applied.



► Rectangular

KS D 3568(SPSR)
JIS G 3466(STKR)

Dimensions		Weight	Area	Moment of Inertia		Section Modulus		Radius of Gyration	
A×B	Thickness t			I _x	I _y	Z _x	Z _y	i _x	i _y
mm	mm	kg/m	cm ²	cm ⁴	cm ⁴	cm ³	cm ³	cm	cm
30×20	1.2	0.868	1,105	1,34	0,711	0,890	0,711	1,10	0,802
	1.6	1,124	1,4317	1,66	0,879	1,11	0,879	1,80	0,784
40×20	1.2	1,053	1,3453	2,73	0,923	1,36	0,923	1,42	0,828
	1.6	1,357	1,7517	3,43	1,15	1,72	1,15	1,40	0,810
50×30	1.6	1,88	2,392	7,96	3,60	3,18	2,40	1,82	1,23
	2.3	2,62	3,332	10,6	4,76	4,25	3,17	1,79	1,20
60×30	1.6	2,13	2,721	12,5	4,25	4,16	2,83	2,15	1,25
	2.3	2,98	3,792	16,8	5,65	5,61	3,76	2,11	1,22
	3.2	3,99	5,082	21,4	7,08	7,15	4,72	2,05	1,18
75×45	1.6	2,88	3,672	28,4	12,9	7,56	5,75	2,78	1,88
	2.3	4,06	5,172	38,9	17,6	10,4	7,82	2,74	1,84
	3.2	5,50	7,007	50,8	22,8	13,5	10,1	2,69	1,80
80×40	1.6	2,88	3,672	30,7	10,5	7,68	5,26	2,89	1,69
	2.3	4,06	5,172	42,1	14,3	10,5	7,14	2,85	1,66
	3.2	5,50	7,007	54,9	18,4	13,7	9,21	2,80	1,62
100×50	1.6	3,64	4,632	61,3	21,1	12,3	8,43	3,64	2,13
	2.3	5,14	6,552	84,8	29,0	17,0	11,6	3,60	2,10
	3.2	7,01	8,927	112	38,0	22,5	15,2	3,55	2,06
	4.5	9,55	12,17	147	48,9	29,3	19,5	3,47	2,00
125×75	2.3	6,95	8,852	192	87,5	30,6	23,3	4,65	3,14
	3.2	9,52	12,13	257	117	41,1	31,1	4,60	3,10
	4.0	11,7	14,95	311	141	49,7	37,5	4,56	3,07
	4.5	13,1	16,67	342	155	54,8	41,2	4,53	3,04
	6.0	17,0	21,63	428	192	68,5	51,1	4,45	2,98
150×75	3.2	10,8	13,73	402	137	53,6	36,6	5,41	3,16
150×100	3.2	12,0	15,33	488	262	65,1	52,5	5,64	4,14
	4.5	16,6	21,17	658	352	87,7	70,4	5,58	4,08
	6.0	21,7	27,63	835	444		88,8	5,55	4,01

*Dimension and weight obey above chart unless there are special directions, though on grounds of agreement between consumer and supplier another standard can be applied.

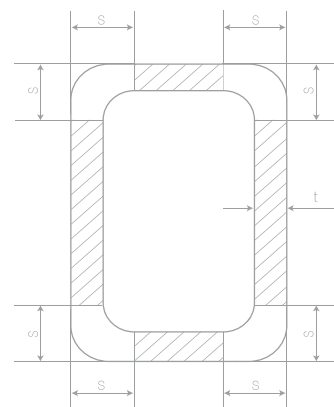
2) Mechanical Properties

Symbol of grade	Tensile test		
	Tensile strength N/mm ² (kgf/mm ²)	Yield strength N/mm ² (kgf/mm ²)	Elongation(No.5 test piece(%))
SPSR400 (STKR400)	Min. 400 (Min. 400)	Min. 245 (Min. 245)	Min. 23 (Min. 23)
SPSR490 (STKR490)	Min. 490 (Min. 490)	Min. 325 (Min. 325)	Min. 23 (Min. 23)
SPSR540	Min. 540	Min. 390	Min. 20
SPSR590	Min. 590	Min. 440	Min. 20

3) Dimensional Tolerance

specified item and dimension		Dimensional tolerance
Length of side	Max. 100mm	±1.5mm
	Over. 100mm	±1.5%
Unevenness of flat plate portion for each side	Side length Max. 100mm	Max. 0.5mm
	Side length Over. 100mm	Max. 0.5% of side length
Angularity made between adjacent flat plate portions		±1.5°
Dimension at corner : S		Max. 3t
Length		+ not specified - 0mm
Unstraightness		Max. 0.3% of whole length
Wall thickness	Square steel pipe manufactured by welding	Up to 3mm±3mm Min. 3mm±10%
	Seamless square steel pipe	Up to 4mm±6mm Min. 4mm±15%

- Remarks
1. The term "flat plate portion" is defined as the hatched portion as shown in the following figure.
 2. The tolerance on dimension at corner may be changed by agreement between the purchaser and the manufacturer.
 3. The tolerance on unstraightness shall be applied to the upper to lower and right to left bend with a long pitch.
 4. The tolerance on wall thickness shall be applied to the flat plate portion.



4) Weight Calculation Formula

$$W = 0.0157t(A + B - 3.287t) \quad \text{Where}$$

W : Weight of the square tube(kg/m)
 t : Wall thickness of square tube(mm)
 D : Outside diameter of the tube(mm)

- Remarks
- The values for weight shall be calculated from the following formula assuming 1cm³ of steel to be 7.85g, and be rounded off to 3 significant figures in compliance with KS Q 5002(JIS Z 8401).
 but, over 1,000kg/m values shall be rounded off to integer of decimal place of kg/m



Carbon Steel Tubes for Machine Structural Purposes

This standard specifies carbon steel tubes used for machinery, automobiles, furniture, appliances and other machine parts.

1) Class and Designation

KS D 3517
JIS G 3445

Class		Designation
Class 11	A	STKM 11A
Class 12	A	STKM 12A
	B	STKM 12B
	C	STKM 12C
Class 13	A	STKM 13A
	B	STKM 13B
	C	STKM 13C

Where the subclassification letter symbol A, B or C is used to denote the differences affected by process to manufacture tubes, cold working, heat treating, and etc.

A denotes hot-finished or heat-treated, C denotes coil-finished or stress relief annealed and B denotes a process other than A or C. For example, B corresponds to electric resistance welded(E-G). It also classifies mechanical properties of the tubes that have the same chemical composition, provided that there remain effects cold working.

2) Chemical Composition

Class		Designation	Chemical Composition (%)					
			C	Si	Mn	P	S	Nb or V
Class 11	A	STKM 11A	Max, 0,12	Max, 0,35	Max, 0,60	Max, 0,040	Max, 0,040	—
Class 12	A	STKM 12A	Max, 0,20	Max, 0,35	Max, 0,06	Max, 0,040	Max, 0,040	—
	B	STKM 12B						
	C	STKM 12C						
Class 13	A	STKM 13A	Max, 0,25	Max, 0,35	0,30~0,90	Max, 0,040	Max, 0,040	—
	B	STKM 13B						
	C	STKM 13C						



3) Mechanical Properties

Class		Designation	Tensile Strength N/mm ² (kgf/mm ²)	Yield Strength N/mm ² (kgf/mm ²)	Elongation%		Flattening test Distance between flat plates(H) (Disoutside dia. of the tube)	Bend test	
					No.4 No.11 No.12 test piece Longitudinal	No.4 No.5 Transversel		Bend angle	Inside radius (Disoutside dia. of the tube)
Class 11	A	STKM 11A	Min, 290(30)	—	Min, 35	Min, 30	1/2 D	180°	4D
Class 12	A	STKM 12A	Min, 340(35)	Min, 175(18)	Min, 35	Min, 30	2/3 D	90°	6D
	B	STKM 12B	Min, 390(40)	Min, 275(28)	Min, 25	Min, 20	2/3 D	90°	6D
	C	STKM 12C	Min, 470(48)	Min, 355(36)	Min, 20	Min, 15	—	—	—
Class 13	A	STKM 13A	Min, 370(38)	Min, 215(22)	Min, 30	Min, 25	2/3 D	90°	6D
	B	STKM 13B	Min, 440(45)	Min, 305(31)	Min, 20	Min, 15	2/3 D	90°	6D
	C	STKM 13C	Min, 510(52)	Min, 380(39)	Min, 15	Min, 10	—	—	—

4) Dimensional Tolerance

► Tolerance on outside diamter

Division	Tolerance on outside diamter	
No.1	Under 50mm	±0,5mm
	50mm and over	±1%
No.2	Under 50mm	±0,25mm
	50mm and over	±0,5%
No.3	Under 25mm	±0,12mm
	25mm and over to and exct. 40mm	±0,15mm
	40mm and over to and exct. 50mm	±0,18mm
	50mm and over to and exct. 60mm	±0,20mm
	60mm and over to and exct. 70mm	±0,23mm
	70mm and over to and exct. 80mm	±0,25mm
	80mm and over to and exct. 90mm	±0,30mm
	90mm and over to and exct. 100mm	±0,40mm
	100mm and over	±0,5%

► Tolerance on wall thickness

Division	Tolerance on wall thickness	
No.1	Under 4mm	+0,6mm -0,5mm
	4mm and over	+15% -12,5%
No.2	Under 3mm	±0,3mm
	3mm and over	±10%
No.3	Under 2mm	±0,15mm
	2mm and over	±8%



Coated Steel Pipes for Plastic Housing

This standard specifies the galvanized steel pipes used for agricultural vinyl housing.

1) Dimension and Weight

KS D 3760(SPVH)
(Unit : kg/m)

Designation	Outside diameter (mm)	Thickness(mm)					
		1.2	1.4	1.5	1.6	1.7	2.0
15	15.9	0.435	0.501	0.533	0.564		
19	19.1	0.530	0.611	0.651	0.690		
22	22.2	0.621	0.718	0.766	0.813		
25	25.4	0.716	0.829	0.884	0.939	0.994	
28	28.6	0.811	0.939	1.00	1.07	1.13	
31	31.8	0.906	1.05	1.12	1.19	1.26	
38	38.1	1.09	1.27	1.35	1.44	1.53	1.78
50	50.8	1.47	1.71	1.82	1.94	2.06	2.41

2) Mechanical Properties

Designation	Tensile Test		
	Tensile Strength N/mm ²	Yield Point N/mm ²	Elongation %
SPVH	Min. 270	Min. 205	Min. 20
SPVHS	Min. 400	Min. 295	Min. 18

3) Dimensional Tolerance

Item		Tolerance
Outside diameter		0~+0.5mm
Thickness	Under 1.6	0~+0.13mm
	Min. 1.6	0~+0.17mm

4) Zinc Coating Weight

Method of test	Zinc Coating Weight g/m ²	Average coating-thickness of μm
Testing with pipe	Min. 150	Min. 6

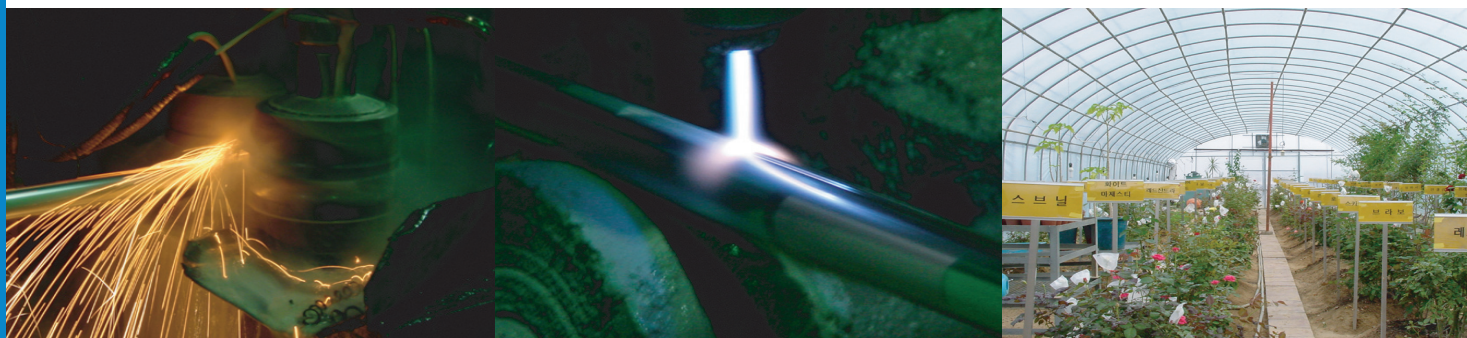
5) The thickness of plating on both sides with the same Coating Weight on both sides of the Minimum

Plating division	Coated duplex coating weight g/m ² (Two-sided)	Average coating Weight sides three-point method g/m ² (Two-sided)	One sides point of minimum coating weight g/m ² (Two-sided)
Non-alloyed	(Z06) ^a	(60) ^a	(51) ^a
	Z08	80	68
	Z10	100	85
	Z12	120	102
	Z18	180	153
	Z20	200	170
	Z22	220	187
	Z25	250	213
	Z27	275	234
	Z35	350	298
	Z45	450	383
	Z60	600	510

Remarks 1. One kind of processing, three kinds of processing and treating the two kinds of coating weight Symbol Z35, Z45, Z60 does not apply.
2. Average coating weight on both sides of the three-point method of plating materials taken from published measurements of the average value of three specimens shall be applied.
3. At least one point on both sides of the plating coating weight is re-published measurements taken from the minimum of three specimens shall be applied.
4. Maximum coating weight on both sides of the plating between the purchaser and the manufacturer may consult.
^a () Is agreed upon between the purchaser and the manufacturer can be applied.

6) Equivalent coating thickness

Plating coating weight symbol	Z06	Z08	Z10	Z12	Z18	Z20	Z22	Z25	Z27	Z35	Z45	Z60
Equivalent coating thickness (mm)	0.013	0.017	0.021	0.026	0.034	0.040	0.043	0.049	0.054	0.064	0.080	0.102





ASTM A500 Carbon Steel Structural Tubing in Shapes

1) Weight, Dimension

► Square

Size		Weight			Size (SI Unit)		Tolerance	
Outdiameter in.	Thickness in.	lb/ft	kg/ft	kg/m	Outdiameter (mm)	Thickness (mm)	Outdiameter in.	Thickness in.
3/4×3/4	0,047	0,443	0,201	0,659	19,1×19,1	1,19	±0,02	±10%
	0,056	0,519	0,236	0,733		1,42	±0,02	±10%
	0,063	0,577	0,262	0,859		1,60	±0,02	±10%
	0,072	0,649	0,294	0,965		1,83	±0,02	±10%
7/8×7/8	0,047	0,523	0,237	0,778	22,2×22,2	1,19	±0,02	±10%
	0,056	0,615	0,279	0,915		1,42	±0,02	±10%
	0,063	0,684	0,310	1,02		1,60	±0,02	±10%
	0,072	0,771	0,350	1,15		1,83	±0,02	±10%
1×1	0,047	0,603	0,274	0,897	25,4×25,4	1,19	±0,02	±10%
	0,056	0,710	0,322	1,06		1,42	±0,02	±10%
	0,063	0,791	0,359	1,18		1,60	±0,02	±10%
	0,072	0,893	0,406	1,33		1,83	±0,02	±10%
	0,078	0,960	0,435	1,43		1,98	±0,02	±10%
	0,083	1,02	0,463	1,52		2,11	±0,02	±10%
	0,095	1,14	0,517	1,70		2,41	±0,02	±10%
	0,120	1,39	0,630	2,07		3,05	±0,02	±10%
1 1/4×1 1/4	0,056	0,900	0,408	1,34	31,8×31,8	1,42	±0,02	±10%
	0,063	1,01	0,456	1,50		1,60	±0,02	±10%
	0,072	1,14	0,516	1,70		1,83	±0,02	±10%
	0,078	1,23	0,556	1,83		1,98	±0,02	±10%
	0,083	1,30	0,590	1,93		2,11	±0,02	±10%
	0,095	1,47	0,665	2,19		2,41	±0,02	±10%
	0,120	1,80	0,817	2,68		3,05	±0,02	±10%
	0,125	1,87	0,847	2,78		3,18	±0,02	±10%
1 1/2×1 1/2	0,056	1,09	0,495	1,62	38,1×38,1	1,42	±0,02	±10%
	0,063	1,22	0,553	1,81		1,60	±0,02	±10%
	0,072	1,38	0,627	2,06		1,83	±0,02	±10%
	0,078	1,49	0,676	2,22		1,98	±0,02	±10%
	0,083	1,58	0,716	2,38		2,11	±0,02	±10%
	0,095	1,79	0,811	2,66		2,41	±0,02	±10%
	0,120	2,21	1,00	3,29		3,05	±0,02	±10%
	0,125	2,29	1,04	3,41		3,18	±0,02	±10%
2×2	0,120	2,94	1,33	4,38	50,8×50,8	3,05	±0,02	±10%
	0,125	3,05	1,38	4,54		3,18	±0,02	±10%
	0,156	3,70	1,68	5,50		3,96	±0,02	±10%
	0,180	4,17	1,89	6,21		4,57	±0,02	±10%
	0,188	4,31	1,96	6,42		4,78	±0,02	±10%
	0,250	5,40	2,45	8,04		6,35	±0,02	±10%
2 1/2×2 1/2	0,120	3,76	1,70	5,59	63,5×63,5	3,05	±0,02	±10%
	0,125	3,90	1,77	5,80		3,18	±0,02	±10%
	0,156	4,76	2,16	7,08		3,96	±0,02	±10%
	0,180	5,40	2,45	8,03		4,57	±0,02	±10%
	0,188	5,59	2,53	8,32		4,78	±0,02	±10%
	0,250	7,10	3,22	10,57		6,35	±0,02	±10%
3×3	0,156	5,82	2,64	8,66	76,2×76,2	3,96	±0,025	±10%
	0,180	6,62	3,00	9,85		4,57	±0,025	±10%
	0,188	6,86	3,11	10,2		4,78	±0,025	±10%
	0,250	8,80	3,99	13,1		6,35	±0,025	±10%
4×4	0,156	7,94	3,60	11,82	101,6×101,6	3,96	±0,03	±10%
	0,180	9,07	4,11	13,50		4,57	±0,03	±10%
	0,188	9,41	4,27	14,00		4,78	±0,03	±10%
5×5	0,180	11,5	5,22	17,1	127,0×127,0	4,57	±0,03	±10%
	0,188	12,0	5,43	17,8		4,78	±0,03	±10%
	0,250	15,6	7,08	23,2		6,35	±0,03	±10%

► Rectangular

Size		Weight			Size (SI Unit)		Tolerance	
Outdiameter in.	Thickness in.	lb/ft	kg/ft	kg/m	Outdiameter (mm)	Thickness (mm)	Outdiameter in.	Thickness in.
1 1/4 × 7/8	0,063	0,82	0,37	1,22	31,8 × 22,2	1,60	±0,02	±10%
	0,072	0,93	0,42	1,38		1,83	±0,02	±10%
	0,078	0,99	0,45	1,46		1,98	±0,02	±10%
	0,083	1,05	0,48	1,56		2,11	±0,02	±10%
	0,095	1,17	0,53	1,74		2,41	±0,02	±10%
1 1/2 × 7/8	0,063	0,93	0,42	1,38	38,1 × 22,2	1,60	±0,02	±10%
	0,072	1,05	0,48	1,56		1,83	±0,02	±10%
	0,078	1,12	0,51	1,67		1,98	±0,02	±10%
	0,083	1,19	0,54	1,77		2,11	±0,02	±10%
	0,095	1,33	0,60	1,98		2,41	±0,02	±10%
1 × 2	0,063	1,22	0,553	1,81	25,4 × 50,8	1,60	±0,02	±10%
	0,072	1,38	0,627	2,06		1,83	±0,02	±10%
	0,078	1,49	0,676	2,22		1,98	±0,02	±10%
	0,083	1,58	0,716	2,35		2,11	±0,02	±10%
	0,095	1,79	0,811	2,66		2,41	±0,02	±10%
	0,120	2,21	1,00	3,29		3,05	±0,02	±10%
	0,125	2,29	1,04	3,41		3,18	±0,02	±10%
2 × 1 1/4	0,063	1,30	0,59	1,94	50,8 × 31,8	1,60	±0,02	±10%
	0,072	1,48	0,67	2,20		1,83	±0,02	±10%
	0,078	1,59	0,72	2,37		1,98	±0,02	±10%
	0,083	1,69	0,77	2,51		2,11	±0,02	±10%
	0,095	1,90	0,86	2,83		2,41	±0,02	±10%
	0,120	2,34	1,06	3,48		3,05	±0,02	±10%
	0,125	2,42	1,10	3,60		3,18	±0,02	±10%
2 1/2 × 1 1/4	0,063	1,52	0,69	2,26	63,5 × 31,8	1,60	±0,02	±10%
	0,072	1,73	0,78	2,57		1,83	±0,02	±10%
	0,078	1,85	0,84	2,76		1,98	±0,02	±10%
	0,083	1,97	0,89	2,93		2,11	±0,02	±10%
	0,095	2,22	1,01	3,31		2,41	±0,02	±10%
	0,120	2,74	1,24	4,08		3,05	±0,02	±10%
	0,125	2,85	1,29	4,24		3,18	±0,02	±10%
2 1/2 × 1 1/2	0,063	1,63	0,74	2,42	63,5 × 38,1	1,60	±0,02	±10%
	0,072	1,85	0,84	2,75		1,83	±0,02	±10%
	0,078	1,99	0,90	2,96		1,98	±0,02	±10%
	0,083	2,11	0,96	3,14		2,11	±0,02	±10%
	0,095	2,38	1,08	3,54		2,41	±0,02	±10%
	0,120	2,95	1,34	4,39		3,05	±0,02	±10%
	0,125	3,06	1,39	4,55		3,18	±0,02	±10%
2 × 3	0,095	3,02	1,37	4,51	50,8 × 76,2	2,41	±0,025	±10%
	0,120	3,76	1,70	5,59		3,05	±0,025	±10%
	0,125	3,90	1,77	5,80		3,18	±0,025	±10%
	0,156	4,76	2,16	7,08		3,96	±0,025	±10%
	0,180	5,40	2,45	8,03		4,57	±0,025	±10%
	0,188	5,59	2,53	8,32		4,78	±0,025	±10%
	0,250	7,10	3,22	10,60		6,35	±0,025	±10%
2 × 4	0,095	3,68	1,67	5,48	50,8 × 101,6	2,41	±0,03	±10%
	0,120	4,57	2,07	6,81		3,05	±0,03	±10%
	0,125	4,75	2,15	7,07		3,18	±0,03	±10%
	0,156	5,82	2,64	8,66		3,96	±0,03	±10%
	0,180	6,62	3,00	9,85		4,57	±0,03	±10%
	0,188	6,86	3,11	10,20		4,78	±0,03	±10%
	0,250	8,80	3,99	13,1		6,35	±0,03	±10%
3 × 4	0,120	5,39	2,44	8,02	76,2 × 101,6	2,41	±0,03	±10%
	0,125	5,60	2,54	8,33		3,05	±0,03	±10%
	0,156	6,88	3,12	10,2		3,18	±0,03	±10%
	0,180	7,84	3,56	11,7		3,96	±0,03	±10%
	0,188	8,14	3,69	12,1		4,57	±0,03	±10%
	0,250	10,5	4,76	15,6		4,78	±0,03	±10%
2 × 5	0,120	5,39	2,44	8,02	50,8 × 127,0	3,05	±0,03	±10%
	0,125	5,60	2,54	8,33		3,18	±0,03	±10%
	0,156	6,88	3,12	10,2		3,96	±0,03	±10%
	0,180	7,84	3,56	11,7		4,57	±0,03	±10%
	0,188	8,14	3,69	12,1		4,78	±0,03	±10%
	0,250	10,5	4,76	15,6		6,35	±0,03	±10%
3 × 5	0,120	6,21	2,81	9,21	76,2 × 127,0	3,05	±0,03	±10%
	0,125	6,45	2,92	9,57		3,18	±0,03	±10%
	0,156	7,96	3,60	11,80		3,96	±0,03	±10%
	0,180	9,07	4,11	13,50		4,57	±0,03	±10%
	0,188	9,44	4,27	14,00		4,78	±0,03	±10%
	0,250	12,20	5,53	18,20		6,35	±0,03	±10%

Size		Weight			Size (SI Unit)		Tolerance	
Outdiameter in.	Thickness in.	lb/ft	kg/ft	kg/m	Outdiameter (mm)	Thickness (mm)	Outdiameter in.	Thickness in.
2×6	0,120	6,21	2,81	9,21	50,8×152,4	3,05	±1%	±10%
	0,125	6,45	2,92	9,57		3,18	±1%	±10%
	0,156	7,96	3,60	11,80		3,96	±1%	±10%
	0,180	9,07	4,11	13,50		4,57	±1%	±10%
	0,188	9,44	4,27	14,00		4,78	±1%	±10%
	0,250	12,20	5,53	18,20		6,35	±1%	±10%
3×6	0,120	7,04	3,19	10,47	76,2×152,4	3,05	±1%	±10%
	0,125	7,32	3,32	10,89		3,18	±1%	±10%
	0,156	9,01	4,09	13,40		3,96	±1%	±10%
	0,180	10,28	4,66	15,30		4,57	±1%	±10%
	0,188	10,74	4,87	15,98		4,78	±1%	±10%
	0,250	13,91	6,31	20,70		6,35	±1%	±10%
4×6	0,120	7,85	3,56	11,68	101,6×152,4	3,05	±1%	±10%
	0,125	8,17	3,71	12,16		3,18	±1%	±10%
	0,156	10,07	4,57	14,98		3,96	±1%	±10%
	0,180	11,53	5,23	17,15		4,57	±1%	±10%
	0,188	12,02	5,45	17,88		4,78	±1%	±10%
	0,250	15,62	7,09	23,24		6,35	±1%	±10%

*Dimension and weight obey above chart unless there are special directions, though on grounds of agreement between consumer and supplier another standard can be applied.

2) Mechanical Properties

Symbol of grade	Tensile Test		
	Tensile Strength MPa(ksi)	Yield Strength MPa(ksi)	Elongation %
Grade A	310MPa(45,000psi)	270MPa(39,000psi)	Min. 25
Grade B	400MPa(58,000psi)	315MPa(46,000psi)	Min. 23
Grade C	425MPa(62,000psi)	345MPa(50,000psi)	Min. 21
Grade D	400MPa(58,000psi)	250MPa(36,000psi)	Min. 23

3) Dimensional Tolerance

specified item and dimension		Dimensional tolerance
Length of slide	Max. 2 1/2 in.	0,02 in. (0,5mm)
	Max. 2 1/2 ~ 3 1/2 in.	0,025 in. (0,6mm)
	Max. 3 1/2 ~ 5 1/2 in.	0,03 in. (0,8mm)
	Over. 5 1/2 in.	1%
Distortion(3ft per)	Max. 1 1/2 in.	0,050 in. (1,3mm)
	Max. 1 1/2 ~ 2 1/2 in.	0,062 in. (1,6mm)
	Max. 2 1/2 ~ 4 in.	0,075 in. (1,9mm)
	Max. 4 ~ 6 in.	0,087 in. (2,2mm)
	Max. 6 ~ 8 in.	0,100 in. (2,5mm)
	Max. 8 in.	0,112 in. (2,8mm)
Angularity made between adjacent flat plate portions		90° ±2,0°
Dimension at corner : R		Max. 3t
Wall thickness		±10%
Length	Max. 22Ft	1/4 ~ 1/2 in.(6~13mm)
	Over. 22Ft	1/4 ~ 3/4 in.(6~19mm)

ASTM A500 Carbon Steel Structural Tubing in Rounds

1) Weight, Dimension

Size in	Outdiameter		Thickness		Weight		
	in	mm	in	mm	lb/ft	kg/ft	kg/m
1/2	0.840	21.3	0.109	2.77	0.85	0.39	1.27
3/4	1.050	26.7	0.113	2.87	1.13	0.51	1.69
1	1.315	33.4	0.104	2.64	1.34	0.61	2.00
	1.315	33.4	0.133	3.38	1.68	0.76	2.50
1 1/4	1.660	42.2	0.110	2.79	1.81	0.82	2.71
	1.660	42.2	0.140	3.56	2.27	1.03	3.39
	1.660	42.2	0.190	4.85	3.00	1.36	4.47
1 1/2	1.900	48.3	0.114	2.90	2.17	0.98	3.25
	1.900	48.3	0.145	3.68	2.72	1.23	4.05
	1.900	48.3	2.00	5.08	3.63	1.64	5.41
2	2.375	60.3	0.121	3.07	2.92	1.32	4.33
	2.375	60.3	0.154	3.91	3.65	1.66	5.44
	2.375	60.3	0.218	5.54	5.02	2.28	7.48
2 1/2	2.875	73.0	0.156	3.96	4.53	2.05	6.74
	2.875	73.0	0.188	4.78	5.40	2.45	8.04
	2.875	73.0	0.203	5.16	5.79	2.63	8.63
	2.875	73.0	0.276	7.01	7.66	3.47	11.41
3	3.500	88.9	0.156	3.96	5.58	2.53	8.29
	3.500	88.9	0.188	4.78	6.63	3.01	9.92
	3.500	88.9	0.226	5.49	7.58	3.44	11.29
3 1/2	4.000	101.6	0.156	3.96	6.40	2.90	9.53
	4.000	101.6	0.188	4.78	7.63	3.46	11.41
	4.000	101.6	0.226	5.49	9.11	4.13	13.57
4	4.500	114.3	0.156	3.96	7.25	3.29	10.78
	4.500	114.3	0.188	4.78	8.64	3.92	12.91
	4.500	114.3	0.219	5.56	10.00	4.54	14.91
	4.500	114.3	0.237	6.02	10.79	4.89	16.07
5	5.563	141.3	0.258	6.55	14.62	6.63	21.77
	5.563	141.3	0.375	9.53	20.78	9.43	30.97
6	6.625	168.3	0.280	7.11	18.97	8.60	28.26

*Dimension and weight obey above chart unless there are special directions, though on grounds of agreement between consumer and supplier another standard can be applied.

2) Mechanical Properties

Symbol of grade	Tensile Test		
	Tensile Strength MPa(ksi)	Yield Strength MPa(ksi)	Elongation %
Grade A	310MPa(45,000psi)	230MPa(33,000psi)	Over, 25
Grade B	400MPa(58,000psi)	290MPa(42,000psi)	Over, 23
Grade C	425MPa(62,000psi)	315MPa(46,000psi)	Over, 21
Grade D	400MPa(58,000psi)	250MPa(36,000psi)	Over, 23

3) Dimensional Tolerance

specified item and dimension		Dimensional tolerance
Outside diameter	Max, 1 1/2 in.	±0.5 %
	Over, 2 in.	±0.75%
Wall thickness		±10%
Length	Max, 22Ft	1/4 ~ 1/2 in.(6~13mm)
	Over, 22Ft	1/4 ~ 3/4 in.(6~19mm)



ASTM A252 Welded Steel Pipe Piles

1) Weight, Dimension

Outdiameter		Thickness		Weight		
in	mm	in	mm	lb/ft	kg/ft	kg/m
6	152,4	0,134	3,40	8,40	3,84	12,49
		0,141	3,58	8,83	4,03	13,14
		0,156	3,96	9,75	4,45	14,50
		0,164	4,17	10,23	4,68	15,24
		0,172	4,37	10,72	4,90	15,95
8	203,2	0,141	3,58	11,85	5,41	17,62
		0,172	4,37	14,39	6,58	21,43
8 5/8	219	0,109	2,77	9,92	4,54	14,77
		0,141	3,58	12,49	5,84	19,02
		0,172	4,37	15,54	7,10	23,13
		0,188	4,78	16,96	7,75	25,25
		0,203	5,17	18,28	8,37	27,26
		0,219	5,57	19,68	9,00	29,32
		0,250	6,35	22,38	10,23	33,30
		0,277	7,04	27,72	11,30	36,80
		0,312	7,92	27,73	12,66	41,23
		0,322	8,18	28,58	13,06	42,53
		0,344	8,74	30,45	13,92	45,32
		0,375	9,56	33,07	15,16	49,38
		0,438	11,13	38,33	17,52	57,05
		0,500	12,7	43,43	19,84	64,61
10	254	0,109	2,77	11,53	5,27	17,16
		0,120	3,05	12,67	5,80	18,87
		0,134	3,40	14,13	6,45	21,01
		0,141	3,58	14,86	6,79	22,11
		0,150	3,81	15,79	7,22	23,51
		0,164	4,17	17,24	7,89	25,69
		0,172	4,37	18,07	8,26	26,90
		0,179	4,55	18,79	8,60	27,99
		0,188	4,78	19,72	9,02	29,38
		0,203	5,17	21,26	9,74	31,72
		0,219	5,57	22,90	10,48	34,12
		0,230	5,84	24,02	10,97	35,74
		0,250	6,35	26,06	11,91	38,78

*Dimension and weight obey above chart unless there are special directions, though on grounds of agreement between consumer and supplier another standard can be applied.

2) Mechanical Properties

Symbol of grade	Tensile Test		
	Tensile Strength MPa(ksi)	Yield Strength MPa(ksi)	Elongation %
Grade 1	354MPa(50,000psi)	205MPa(30,000psi)	Over, 30
Grade 2	415MPa(60,000psi)	240MPa(35,000psi)	Over, 25
Grade 3	455MPa(66,000psi)	310MPa(45,000psi)	Over, 20

3) Dimensional Tolerance

specified item and dimension	Dimensional tolerance
Outside diameter	± 1 %
Wall thickness	-12,5%
Length	± 1 in.

Bundle List

1) KS and JIS Products packing unit

Name	Size	Bundle	Name	Size	Bundle	Name	Size	Bundle	Name	Size	Bundle
Carbon Steel Pipes for Ordinary Piping	15	200	Carbon Steel Tubes for General Structural Purposes	21,7	200	Carbon Steel Square Pipes for General Structural Purposes	20×20	300	Coated Steel Pipes for Plastic Housing	15,9	300
	20	200		27,2	200		25×25, 30×20	240		19,1	200
	25	200		34,0	200		30×30, 40×20	192,240		22,2	200
	32	120		42,7	120		40×40, 50×30	120,150		25,4	200
	40	91		48,6	91		60×30	135		28,6	200
	50	61		60,5	61		50×50, 60×40	100,90		31,8	100
	65	37		76,3	37		60×60, 75×45, 80×40	72,70,72		38,1	100
	80	24		89,1	24		75×75, 100×50	42,50		50,8	91
	90	19		101,6	19		125×50, 100×75	24,30			
	100	19		114,3	19		100×100, 125×75, 150×50	25,24,27			
	125	10		139,8	10		150×75	18			
	150	7		165,2	7		125×125, 150×100	15,16			

2) ASTM Products packing unit

Size	Wall thickness	Pcs/Bundle		
		20~29ft.	29~39ft.	40~48ft.
2"×2"	0,120	64	64	64
	0,180/0,188	64	48	40
2,5"×2,5"	0,120	64	56	49
	0,180/0,188	64	40	30
3"×3"	0,120	42	42	42
	0,180/0,188	42	30	25
	0,250	42	25	20
4"×4"	0,120	25	25	25
	0,180/0,188	25	20	20
	0,250	25	16	12
5"×5"	0,120	16	16	16
	0,180/0,188	16	16	12
	0,250	16	12	12
3"×2"	0,120	54	54	36
	0,180/0,188	54	36	30
4"×2"	0,120	40	40	40
	0,180/0,188	40	30	24
	0,250	40	40	20
4"×3"	0,120	30	30	30
	0,180/0,188	30	25	20
	0,250	30	20	16
5"×2"	0,120	32	32	32
	0,180/0,188	32	24	20
	0,250	32	20	16
5"×3"	0,120	24	24	24
	0,180/0,188	24	20	20
	0,250	24	12	12
6"×2"	0,120	27	27	27
	0,180/0,188	27	21	18
	0,250	27	12	12
6"×3"	0,120	18	18	18
	0,180/0,188	18	18	15
	0,250	18	15	12
6"×4"	0,120	15	15	15
	0,180/0,188	15	15	15
	0,250	15	12	12



Products Marking

1. KS

1. KS D 3507 Carbon Steel Pipes for Ordinary Piping

 유진철강산업(주) 배관용탄소강관 Ⓚ KS D 3507 SPP-E-G Z4 150AX16M KSA 05-0178 Lot-No

2. KS D 3517 Carbon Steel Tubes for Machine Structural Purposes

 유진철강산업(주) 기계구조용탄소강관 Ⓚ KS D 3517 STKM13B-E-G 165.2X7.0X16M KSA 05-0179 Lot-No

3. KS D 3566 Carbon Steel Tubes for General Structural Purposes

 유진철강산업(주) 일반구조용탄소강관 Ⓚ KS D 3566 STK400 -E-G 165.2X7.0X16M KSA 05-0181 Lot-No

4. KS D 3568 Carbon Steel Square Pipes for General Structural Purposes

 유진철강산업(주) 일반구조용각형강관 Ⓚ KS D 3568 SPSR400 150X100X7.0X16M KSA 05-0182 Lot-No

5. KS D 3760 Coated Steel Pipes for Plastic Housing

 유진철강산업(주) 비닐하우스용도금강관 Ⓚ KS D 3760 SPVHS 31.8X1.7X13M KSA 10-0672 Lot-No

2. JIS

1. JIS G 3452 Carbon Steel Pipes for Ordinary Piping

 YUJIN Ⓜ G 3452 SGP-E-G Z4 150AX16M CRKR 11005 Lot-No

2. JIS G 3444 Carbon Steel Tubes for General Structural Purposes

 YUJIN Ⓜ G 3444 STK400-E-G 165.2X7.0X16M CRKR 11005 Lot-No

3. JIS G 3466 Carbon Steel Square Pipes for General Structural Purposes

 YUJIN Ⓜ G 3466 STKR400 150X100X7.0X16M CRKR 11005 Lot-No

3. ASTM

1. ASTM A 500 Carbon Steel Structural Tubing in Shapes

 YUJIN ASTM A500 GRADE B 6X4X0.250X48' Lot-No MADE IN KOREA

2. ASTM A 500 Carbon Steel Structural Tubing in Rounds

 YUJIN ASTM A500 GRADE C 6X0.250X48' Lot-No MADE IN KOREA

Inquiry

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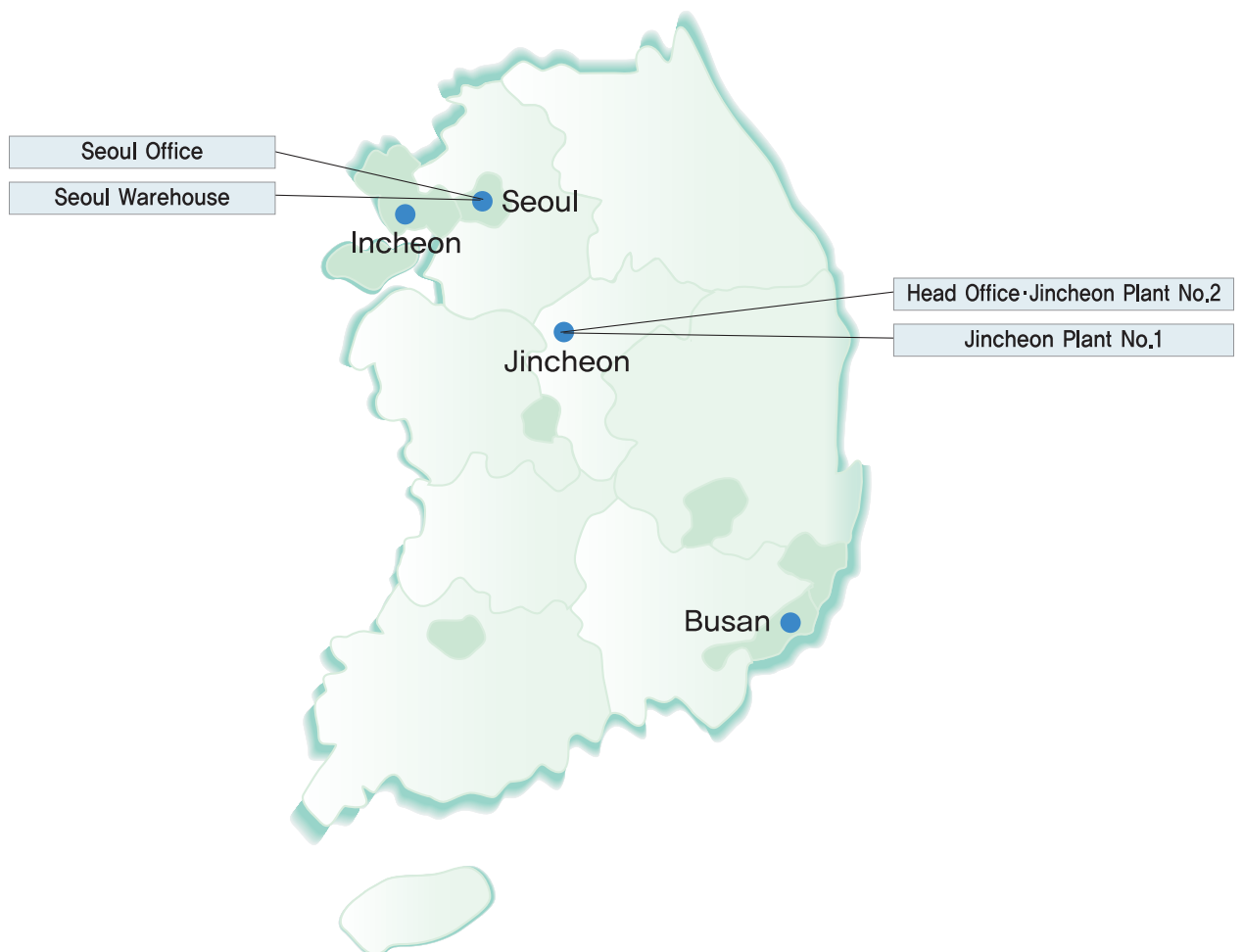
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Location





Precautions and Warnings



Notes

- Excessive drawing, Expansion, bending processing, such as damage to the second concern, please contact us in advance so.
- Excessive bending of hot dip galvanized steel pipe work will result in peeling of the zinc plating.
- May cause corrosion when used in environments with high corrosion resistance, use pipe or pipe covering.
- Water pipes in the vicinity of power lines, such as when dealing with the long power lines to prevent the close.
- Depending on the environment used to determine when regular maintenance and replacement use.
- Before use, check the tube side of the debris before use.
- Handling safety protection (safety shoes, hard hat) if you do not wear can cause accidents.
- Chemicals, excessive moisture and salt storage areas, the rapid corrosion will damage the product.
- Load with a load of goods to prevent damage caused by the loaded and stored.



Warnings

- If you use a product that does not fit use a serious accident occurs.
(Catalog reference on product specifications and applications, please contact us at the time of use-only)
- Manufactured for potable water plumbing pipes that are not used for drinking water products due to the corrosive harmful to the human body.
- Current flows in place during construction adjacent to the proper way if you do not handle illumination (due to electrical corrosion) damage caused by an accident can occur.
- Chemicals or acidic products (Black, White Pipe) alkaline (White Pipe), and the solution in contact with the rapid corrosion.
※ For further details, please contact us.
- Product does not bond firmly to the vehicle during transportation to the product release and fall accidents.
- Move the crane-class products, including product transfer device operation, the product may cause blurring accident.
- Excellent transportation, water, water contact and exposure to chemicals and can cause severe rust.
- Never drink products under the product from entering the surrounding maintain a safe distance from the work.
- Sanghacha balance work product unless the product is falling accidents.
- Products such as forklift trucks spinning movement, braking and shaking, the product may cause accidents.
- If you overloading, speeding and sudden braking or a crash when rotating product products risk of rollover.
- When transporting the product to meet specifications using the rope or the rope is cut, damaged product can cause accidents such as falling.
- Yajeok when outdoors or if you do not keep the product packaging and cover more damage.
- Product Storage Keep the product level have you to keep both ends of the strut to install the clouds do not prevent release of the product may cause an accident.
- Godin products of the Building or unstable load can cause the product to fall accidents.

