SEJUNG METAL

SEJUNG METAL

CONTENTS

STAINLESS STEEL

TP304
TP304L

Applications

304 is most commonly used in petroleum refineries. It is also found in boilers. Other applications include heat exchangers, condensers, pipelines, cooling towers, steam exhausts, and electric generation plants. On occasion it will also be found in fertilizer and chemical plants.

Applications Standards

	Pipe		Tube		Plate	Bar
	Seamless	Welded	Seamless	Welded		
ASTM	A312	A312, A358	A213	A249	A240	A276
JIS	G3459	G3459	G3463	G3463	G4304	G4318
KS	D3576	D3576	D3577	D3577	D3705	D3706

Chemical Composition / Mechanical Properties (JIS G3459)

Grade	Chemical Compostition (%)								Mechanical Properties	
	C	Si	Mn	P	S	Ni	Cr	Mo	T.S (N/㎟)	Y.P (N/㎟)
304	0.08max	1.00max	2.00max	0.04max	0.03max	8.0~11.0	18.0~20.0	–	520min	206min
304L	0.03max	1.00max	2.00max	0.04max	0.03max	9.0~13.0	18.0~20.0	–	481min	177min

T. 82-51-311-3870 F. 82-51-311-3876
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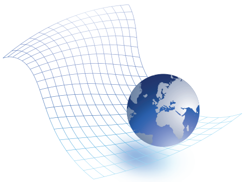
Reference | * Application ; 20~22P * Inventory Size ; 23P
* Schedule & Weight ; 24, 25P



TP316L
TP317L

Applications

316L/317L is used to handle sulphur, pulp liquor, acid dyestuffs, acetylating and nitrating mixtures, bleaching solutions, severe coal and oil smoke, and many chemical compounds.

Applications Standards

	Pipe		Tube		Plate	Bar
	Seamless	Welded	Seamless	Welded		
ASTM	A312	A312, A358	A213	A249	A240	A276
JIS	G3459	G3459	G3463	G3463	G4304	G4318
KS	D3576	D3576	D3577	D3577	D3705	D3706

Chemical Composition / Mechanical Properties (JIS G3459)

Grade	Chemical Compostition (%)								Mechanical Properties	
	C	Si	Mn	P	S	Ni	Cr	Mo	T.S (N/㎟)	Y.P (N/㎟)
316	0.08max	1.00max	2.00max	0.04max	0.03max	10.0~14.0	16.0~18.0	2.00~3.00	520min	206min
316L	0.03max	1.00max	2.00max	0.04max	0.03max	12.0~16.0	16.0~18.0	2.00~3.00	481min	177min
317L	0.03max	1.00max	2.00max	0.04max	0.03max	11.0~15.0	18.0~20.0	3.00~4.00	520min	206min

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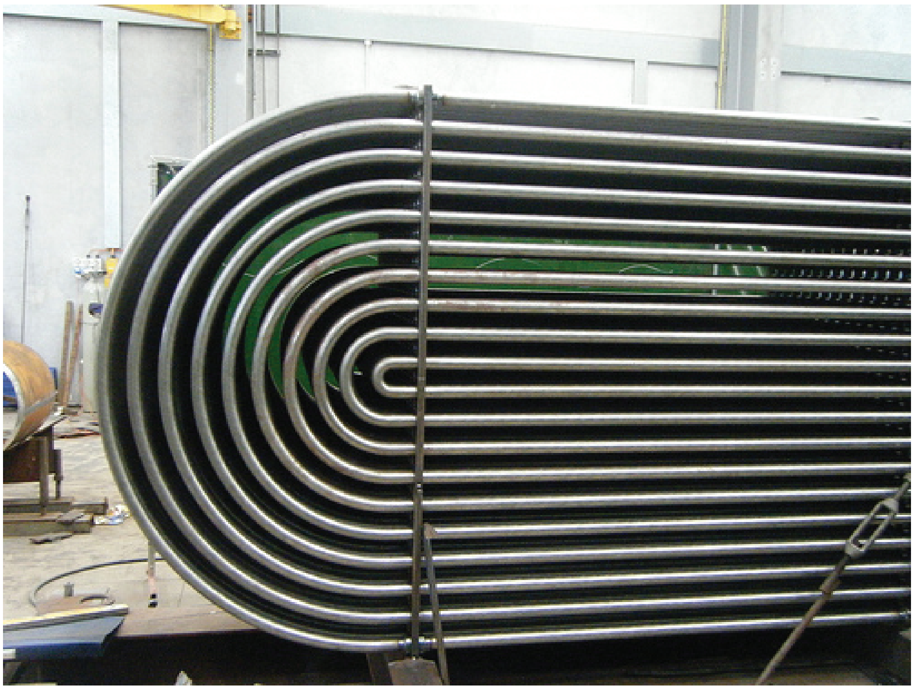
Reference
* Application : 20~22P * Inventory Size : 23P
* Schedule & Weight : 24, 25P

TP321



Applications

321 is common to the petroleum refining industries: This is used to make radiant superheaters, boiler tubes, high pressure steam pipes, and general refinery piping. Also used for heavy duty exhaust systems and manifolds.

Applications Standards

	Pipe		Tube		Plate	Bar
	Seamless	Welded	Seamless	Welded		
ASTM	A312	A312, A358	A213	A249	A240	A276
JIS	G3459	G3459	G3463	G3463	G4304	G4318
KS	D3576	D3576	D3577	D3577	D3705	D3706

Chemical Composition / Mechanical Properties (ASTM A312)

Grade	Chemical Compostition (%)									Mechanical Properties	
	C	Si	Mn	P	S	Ni	Cr	Mo	Ti	T.S (N/㎟)	Y.P (N/㎟)
321	0.08max	1.00max	2.00max	0.04max	0.03max	9.0～13.0	17.0～20.0	–	Ti≥5xC%	515min	205min

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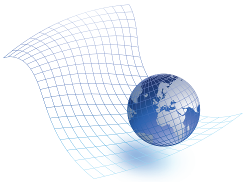

TP310S

Applications

Just like 310S is used by the environmental, chemical processing and refining industries. Some equipment made 310S includes : incinerators, furnaces, burners, kilns, annealing and carburizing boxes, combustion chambers, salt pots, thermo wells, gas turbines, retorts, flairs and equipment tohandle sulfite liquors.

Applications Standards

	Pipe		Tube		Plate	Bar
	Seamless	Welded	Seamless	Welded		
ASTM	A312	A312, A358	A213	A249	A240	A276
JIS	G3459	G3459	G3463	G3463	G4304	G4318
KS	D3576	D3576	D3577	D3577	D3705	D3706

Chemical Composition / Mechanical Properties (A312)

Grade	Chemical Compostition (%)								Mechanical Properties	
	C	Si	Mn	P	S	Ni	Cr	Mo	T.S (N/㎟)	Y.P (N/㎟)
310S	0.08max	1.00max	2.00max	0.04max	0.03max	19.0~22.0	24.0~26.0	–	520min	206min

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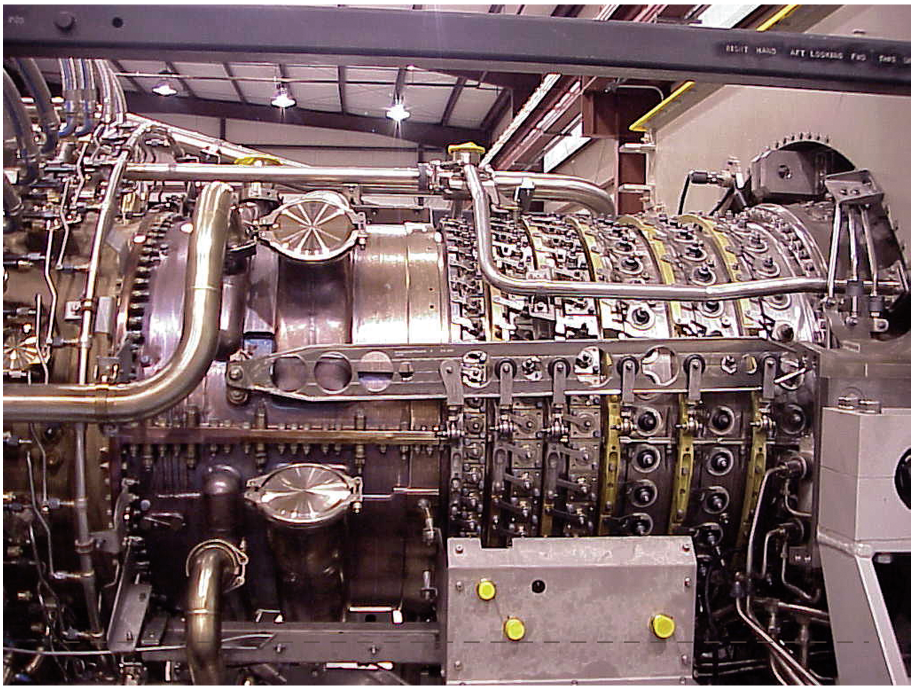
Reference * Application ; 20~22P * Inventory Size ; 23P
* Schedule & Weight ; 24, 25P

TP347



Applications

347 is common to the petroleum refining industries: It is used to make radiant superheaters, boiler tubes, high pressure steam pipes, and general refinery piping. It is also used for heavy duty exhaust systems and manifolds.

Applications Standards

	Pipe		Tube		Plate	Bar
	Seamless	Welded	Seamless	Welded		
ASTM	A312	A312, A358	A213	A249	A240	A276
JIS	G3459	G3459	G3463	G3463	G4304	D3705
KS	D3576	D3576	D3577	D3577	D3705	D3706

Chemical Composition / Mechanical Properties (A312)

Grade	Chemical Compostition (%)									Mechanical Properties	
	C	Si	Mn	P	S	Ni	Cr	Mo	Nb	T.S (N/㎟)	Y.P (N/㎟)
347	0.08max	1.00max	2.00max	0.04max	0.03max	9.0~13.0	17.0~20.0	–	Nb≥10xC%	515min	205min

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Reference * Application ; 20~22P * Inventory Size ; 23P
* Schedule & Weight ; 24, 25P

TP904L

Applications

Production, processing, storage and transportation of sulfuric and phosphoric acids, even when contaminated with chlorides. Pulp and paper industry, Chemical process industry.

Applications Standards

	Pipe		Tube		Plate	Bar
	Seamless	Welded	Seamless	Welded		
ASTM	A312	A312, A358	A213	A249	A240	A276
JIS	G3459	G3459	D3463	D3463	G4304	D3705
KS	D3576	D3576	D3577	D3577	G4318	D3706

Chemical Composition / Mechanical Properties (A312)

Grade	Chemical Compostition (%)								Mechanical Properties	
	C	Si	Mn	P	S	Ni	Cr	Mo	T.S (N/㎟)	Y.P (N/㎟)
904L	0.08max	1.00max	2.00max	0.045max	0.035max	23.0~28.0	19.0~23.0	1.0~2.0	710min	310min

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Reference
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* Schedule & Weight ; 24, 25P

DUPLEX S31803

Applications

* Lower coefficient of thermal expansion and a higher thermal conductivity
* Resists chloride stress corrosion cracking
* Pitting and crevice corrosion resistance
* Excellent choice for high chloride environments

Applications Standards

	Pipe		Tube		Plate	Bar
	Seamless	Welded	Seamless	Welded		
ASTM JIS KS	A790	A789	A213	A789	A240	A276

Chemical Composition / Mechanical Properties (A790)

Grade	Chemical Compostition (%)									Mechanical Properties	
	C	Si	Mn	P	S	Ni	Cr	Mo	N	T.S (N/㎟)	Y.P (N/㎟)
S31803	0.03max	1.00max	2.00max	0.045max	0.035max	23.0~28.0	21.0~23.0	2.5~3.5	0.08~0.2	620min	450min

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Reference | * Application ; 20~22P * Inventory Size ; 23P
* Schedule & Weight ; 24, 25P

CARBON STEEL

SPP
SGP

Scope

This specifies the carbon steel pipes used for the pipings for conveying steam, water, oil, gas, air, etc. at comparatively low working pressures.

Chemical Composition / Mechanical Properties (JIS)

Spec.	Grade	Chemical Compostition (%)				Mechanical Properties	
		C	Si	P	S	T.S (N/㎟)	Elon (%)
G3452 D3507	SGP SPP			0.04max	0.04max	294min	30

Standard Comparative Table

KS	ASTM	JIS	API	DIN
D3507 SPP	A53 Type F	G3452 SGP	5L A25–1 A25–2 CL1 CL11	2440 ST 33.2 2441 ST 33.2

Designation

Black pipe	Pipe without zinc coating
Galvanized pipe	Pipe with zinc coating

Where it is necessary to identify the galvanized pipe by the letter symbol on the drawing and other documents,"–ZN" shall be suffixed to the letter sumbol of the grade. This notation, however, shall not be applied to the product itself.

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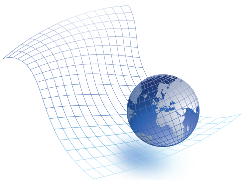
Reference | * Application ; Slip Sheet * Inventory Size ; 23P
* Schedule & Weight ; 23, 25P



STPG 370
STPT 370
STS 370

Scope

This specifies the carbon steel pipes, used for pressure service at an approximate maximunn temperature of 350℃. The pipes for high pressure sevice shall be in accordance with JIS G3455.

Chemical Composition / Mechanical Properties (JIS)

Spec.	Grade	Chemical Compostition (%)					Mechanical Properties	
		C	Si	Mn	P	S	T.S (N/㎟)	Y.S (N/㎟)
G3454 D3562	STPG370 SPPS370	0.25max	0.35max	0.3~0.9	0.04max	0.04max	373min	216min

Standard Comparative Table

KS	ASTM	JIS	API	DIN
D3562 SPPS370	A53 Gr. A	G3454 STPG370	5L Gr. A Gr.B	1628 ST 37.4 1629 ST 37.0 1630 ST 37.4

Sejung Metal Inventory

Type	Size	Schedule	Manufacturer
Seamless Welded	15A~400A 15A~600A	SCH40, STD, XS, 80, 160 & XXS SCH40, SCH80, STD, XS	Japan Korea

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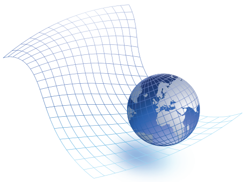
Reference | * Application ; Slip Sheet * Inventory Size ; 23P
* Schedule & Weight ; 23, 25P

A106 Gr.B
API 5L Gr.B
A53 Gr.B



Scope

This specifies the seamless carbon steel pipes mainly used for piping at a temperature over 350℃.

Chemical Composition / Mechanical Properties (ASTM)

Spec.	Grade	Chemical Compostition (%)					Mechanical Properties	
		C	Si	Mn	P	S	T.S (N/㎟)	Y.S (N/㎟)
A106	Gr. A Gr. B Gr. C	0.25 max 0.30 max 0.33 max	0.10~0.35 0.10~0.35 0.10~0.35	0.30~1.10 0.30~1.40 0.30~1.50	0.035 max 0.035 max 0.035 max	0.035 max 0.035 max 0.035 max	373 min 412 min 481 min	216 min 245 min 275 min

Standard Comparative Table

KS	ASTM	JIS	API	DIN
D3570 STPT370 STPT410 STPT480	A106 Gr. A Gr. B Gr. C	G3456 STS370 STS410 STS480		17175 ST 35.8 ST 45.8

Sejung Metal Inventory

Type	Size	Schedule	Manufacturer
Seamless	1/2" ~ 16" 1/2" ~ 24"	SCH40, STD, XS, 80, 160 & XXS SCH40, SCH80, STD, XS	Japan Europe

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Reference
* Application ; Slip Sheet * Inventory Size ; 23P
* Schedule & Weight ; 23, 25P

A335 P11
A335 P22
A335 P91

Scope

This specifies the alloy steel pipes mainly used form high temperature service. in NPS 1/8 to NPS 48 inclusive, with nominal (average) wall thickness as given is ANSI B36.10.

Chemical Composition / Mechanical Properties (ASTM)

Spec.	Grade	Chemical Compostition (%)							Mechanical Properties	
		C	Si	Mn	P	S	Cr	Mo	T.S (N/㎟)	Y.S (N/㎟)
A335	P11 P22 P91	0.05~0.15 0.05~0.15 0.08~0.12	0.50~1.00 0.50max 0.20~0.50	0.30~0.60 0.30~0.60 0.30~0.60	0.025max 0.025max 0.020max	0.025max 0.025max 0.010max	1.00~1.50 1.90~2.60 8.00~9.50	0.44~0.65 0.87~1.13 0.85~1.05	415min 415min 620min	205min 205min 440min

Standard Comparative Table

KS	ASTM	JIS	API	DIN
D3573 SPA23 SPA24	A335 P11 P22 P91	G3458 STPA23 STPA24		17175 10CrMo910

Designation

Type	Size	Schedule	Manufacturer
Seamless	1/2" ~ 16" 1/2" ~ 24"	SCH40, STD, XS, 80, 160 & XXS SCH40, STD, XS, 80, 160 & XXS	Japan Europe

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Reference | * Application ; Slip Sheet * Inventory Size ; 23P
* Schedule & Weight ; 23, 25P

A333 Gr.6

Scope

This specifies the alloy steel pipes used for piping at exceptionally low temperatures of freezing point or under.

Chemical Composition / Mechanical Properties (ASTM)

Spec.	Grade	Chemical Compostition (%)						Mechanical Properties	
		C	Si	Mn	P	S	Ni	T.S (N/㎟)	Y.S (N/㎟)
A333	Gr.1 Gr.3 Gr.6	0.3 max 0.19max 0.3 max	– 0.18~0.37 0.1min	0.40~1.06 0.31~0.64 0.29~1.06	0.025 0.025 0.025	0.025 0.025 0.025	3.18~3.82	380 min 450 min 415 min	205 min 240 min 240 min

Standard Comparative Table

KS	ASTM	JIS	API	DIN
D3569 SPLT380 SPLT450 SPLT690	A333 Gr.1 Gr.3 Gr.8	G3460 SPLT380 SPLT450 SPLT690		17173

Sejung Metal Inventory

Type	Size	Schedule	Manufacturer
Seamless	1/2" ~ 16" 1/2" ~ 24"	SCH40, STD, XS, 80, 160 & XXS SCH40, STD, XS, 80, 160 & XXS	Japan Europe

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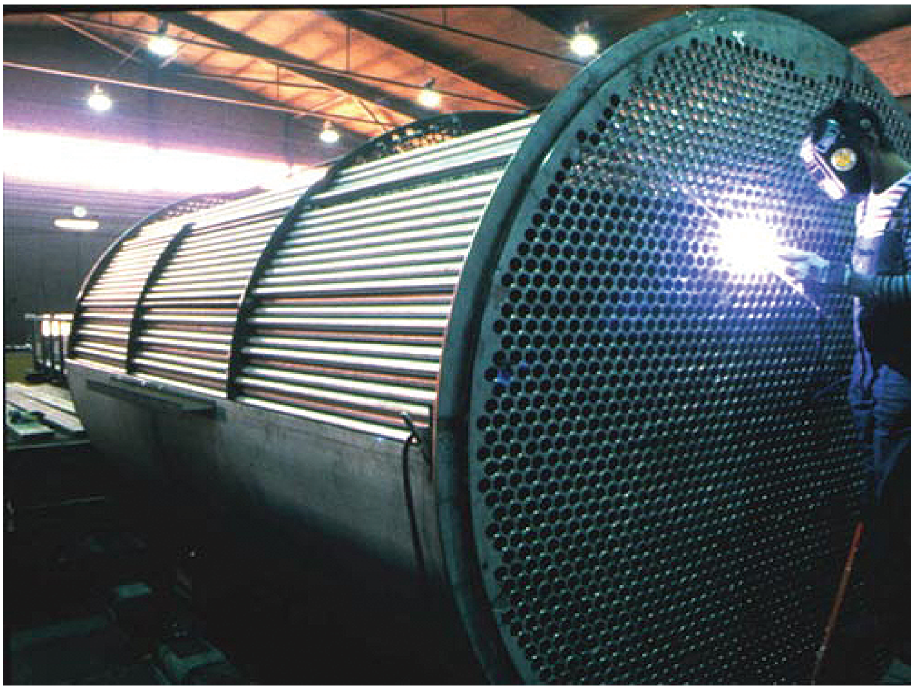
Reference | * Application ; Slip Sheet * Inventory Size ; 23P
* Schedule & Weight ; 23, 25P

A179
STB 340



Scope

This specifies the carbon steel tubes used for excahnging heat on the inside and ou tside of the tube, such as water tubes, smoke tubes uperheater tubes, air preheater tubes, etc. of the boiler, and heat exchanger tubes, condenser tubes catalyser tubes, etc. used in chemical and petroleum inudstries.

Chemical Composition / Mechanical Properties (JIS)

Spec.	Grade	Chemical Compostition (%)					Mechanical Properties	
		C	Si	Mn	P	S	T.S (N/㎟)	Y.S (N/㎟)
G3461	STB35 STB52	0.18 max 0.18 max	0.35 max 0.35 max	0.3~0.6 1.0~1.5	0.035 max 0.035 max	0.035 max 0.035 max	340 min 510 min	175 min 296 min

Standard Comparative Table

KS	ASTM	JIS	API	DIN
D3563 STBH340 STBH410 STBH510	A178 Gr.A A226 Gr.C A226 Gr.D	G3461 STB340 STB410 STB510		17175 ST35.8 17175 ST45.8

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Reference * Application ; Slip Sheet * Inventory Size ; 23P
* Schedule & Weight ; 23, 25P

STKR 400

Scope

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

Chemical Composition / Mechanical Properties (JIS)

Spec.	Grade	Chemical Compostition (%)					Mechanical Properties	
		C	Si	Mn	P	S	T.S (N/㎟)	Y.S (N/㎟)
G3460	STKR400 STKR490	0.25 max 0.25 max	– 0.55 max	– 1.50 max	0.04 max 0.04 max	0.04 max 0.04 max	400 min 400 min	245 min 325 min

Standard Comparative Table

KS	ASTM	JIS	API	DIN
D3568 SPSR400 SPSR400	A500 Gr.B Gr.C	G3460 STKR400 STKR490		

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Reference | * Application : Slip Sheet

A516-70

Scope

Used for gas holders (ball tank), LPG tanks, storage tanks for fuel and other liquids, refined-fuel and thermal-power-generation boilers.

Chemical Composition / Mechanical Properties (ASTM)

Spec.	Grade	Chemical Compostition (%)					Mechanical Properties	
		C	Si	Mn	P	S	T.S (N/㎟)	Y.S (N/㎟)
A516	60	0.25max	0.15~0.40	0.85~1.20	0.035	0.035	415~550	220
	65	0.28max	0.15~0.40	0.85~1.20	0.035	0.035	450~585	240
	70	0.30max	0.15~0.40	0.85~1.20	0.035	0.035	485~620	260

Applications Standards

KS	SB410, 450, 450, 480, 480M	
JIS	SGV410 , 450, 480 SPV235, 315, 490	
ASTM	A285 Gr.C, A516-55, 60, 65, 70	

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Stainless Pipe
Applicable Standards List

SEJUNG METAL

Applicable Standards	KS D3576 / JIS G3459	ASTM A312 / A530	DIN 2463
Applications	pipes O.D 10.5~660.4mm	pipes O.D 10.29~762.0mm	pipe
Manufacturing method	Seamless, Automatic arc welding and electric resistance welding	Seamless, Automatic arc welding without filler metal	Seamless, Automatic arc welding
Type of steel	304 309S 316H 321H 347H 304H 310S 316L 329J1 304L 316 321 347	304 304N 317 347 XM-10 XM-29 304H 309 317L 347L XM-11 304L 310 321 348 XM-15 304LN 316 321H 348H XM-19	1.4301 (304), 1.4306 (304L) 1.4541 (321), 1.4550 (347) 1.4401 (316), 1.4404 (316L)
Heat Treatment	304, 304L, 316, 316L Rapid quenching at 1,010℃ or above 309S, 310S .... Rapid quenching at 1,030℃ or above 304H, 316H .... Rapid quenching at 985℃ or above 347 .... Rapid quenching at 980℃ or above 329J1 .... Rapid quenching at 950℃ or above 321 .... Rapid quenching at 920℃ or above 321H, 347H cold .... Rapid quenching at 1,095℃ or above hot .... Rapid quenching at 1,095℃ or above	Other than type H steel......Rapid quenching at 1,030℃ or above 321H, 347H, 348H cold...... Rapid quenching at 1,093℃ or above hot....... Rapid quenching at 1,052℃ or above 304H, 316H cold...... Rapid quenching at 1,038℃ or above hot....... Rapid quenching at 1,038℃ or above	304, 304L, 1,000℃ to 1,080℃ Quenching in Water or Air 316, 316L, 321, 347, 1,020℃ to 1,100℃ Quenching in Water or Air
Items – Chemical Analysis	Ladle analysis	(1) Ladle analysis (2) Check analysis on request	0
Items – Mechanical Test – Tension test (kg/㎟, %)	2pcs. / lot Y.S T.S EL 304L 304L ≥ 18 ≥ 49 ≥ 25, 35 316L 321J1 ≥ 40 ≥ 60 ≥ 13, 18 Others ≥ 21 ≥ 53 ≥ 25, 35	1piece / lot Other ≥ Y.S ≥ T.S EL 304L ≥ 17.5 ≥ 49 Longitudinal direction ≥ 35 316L 304N ≥ 24 ≥ 55 316N Longitudinal direction Other ≥ 21 ≥ 53 ≥ 25	–
Items – Mechanical Test – Flattening test	2pcs. / lot $H = \frac{(1+e)t}{e+t/D}$ e : 0.09 (e : 0.07 for 329J1)	5% / lot (not less than 2 pcs.) $H = \frac{(1+e)t}{e+t/D}$ e : 0.09	0
Items – Mechanical Test – Flaring test	–	–	–
Items – Mechanical Test – Flange test	–	–	0
Items – Mechanical Test – Reverse flattening test	–	–	–
Items – Mechanical Test – Reverse bending test	–	–	–
Items – Mechanical Test – Bending test	–	–	–
Items – Mechanical Test – Hardness test	–	–	–
Items – Hydrostatic / Air-undereater pressure Test	Each pipe Unless otherwise specified : 25kg/㎠ $P = \frac{200St}{D}$ S : Y.S x 0.6	Each pipe $P = \frac{200St}{D}$ S : Y.S x 0.5	0
Items – Other Test	321H···Averages particle size of austentic crystal ≤ No.7 If specified, corrosion test using 5% sulfuric acid Intercystalline corrosion test	If specified, corrosion test ASTM-E-340	Non destructive test
Items – Tolerance for outside diameter	Outside diameter(mm) Tolerance(mm) < 30 ±0.3 30 ≤ ±1%	Outside diameter(mm) Tolerance(mm) 10.29 ≤ ≤ 48.26 +0.40 −0.79 38.26 < ≤ 114.30 ±0.79 114.30 < ≤ 219.08 +1.59 −0.79 219.08 < ≤ 457.2 +2.38 −0.79 457.2 < ≤ 660.4 +3.18 −0.79 660.4 < ≤ 762.0 +3.97 −0.79	Outside diameter(mm) Tolerance(mm) ≤ 168.3 ±1.0%min ±1.5mm > 168.3 ±1.0%max ±3mm
Items – Tolerance for ellipse and circle			
Items – Tolerance for wall thickness	Less than 2mm ± 0.2mm 2mm or above ±10%	Not Less than −12.5% of norminal wall thickness	±1.0%min, ±0.2mm
Items – Tolerance for straightness	–	Metal arc weld pipe 3.17 / 3,048mm or less	
Items – Tolerance for length	Not less than specified length	Out diameter : 203mm or less Length : 7,320mm or shorter +6.35mm, −0 Others : As per mutual negotiation	O.D≤ 40mm : L4mm~8mm : $^{+5}_{0}$ mm 40<O.D≤ 168mm : L≤ 6mm : $^{+5}_{0}$ mm L > 6mm : $^{+10}_{0}$ mm O.D > 168mm : : $^{+10}_{0}$ mm
Items – Tolerance for beed	–		–
Items – Remarks		(1) Low-temperature chracteristics : Not less than 2.07m-kg at −196℃ (2) Length of test piece subjected flattening test : Over 63.5mm	–

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Stainless Pipe
Applicable Standards List

KS D3588 / JIS G3468	ASTM A358 / A530	DIN 2463
Large-diameter pipe O.D 165.2～1016.0mm	Large-diameter pipe Class 1 : double weld with radiographic examination Class 2 : double weld without radiographic examination Class 3 : single weld with radiographic examination Class 4 : single weld, inside pass with no addition of filler metal, with radiographic examination Class 5 : double weld with random radiographic examination	pipe
Automatic arc welding with filler metal	Welding (in accordance with ASME sec. -IX) Welding with addition of filler metal	Seamless, Automatic arc welding
304 309S 316 321 304L 310S 316L 347	304 309L 304H 304N 309 310 316 310L 316H 316N 321 347 348 XM-19 XM-29	1.4301(304), 1.4306(304L) 1.4541(321), 1.4550(347) 1.4401(316), 1.4404(316L)
Without heat treatment as a rule. However, heat treatment according to JIS G3459 is performed on request.	Rapid quenching at 1,038℃ or above. Indicate "HT-D" for products not subjected to heat treatment.	304, 304L, 1,000℃ to 1,080℃ Quenching in Water or Air 316, 316L, 321, 347, 1,200℃ to 1,100℃ Quenching in Water or Air
	(1) Ladle analysis (2) Check analysis on request	0
1pieces for up to 120pieces SUS304, 309S, 310S, 316, 321, 347 Y.S ≥ 21 T.S ≥ 53 EL ≥ 35.25	Test piece for base metal : ASME sec. -IX)	-
-	-	0
	-	-
-	-	0
-	-	-
-	-	-
-	2 pcs./lot Face bend Root bend	-
-	-	-
5S : 15kgf/㎠ 10S : 20kgf/㎠ 20～40S : 25kgf/㎠	Each pipe 7kg/㎠ (Air, gas) Leak test with soap solution	0
Tension test for welded portion	Radiographic examination (Classes 1, 3, 4, 5)	Non destructive test
Outside diameter (mm) Tolerance(mm) 300A or less ±1.0% Over 300A excl. ±0.5%	Outside diameter(mm) Tolerance(mm) < 203.2 ±0.5% (Determine outside diameter by measuring circumference)	Outside diameter(mm) Tolerance(mm) ≤ 168.3 ±1.0%min ±1.5mm < 168.3 ±1.0%max ±3mm
-	$\frac{\text{Max. O.D} - \text{Min. O.D}}{\text{Norminal O.D}}$ = No greater than 1.0%	
500A or less <8mm +15 -12.5% ≥8mm +15 -10% Over 500A excl. <8mm + not specified -12.5% ≥8mm + not specified -10%	No Less than -0.254mm of norminal wall thickness	±1.0% min, ±0.2mm
	3.17 / 3.048mm or less	
Not less than specified length	As per mutual negotiation	O.D≤ 40mm : L4mm～8mm : $^{+5}_{0}$ mm 40<O.D≤ 168mm : L≤ 6mm : $^{+5}_{0}$ mm L> 6mm : $^{+10}_{0}$ mm O.D>168mm : $^{+10}_{0}$ mm
-		-
-	Height of reinforcement : 1.6mm～3.2mm Any weld reinforcement may be removed at the manufactur's option or by agreement between the manufacturer and purchaser.	-

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Stainless Pipe
Applicable Standards List

Applicable Standards			KS D3577/ JIS G3463	ASTM A249/ A450
Applications			Heat exchange tube	Boiler, superheater, heat exchanger and condenser tubes. I.D 3.2～O.D 127mm t : 0.38～8.13mm
Manufacturing method			Seamless. Automatic arc welding and electric resistance welding	(1) Automatic arc welding without filler metal (2) International external extruding or beads eliminated at ordinary temperature
Types of steel			410 304H 321H 316L 347 430 304L 316 390S 347H 304 321 316H 310S 329J	304 304L 309 316 371L 347H XM-19 304H 304LN 310 316LN 321 348 XM-19 304N 316 316N 321H 348H 305 318H 317 347 XM-15
Heat Treatment			Same as KS D3576, JIS G3459 However, annealing at 700℃ or above for 410 and 430	Same as ASTM A312 However, 304L, 316L, 321, 347 AND 348 are stress relieved on request. Annealed at 843℃ -889℃
	Chemical Analysis		(1) Ladle analysis (2) Check analysis	(1) Ladle analysis (2) Check analysis on request
	Mechanical Test	Tension test (kg/㎟, %)	Same as KS D3576, JIS G3459	1pcs. / lot Other : same as ASTM A312
		Flattening test	2pcs. / lot $H = \frac{(1+e)t}{e+t/D}$ e : 0.09 (However, e : 0.07 for 410, 430 and 329J1)	1pcs. / lot $H = \frac{(1+e)t}{e+t/D}$ e < 0.09
		Flaring test	2pcs. / lot Flaring width : D×12 (However, D×1.4 for 410, 430 and 329J1)	-
		Flange test		Flaring width : D×15%
		Reverse flattening test	Automatic arc welding Bending test 1 piece/lot	-
		Reverse bending test	-	1pcs. / 457.2m
		Bending test	-	-
		Hardness test	-	Batch type furmace : 5% (not less than 5 pcs.) / lot continuous annealing furmace : 1% / lot ≤90HRB
	Hydrostatic / Air-underwater pressure test		Each pipe Unless otherwise specified : 100kg/㎠ $P = \frac{200St}{D}$ S : T.S x 1/4 (However, S : T.S x 1/3 for 410, 430 and 329J1)	Each pipe P=220.6 t/d
	Other test		321H···Average particle size of austentic crystal ≤ No.7 If specified corrosion test using 5% sulfuric acid Intercystalline corrosion test.	Electric nondestructive test
Items	Tolerance for outside diameter		Outside diameter(mm) / Tolerance(mm) < 60 ±0.25 60 ≤ < 80 ±0.30 80 ≤ < 100 ±0.40 100 ≤ < 120 +0.40, -0.60 120 ≤ < 160 +0.40, -0.80 160 ≤ < 200 +0.40, -1.20 200 ≤ +0.40, -1.60	Outside diameter(mm) / Tolerance(mm) < 25.4 ±0.10 25.4 ≤ < 38.1 ±0.15 38.1 ≤ < 50.8 ±0.20 50.8 ≤ < 63.5 ±0.254 63.5 ≤ < 76.2 ±0.305 76.2 ≤ < 101.6 ±0.381 101.6≤ < 190.5 ±0.381, -0.635 190.5≤ < 228.6 +0.381, -1.143
	Tolerance for ellipse and circle		-	-
	Tolerance for wall thickness		Outside diameter : Less than 40mm +0.40mm Wall thickness : Less than 2mm -0 Outside diameter : Less than 40mm +20% Wall thickness : 2mm or above -0 +22% Outside diameter : 40mm or above -0	+10% Minimum wall thickness +18%, -0
	Tolerance for straightness			0.765 / 914.4mm or less
	Tolerance for length		Outside diameter : 50mm or less +7mm Length : 7,000mm or less -0 Outside diameter : over 50mm excl. +10mm Length : 7,000mm or above -0 Forlength exeeding 7,000mm irrespective of outside diameter, add 3mm to positive (+) tolerance for every 3,000mm of additional length (Max. allowable tolerance : 15mm)	Outside diameter : Less than 38.1mm +3.17mm -0 38.1mm or above +4.76mm -0 3.17mm for each additional length of 3,018mm or obove 7,315.2mm (Max. allowable tolerance : 12.7mm)
	Tolerance for beed		-	Tube welded by eletric resistance welding Outside diameter > 50.8mm Wall thickness > 3.43mm 0.25mm or less Outside diameter ≤ 50.8mm Wall thickness ≥ 3.43mm 0.15mm or less
	Remarks		-	Tolerance for weight (all size) : -0, +10%

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Pipe Schedule List

S : Stainless Steel

KS D3576, D3588 / ANSI B36.10, B36.19

O.D	MM	SCH5S	SCH10S	SCH10	SCH20S	SCH20	SCH30	SCH40S	STD	SCH40	SCH60	SCH80S	SCH XS	SCH80	SCH100	SCH120	SCH140	SCH160	SCH XXS
6A	10.50	1.00	1.20		1.50			1.70	1.70	1.70	2.20			2.40					
1/8	10.29		1.24					1.73	1.73	1.73		2.41	2.41	2.41					
8A	13.80		1.65		2.00			2.20	2.20	2.20	2.40		3.00	3.00					
1/4	13.72		1.65					1.73	1.73	1.73		3.02	3.02	3.02					
10A	17.30	1.20	1.65		2.00			2.30	2.30	2.30	2.80		3.20	3.20					
3/8	17.15		1.65					2.31	2.31	2.31		3.20	3.20	3.20					
15A	21.70	1.65	2.10		2.50			2.80	2.80	2.80	3.20		3.70	3.70				4.70	7.50
1/2	21.34	1.65	2.11					2.77	2.77	2.77		3.73	3.73	3.73				4.75	7.47
20A	27.20	1.65	2.10		2.50			2.90	2.90	2.90	3.40		3.90	3.90				5.50	7.80
3/4	26.67	1.65	2.11	2.11				2.87	2.87	2.87		3.91	3.91	3.91				5.54	7.82
25A	34.00	1.65	2.80		3.00			3.40	3.40	3.40	3.90		4.50	4.50				6.40	9.10
1	33.40	1.65	2.77	2.77				3.38	3.38	3.38		4.55	4.55	4.55				6.35	9.09
32A	42.70	1.65	2.80		3.00			3.60	3.60	3.60	4.50		4.90	4.90				6.40	9.70
1 1/4	42.16	1.65	2.77	2.77				3.56	3.56	3.56		4.85	4.85	4.85				6.35	9.70
40A	48.60	1.65	2.80		3.00			3.70	3.70	3.70	4.50		5.10	5.10				7.10	10.16
1 1/2	48.26	1.65	2.77	2.77				3.68	3.68	3.68		5.08	5.08	5.08				7.14	10.16
50A	60.50	1.65	2.80		3.50	3.20		3.90	3.90	3.90	4.90		5.50	5.50				8.70	11.00
2	60.33	1.65	2.77	2.77		–		3.91	3.91	3.91		5.54	5.54	5.54				8.71	11.07
65A	76.30	2.10	3.00		3.50	4.50		5.20	5.20	5.20	6.00		7.00	7.00				9.50	14.00
2 1/2	73.03	2.11	3.05	3.05		–		5.16	5.16	5.16		7.01	7.01	7.01				9.52	14.02
80A	89.10	2.10	3.00		4.00	4.50		5.50	5.50	5.50	6.60		7.60	7.60				11.10	15.24
3	88.90	2.11	3.05	3.05		–		5.49	5.49	5.49		7.62	7.62	7.62				11.13	15.24
90A	101.60	2.10	3.00		4.00	4.50		5.70	5.70	5.70	7.00		8.10	8.10				12.70	–
3 1/2	101.60	2.11	3.05	3.05		–		5.74	5.74	5.74		8.08	8.08	8.08				–	16.15
100A	114.30	2.10	3.00		4.00	4.90		6.00	6.00	6.00	7.10		8.60	8.60		11.10		13.50	17.10
4	114.30	2.11	3.05	3.05		–		6.02	6.02	6.02		8.56	8.56	8.56		11.13		13.49	17.12
125A	139.80	2.80	3.40		5.00	5.10		6.60	6.60	6.60	8.10		9.50	9.50		12.70		15.90	19.40
5	141.30	2.77	3.40	3.40		–		6.55	6.55	6.55		9.53	9.53	9.53		12.70		15.88	19.05
150A	165.20	2.80	3.40		5.00	5.50		7.10	7.10	7.10	9.30		11.00	11.00		14.30		18.20	21.90
6	168.28	2.77	3.40	–		–		7.11	7.11	7.11		10.97	10.97	10.97		14.27		18.24	21.95
200A	216.30	2.80	4.00		6.50	6.40	7.00	8.20	8.20	8.20	10.30		12.70	12.70	15.10	18.20	20.60	23.00	22.20
8	219.08	2.77	3.76	–		6.35	7.04	8.18	8.18	8.18	10.31	12.70	12.70	12.70	15.06	18.26	20.62	23.01	22.22
250A	267.40	3.40	4.00		6.50	6.40	7.80	9.30	9.30	9.30	12.70		12.70	15.10	18.20	21.40	25.40	28.60	25.40
10	273.05	3.40	4.19	–		6.35	7.80	9.27	9.27	9.27	12.70		12.70	15.06	18.26	21.44	25.40	28.58	25.40
300A	318.50	4.00	4.50		6.50	6.40	8.40	10.30	9.50	10.30	14.30		12.70	17.40	21.40	25.40	28.50	33.30	25.40
12	323.85	3.96	4.57	–		6.35	8.38	9.52	9.52	10.31	14.27		12.70	17.48	21.44	25.40	28.58	33.32	25.40
350A	355.60	4.00	5.00		8.00	7.90	9.50	11.10	9.50	11.10	15.10		12.70	19.00	23.80	27.80	31.80	35.70	
14	355.60	3.96	4.78	6.35		7.92	9.52	–	9.52	11.13	15.06		12.70	19.05	23.83	27.79	31.75	35.71	
400A	406.40	4.50	5.00		8.00	7.90	9.50	12.70	9.50	12.70	16.70		12.70	21.40	26.20	30.90	36.50	40.50	
16	406.40	4.19	4.78	6.35		7.92	9.52	–	9.52	12.70	16.66		12.70	21.44	26.19	30.96	36.52	40.46	
450A	457.20	4.50	5.00		8.00	7.90	11.10	14.30	9.50	14.30	19.00		12.70	23.80	29.40	34.90	39.70	45.20	
18	457.20	4.19	4.78	6.35		7.92	11.12	–	9.52	14.27	19.05		12.70	23.82	29.36	34.92	39.67	45.24	
500A	508.00	5.00	5.50		9.50	9.50	12.70	15.10	9.50	15.10	20.60		12.70	26.20	32.50	38.10	44.40	50.00	
20	508.00	4.78	5.54	6.35		9.52	12.70	–	9.52	15.06	20.62		12.70	26.19	32.54	38.10	44.45	49.99	
550A	558.80	5.00	5.50		9.50	9.50	14.30	15.90	9.50	15.90	22.20		12.70	28.60	34.90	41.30	47.60	54.00	
22	558.80	4.78	5.54	6.35		9.52	12.70	–	9.52	15.87	22.22		12.70	28.58	34.92	41.28	47.62	53.98	
600A	609.60	5.50	6.50		9.50	9.50	–	17.50	9.50	17.50	24.60		12.70	31.00	38.60	46.00	52.40	59.50	
24	609.60	5.54	6.35	6.35		9.52	14.27	–	9.52	17.48	24.61		12.70	30.93	38.89	48.02	52.37	59.51	
650A	660.40	5.50	8.00		12.70	12.70	15.90	17.50	9.50	17.50			12.70	34.00	–	49.10	–	64.20	
26	660.40	–	–	7.92		12.70	–	–	9.52	–			12.70						
700A	711.20	5.50	8.00		12.70	12.70	15.90	17.50	9.50	17.50			12.70						
28	711.20	–	–	7.92		12.70	15.88	–	9.52	–			12.70						
750A	762.00	6.50	8.00		12.70	12.70	15.90	17.50	9.50	17.50			12.70						
30	762.00	6.35	7.92	7.92		12.70	15.88	–	9.52	–			12.70						
800A	812.80		8.00		12.70	12.70	15.90	17.50	9.50	17.50			12.70						
32	812.80		–	7.92		12.70	15.88	–	9.52	17.48			12.70						
850A	863.80		8.00		12.70	12.70	15.90	17.50	9.50	17.50			12.70						
34	863.80		–	7.92		12.70	15.88	–	9.52	17.48			12.70						
900A	914.40		8.00		12.70	12.70	15.90	19.10	9.50	19.10			12.70						
36	914.40		–	7.92		12.70	15.88	–	9.52	19.05			12.70						
1000A	1016.00		9.50		14.30	12.70	15.90	26.20	9.50	26.20			12.70						
40	1016.00		–					–	9.52				12.70						

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Stainless Pipe (304/304L) Weight (Kg/m)

S : Stainless Steel

O.D	MM	SCH5S	SCH10S	SCH10	SCH20S	SCH20	SCH30	SCH40S	STD	SCH40	SCH60	SCH80S	SCH XS	SCH80	SCH100	SCH120	SCH140	SCH160	SCH XXS
6A 1/8	10.50 10.29	0.24	0.28 0.28		0.34			0.37 0.37	0.37 0.37	0.37 0.37	0.45	0.47	0.47	0.48 0.47					
8A 1/4	13.80 13.72		0.50 0.50		0.59			0.64 0.52	0.64 0.52	0.64 0.52	0.68	0.80	0.81 0.80	0.81 0.80					
10A 3/8	17.30 17.15	0.48	0.64 0.64		0.76			0.86 0.85	0.86 0.85	0.86 0.85	1.01	1.11	1.12 1.11	1.12 1.11					
15A 1/2	21.70 21.34	0.82 0.81	1.03 1.01		1.20			1.32 1.28	1.32 1.28	1.32 1.28	1.47	1.64	1.66 1.64	1.66 1.64				1.99 1.96	2.65 2.58
20A 3/4	27.20 26.67	1.05 1.03	1.31 1.29	1.29	1.54			1.76 1.70	1.76 1.70	1.76 1.70	2.02	2.22	2.26 2.22	2.26 2.22				2.97 2.92	3.77 3.67
25A 1	34.00 33.40	1.33 1.30	2.18 2.11	2.11	2.32			2.59 2.53	2.59 2.53	2.59 2.53	2.92	3.27	3.31 3.27	3.31 3.27				4.40 4.28	5.64 5.50
32A 1 1/4	42.70 42.16	1.69 1.67	2.78 2.72	2.72	2.97			3.51 3.42	3.51 3.42	3.51 3.42	4.28	4.51	4.61 4.51	4.61 4.51				5.79 5.66	7.97 7.84
40A 1 1/2	48.60 48.26	1.93 1.92	3.19 3.14	3.14	3.41			4.14 4.09	4.14 4.09	4.14 4.09	4.94	5.46	5.53 5.46	5.53 5.46				7.34 7.31	9.73 9.64
50A 2	60.50 60.33	2.42 2.41	4.02 3.97	3.97	4.97	4.57		5.50 5.50	5.50 5.50	5.50 5.50	6.79	7.56	7.54 7.56	7.54 7.56				11.23 11.20	13.56 13.58
65A 2 1/2	76.30 73.03	3.88 3.73	5.48 5.32	5.32	6.35	8.05		9.21 8.72	9.21 8.72	9.21 8.72	10.51	11.53	12.08 11.53	12.08 11.53				15.81 15.06	21.73 20.61
80A 3	89.10 88.90	4.55 4.56	6.43 6.52	6.52	8.48	9.48		11.45 11.41	11.45 11.41	11.45 11.41	13.56	15.43	15.43 15.43	15.43 15.43				21.57 21.56	28.04 27.96
90A 3 1/2	101.60 101.60	5.20 5.23	7.37 7.49	7.49	9.72	10.88		13.62 13.71	13.62 13.71	13.62 13.71	16.50	18.82	18.87 18.82	18.87 18.82				28.12	34.38
100A 4	114.30 114.30	5.87 5.90	8.32 8.45	8.45	10.99	13.35		16.19 16.24	16.19 16.24	16.19 16.24	18.96	22.55	22.64 22.55	22.64 22.55		28.53 28.60		33.90 33.88	41.40 41.44
125A 5	139.80 141.30	9.56 9.56	11.55 11.68	11.68	16.79	17.11		21.90 21.99	21.90 21.99	21.90 21.99	26.57	31.28	30.83 31.28	30.83 31.28		40.21 40.68		49.07 49.61	58.18 58.01
150A 6	165.20 168.28	11.33 11.42	13.70 13.96		19.95	21.88		27.96 28.54	27.96 28.54	27.96 28.54	36.12	42.99	42.25 42.99	42.25 42.99		53.75 54.75		66.64 68.17	78.17 80.01
200A 8	216.30 219.08	14.89 14.93	21.15 20.17		33.97	33.46 33.65	36.50 37.18	42.51 42.97	42.51 42.97	42.51 42.97	52.85 53.62	65.29	64.41 65.29	64.41 65.29	75.68 76.54	89.81 91.34	100.42 101.94	110.75 112.38	107.34 108.96
250A 10	267.40 273.05	22.36 22.84	26.25 28.06		42.24	41.61 42.19	50.44 51.54	59.79 60.91	59.79 60.91	59.79 60.91	80.58 82.36		80.58 82.36	94.90 96.78	112.98 115.89	131.14 134.38	153.12 156.69	170.13 174.04	153.12 156.69
300A 12	318.50 323.85	31.34 31.56	35.20 36.35		50.52	49.76 50.22	64.89 65.85	79.08 74.54	73.12 74.54	79.08 80.52	108.36 110.05		96.74 98.43	130.51 133.40	158.38 161.51	185.45 188.83	205.88 210.21	236.57 241.14	185.45 188.83
350A 14	355.60 355.60	35.03 34.69	43.67 41.77	55.24	69.27	68.42 68.59	81.90 82.07	95.25	81.90 82.07	95.25 95.50	128.08 127.75		108.48 108.48	159.31 159.70	196.71 196.94	227.00 226.93	256.49 256.13	284.48 284.55	
400A 16	406.40 406.40	45.05 41.98	49.99 47.82	63.28	79.39	78.42 78.62	93.92 94.12	124.55	93.92 94.12	124.55 124.55	162.11 161.74		124.55 124.55	205.23 205.60	248.13 248.05	289.03 289.54	336.32 336.48	369.14 368.82	
450A 18	457.20 457.20	50.75 47.28	56.32 53.87	71.31	89.52	88.42 88.64	123.35 123.56	157.77	105.95 106.16	157.77 157.45	207.40 207.92		140.62 140.62	256.94 257.15	313.30 312.90	367.13 367.32	412.88 412.59	463.88 464.25	
500A 20	508.00 508.00	62.65 59.92	68.85 69.34	79.35	117.97	117.97 118.21	156.69 156.69	185.40	117.97 118.21	185.40 184.92	250.11 250.34		156.69 156.69	314.44 314.33	384.95 385.39	445.97 445.97	512.74 513.27	570.44 570.34	
550A 22	558.80 558.80	68.98 65.97	75.80 76.35	87.39	129.99	129.99 130.26	193.96 172.76	215.03	129.99 130.26	215.03 214.63	296.74 297.00		172.76 172.76	377.73 377.48	455.46 455.70	532.40 532.16	606.14 606.37	679.03 678.80	
600A 24	609.60 609.60	82.76 83.36	97.65 95.42	95.42	142.01	142.01 142.30	211.62	258.11	142.01 142.30	258.11 257.82	358.48 358.62		188.83 188.83	446.80 445.85	549.03 552.88	645.81 671.75	727.30 726.93	815.33 815.45	
650A 26	660.40 660.40	89.72	130.01	128.73	204.90	204.90 204.90	255.27	280.26	154.03 154.35	280.26			204.90 204.90	530.52		747.67		953.46	
700A 28	711.20 711.20	96.68	140.13	138.75	220.98	220.98 220.98	275.39 275.05	302.40	166.05 166.40	302.40			220.98 220.98						
750A 30	762.00 762.00	122.33 119.53	150.26 148.77	148.77	237.05	237.05 237.05	295.51 295.14	324.55	178.08 178.45	324.55			237.05 237.05						
800A 32	812.80 812.80		160.38	158.79	253.12	253.12 253.12	315.63 315.24	346.69	190.10 190.49	346.69 346.30			253.12 253.12						
850A 34	863.80 863.80		170.54	168.85	269.25	269.25 269.25	335.83 335.41	368.92	202.17 202.59	368.92 368.51			269.25 269.25						
900A 36	914.40 914.40		180.63	178.84	285.26	285.26 285.26	355.87 355.43	425.97	214.14 214.59	425.97 424.88			285.26 285.26						
1000A 40	1016.00 1016.00		238.18		356.82	317.40	396.11	645.99	238.18 238.68	645.99			317.40 317.40						

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Carbon Pipe Weight (Kg/M)

O.D	MM	SPP	SCH10	SCH20	SCH30	STD	SCH40	SCH60	SCH XS	SCH80	SCH100	SCH120	SCH140	SCH 160	SCH XXS
6A 1/8	10.50 10.29	0.42				0.37 0.37	0.37 0.37	0.45 0.00	0.00 0.47	0.48 0.47					
8A 1/4	13.80 13.72	0.61				0.63 0.51	0.63 0.51	0.67 0.00	0.80 0.80	0.80 0.80					
10A 3/8	17.30 17.15	0.85				0.85 0.85	0.85 0.85	1.00 0.00	1.11 1.10	1.11 1.10					
15A 1/2	21.70 21.34	1.31				1.31 1.27	1.31 1.27	1.46 0.00	1.64 1.62	1.64 1.62				1.97 1.94	2.63 2.55
20A 3/4	27.20 26.67	1.68				1.74 1.68	1.74 1.68	2.00 0.00	2.24 2.19	2.24 2.19				2.94 2.89	3.73 3.64
25A 1	34.00 33.40	2.43				2.57 2.50	2.57 2.50	2.89 0.00	3.27 3.24	3.27 3.24				4.36 4.24	5.59 5.45
32A 1 1/4	42.70 42.16	3.38				3.47 3.39	3.47 3.39	4.24 0.00	4.57 4.46	4.57 4.46				5.73 5.61	7.89 7.76
40A 1 1/2	48.60 48.26	3.89				4.10 4.05	4.10 4.05	4.89 0.00	5.47 5.41	5.47 5.41				7.27 7.24	9.63 9.55
50A 2	60.50 60.33	5.31		4.52		5.44 5.44	5.44 5.44	6.72 0.00	7.46 7.49	7.46 7.49				11.11 11.09	13.43 13.45
65A 2 1/2	76.30 73.03	7.47		7.97		9.12 8.64	9.12 8.64	10.40 0.00	11.96 11.41	11.96 11.41				15.65 14.91	21.51 20.40
80A 3	89.10 88.90	8.79		9.39		11.34 11.29	11.34 11.29	13.43 0.00	15.27 15.27	15.27 15.27				21.35 21.35	27.76 27.68
90A 3 1/2	101.60 101.60	10.09		10.78		13.48 13.57	13.48 13.57	16.33 0.00	18.68 18.63	18.68 18.63				27.84	34.03
100A 4	114.30 114.30	12.18		13.22		16.02 16.07	16.02 16.07	18.77 0.00	22.42 22.32	22.42 22.32		28.25 28.32		33.56 33.54	40.99 41.03
125A 5	139.80 141.30	15.01		16.94		21.68 21.77	21.68 21.77	26.31 0.00	30.53 30.97	30.53 30.97		39.81 40.28		48.58 49.11	57.60 57.43
150A 6	165.20 168.28	19.75		21.66		27.68 28.26	27.68 28.26	35.75 0.00	41.83 42.56	41.83 42.56		53.21 54.20		65.98 67.49	77.39 79.21
200A 8	216.30 219.08	30.11		33.13 33.31	36.13 36.81	42.08 42.54	42.08 42.54	52.32 53.08	63.76 64.63	63.76 64.63	74.92 75.77	88.91 90.43	99.41 100.91	109.64 111.26	106.26 107.87
250A 10	267.40 273.05	42.45		41.19 41.76	49.93 51.02	59.19 60.30	59.19 60.30	79.77 81.54	79.77 81.54	93.95 95.81	111.84 114.73	129.82 133.03	151.58 155.12	168.42 172.30	151.58 155.12
300A 12	318.50 323.85	50.01		49.26 49.72	64.24 65.19	72.39 73.79	78.28 79.72	107.27 108.94	95.77 97.45	129.20 132.06	156.79 159.89	183.59 186.94	203.81 208.10	234.20 238.72	183.59 186.94
350A 14	355.60 355.60	34.68	54.69	67.74 67.90	81.08 81.25	81.08 81.25	94.30 94.55	126.79 126.47	107.39 107.39	157.71 158.10	194.74 194.96	224.72 224.65	253.92 253.56	281.63 281.70	
400A 16	406.40 406.40	44.60	62.64	77.63 77.83	92.98 93.17	92.98 93.17	123.30 123.30	160.49 160.12	123.30 123.30	203.17 203.53	245.64 245.56	286.13 286.64	332.94 333.11	365.44 365.11	
450A 18	457.20 457.20	50.24	70.60	87.53 87.75	122.11 122.32	104.88 105.10	156.18 155.87	205.31 205.83	139.21 139.21	254.37 254.57	310.16 309.76	363.45 363.64	408.73 408.45	459.23 459.59	
500A 20	508.00 508.00	62.02	78.55	116.78 117.02	155.12 155.12	116.78 117.02	183.54 183.07	247.60 247.83	155.12 155.12	311.29 311.17	381.09 381.53	441.49 441.49	507.60 508.11	564.71 564.61	
550A 22	558.80 558.80	68.28	86.51	128.68 128.95	192.01 171.03	128.68 128.95	212.87 212.48	293.76 294.02	171.03 171.03	373.94 373.69	450.89 451.13	527.05 526.82	600.05 600.28	672.21 671.99	
600A 24	609.60 609.60	81.93	94.46	140.59 140.88	209.50	140.59 140.88	255.52 255.24	354.88 355.02	186.94 186.94	442.32 441.37	543.52 547.33	639.33 665.01	720.00 719.63	807.15 807.27	
650A 26	660.40 660.40	88.82	127.43	202.85 202.85	252.70	152.49 152.80	277.44		202.85 202.85	525.20		740.17		943.89	
700A 28	711.20 711.20	95.71	137.36	218.76 218.76	272.62 272.29	164.39 164.73	299.37		218.76 218.76						
750A 30	762.00 762.00	121.10	147.28	234.67 234.67	292.54 292.18	176.29 176.65	321.29		234.67 234.67						
800A 32	812.80 812.80		157.20	250.58 250.58	312.46 312.07	188.19 188.58	343.21 342.83		250.58 250.58						
850A 34	863.80 863.80		167.16	266.55 266.55	332.46 332.05	200.14 200.55	365.22 364.81		266.55 266.55						
900A 36	914.40 914.40		177.04	282.40 282.40	352.30 351.86	211.99 212.43	421.69 420.61		282.40 282.40						
1000A 40	1016.00 1016.00			314.22	392.13	235.79 236.28	639.50		314.22 314.22						

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Stainless Plate Weight (JIS) (Kg/SH)

Market Size	1M X 2M		4' X 8'		5' X 10'		5' x 20'	
MM	1,000 x 2,000		1,219 x 2,438		1,524 x 3,048		1,524 x 6,096	
	Grade		Grade		Grade		Grade	
Thickness	304/L	316/L	304/L	316/L	304/L	316/L	304/L	316/L
0.3	4.76	4.79						
0.4	6.35	6.38	9.43	9.49				
0.5	7.93	7.98	11.78	11.86				
0.6	9.52	9.576	14.14	14.23				
0.7	11.10	11.172	16.50	16.60				
0.8	12.69	12.768	18.85	18.97				
1	15.86	15.96	23.57	23.72	36.84	37.07	73.67	74.14
1.2	19.03	19.152	28.28	28.46	44.20	44.48	88.41	88.96
1.5	23.79	23.94	35.35	35.57	55.25	55.60	110.51	111.20
2	31.72	31.92	47.13	47.43	73.67	74.14	147.34	148.27
2.5	39.65	39.9	58.92	59.29	92.09	92.67	184.18	185.34
3	47.58	47.88	70.70	71.15	110.51	111.20	221.02	222.41
4	63.44	63.84	94.27	94.86	147.34	148.27	294.69	296.55
5	79.30	79.80	117.84	118.58	184.18	185.34	368.36	370.68
6	95.16	95.76	141.40	142.30	221.02	222.41	442.03	444.82
7	111.00	111.72	164.97	166.01	257.85	259.48	515.70	518.96
8	126.90	127.68	188.54	189.73	294.69	296.55	589.38	593.09
9	142.70	143.64	212.11	213.44	331.52	333.61	663.05	667.23
10	158.60	159.60	235.67	237.16	368.36	370.68	736.72	741.37
12	190.30	191.52	282.81	284.59	442.03	444.82	884.07	889.64
15	237.90	239.40	353.51	355.74	552.54	556.02	1,105.08	1,112.05
18	285.50	287.28	424.21	426.89	663.05	667.23	1,326.10	1,334.46
20	317.20	319.20	471.35	474.32	736.72	741.37	1,473.44	1,482.73
25	396.50	399.00	589.18	592.90	920.90	926.71	1,841.80	1,853.42
30	475.80	478.80	707.02	711.48	1,105.08	1,112.05	2,210.16	2,224.10

Formula Weight Calculation

1. Plate	T x W x L x S.G / 1,000,000	KG/SH
2. Check Plate	(T x S.G + 1.67) x W x L / 1,000,000	KG/SH
3. Pipe	(O.D − T) x T x (3.1415 x S.G / 1,000)	KG/M
4. Square Pipe	((W + L) x 2 − (TX4)) x T x S.G / 1,000	KG/M
5. R/Bar	PIE x PIE x 0.785 (3.14/4) x S.G / 1,000	KG/M
6. Square Bar	W x L x S.G / 1,000	KG/M
7. Hexagon Bar	PIE x PIE x 0.866 x S.G / 1,000	KG/M
8. Angle	(W + W − T) x T x S.G / 1,000	KG/M

Specific Gravity	
304L	7.93
316L	7.98
Carbon	7.85
CU	8.89
Titanium	4.53
AL	2.72
AL–BRAS	8.40

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Through a philosophy centered around change and growth, SEJUNG METAL continues to develop new business fields, endeavoring to promote competitiveness internationally.

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