



POSCO has established integrated manufacturing system from melting shop to hot & cold rolling process. POSCO produces 200 million tons of stainless steel products annually. POSCO also pursues complete quality control and delivery management, and strives to achieve customer satisfaction.

Contents

Pohang & Gwangyang Steelworks	04
Manufacturing Processes & Equipment	06
characteristics and usages	08
Ordering	43
Available Size	44
Size Tolerances	53
CR Surface Finishing	58
Packaging & Labeling	59
Handling	61



Pohang & Gwangyang Steelworks

Pohang Steelworks



Upon completion of its first-phase manufacturing facility in 1973, Pohang Steelworks, Korea's first integrated steel mill, was finally completed after 4 stages of construction at Young-il Bay in February 1981.

POSCO is capable of producing and processing a variety of carbon steels and stainless steels. The company's global competitiveness was further enhanced when we opened the world's first FINEX commercialization facility in May 2007.

Main products _ Hot-rolled steel, Plate, Cold-rolled steel, Wire rod, Electrical steel, Stainless steel, API steel, etc.

Crude steel production _ 16,852 million tons (as of 2021)

Gwangyang Steelworks



Gwangyang Steelworks is the world's largest integrated steel mill which features an optimal layout for processing carbon steel.

Products from Gwangyang works include automotive steel, high-strength hot rolled steel, high-quality API steel, and thick plates among other products.

With the goal of specializing in the manufacturing of the world's best automotive steels, Gwangyang Steelworks focuses on enhancing its competitive edge.

Main products _ Hot-rolled steel, Plate, Cold-rolled steel, Car steel, API steel, etc.

Crude steel production _ 21,412 million tons (as of 2021)

Creation of customer value by securing product quality and cost competitiveness

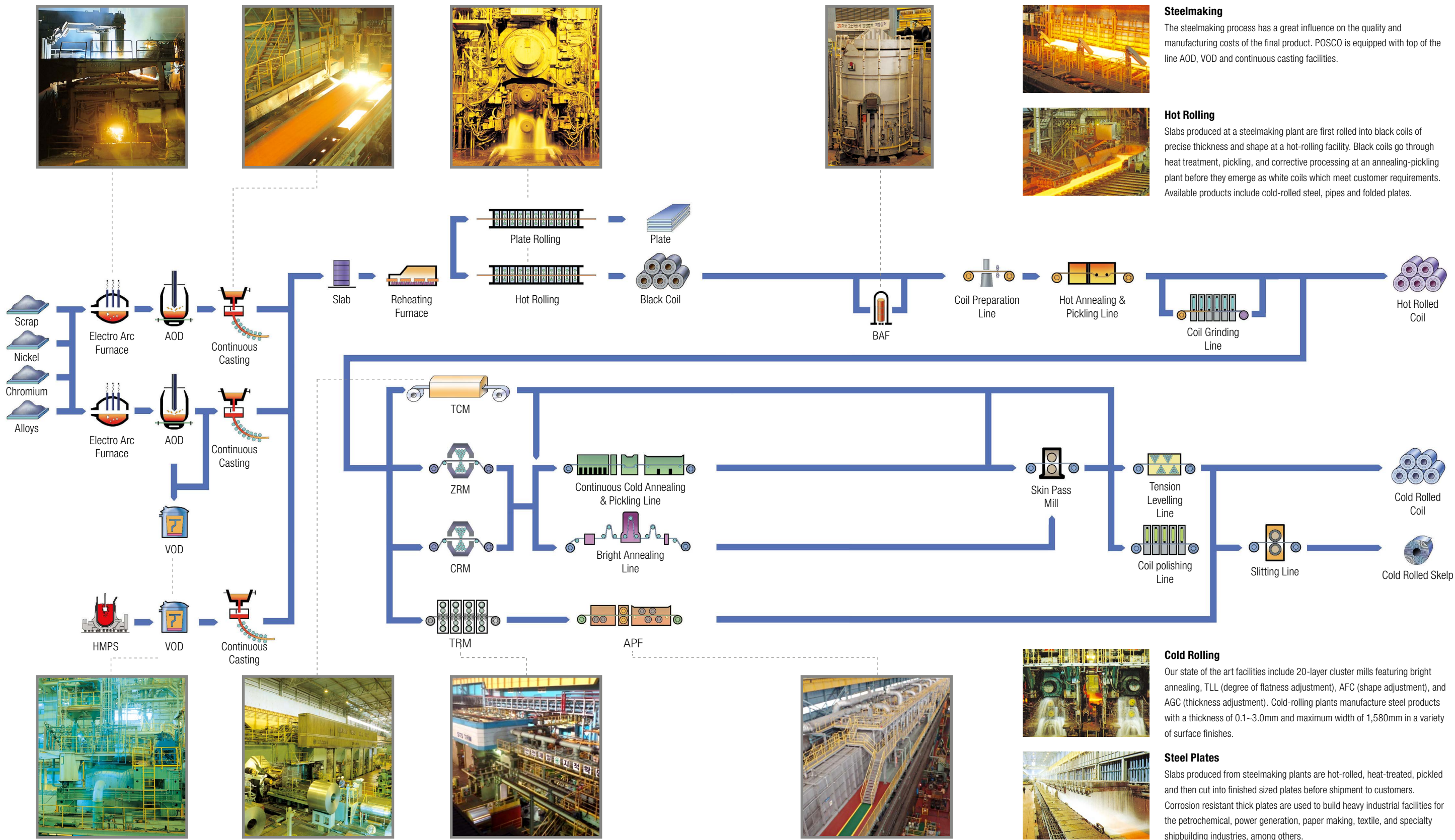
Realization of symbiotic values through the establishment of a robust industrial ecosystem with suppliers, partners, and customers

- Development of quality and top-notch products that can impress our customers
- Creating customer value by securing cost competitiveness with suppliers and partners
- Robust facility implementation and smart facility management that can be called the cornerstone of production and quality



Manufacturing Processes & Equipment

In order to deliver quality products meeting customer requirements, POSCO is equipped with the latest fully-automated, computer-controlled, cutting-edge facilities and technologies. These tools guarantee products of the highest precision and quality for our customers.



Characteristics and usages

301

301L

17Cr-7Ni

17Cr-7Ni-LC

AUSTENITE

DUPLEX

FERRITE

MARTENSITE

Characteristics

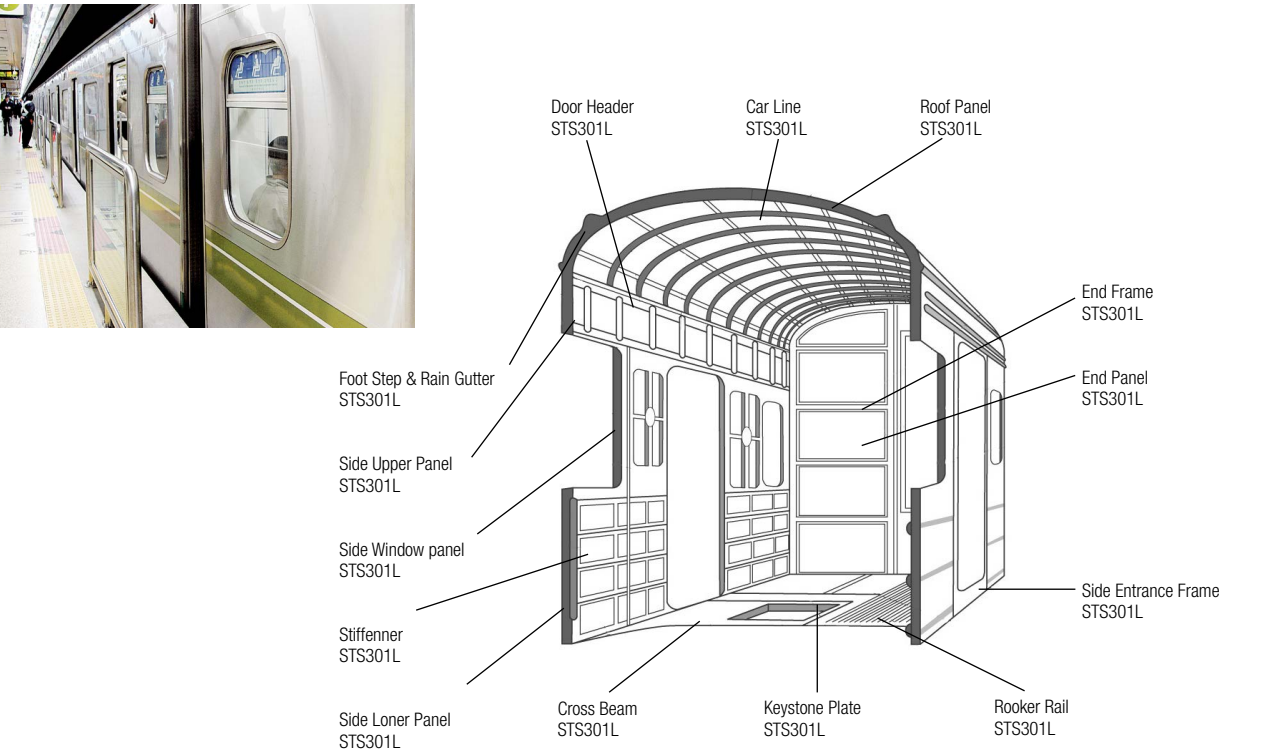
301 and 301L contain lower Cr and Ni content than 304 steel does. Cold working increases strength and generates magnetism. Compared to Aluminium, they are excellent in corrosion resistance, strength at high temperature, and fatigue strength. They are applicable for railway vehicles due to their economical efficiency, safety and light weight.

Products available

Hot rolled coil, Cold rolled coil

Applications

- Train interior and exterior panels, Structural materials of train, Components of electronic products, Spring



Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁵ /°C (20~100°C)	Thermal Conductivity W/m·°C (100°C)
301	301	≤0.15	16.0~18.0	6.00~8.00	-	-	≥205	≥520	≥40	≤218	0.50	7.93	16.9	16.3
301L	301L	≤0.030	16.0~18.0	6.00~8.00	-	N≤0.2	≥215	≥550	≥45	≤218	0.50	7.93	16.9	16.3

Characteristics and usages

304

304L

18Cr-8Ni

18Cr-8Ni-LC

AUSTENITE

DUPLEX

FERRITE

MARTENSITE

Characteristics

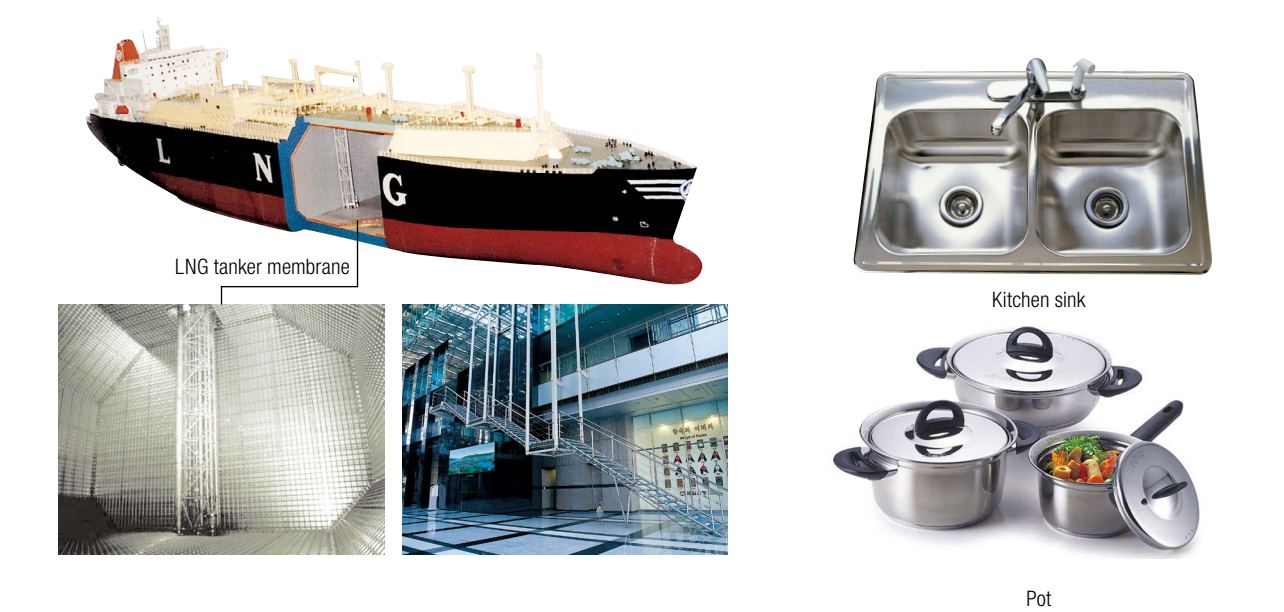
- 304 : Most widely used steel type because of its good corrosion resistance, thermal resistance, strength at low-temperature and mechanical properties.
- 304L : Low-carbon 304 stainless steel. It is excellent in intergranular corrosion resistance.

Products available

304, 304L : Hot rolled coil, Cold rolled coil, Plate

Applications

- 304 : Household utensils (sink, interior pipe, hot-water system, bathtub, boiler and others), Automotive components (wiper, muffler, molding), medical instruments, building materials, some industries (chemical, food processing, textile) and vessel parts.
- 304L : Machinery and tools used in chemical, coal, and petroleum industries that require high inter-granular corrosion resistance, Building materials, heat resistant parts and parts that is difficult to implement heat treatment, LNG tank.



Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁵ /°C (20~100°C)	Thermal Conductivity W/m·°C (100°C)
304	304	≤0.08	18.0~20.0	8.00~10.50	-	-	≥205	≥520	≥40	≤200	0.50	7.93	17.3	16.3
304L	304L	≤0.030	18.0~20.0	19.0~22.0	-	-	≥175	≥480	≥40	≤200	0.50	7.93	17.3	16.3

Characteristics and usages

304J1

17Cr-8Ni-2Cu

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

With an addition of Cu, 304J1 has excellent antibiosis, formability, and deep drawability, also used for products requiring sanitary environment.

Products available

Hot rolled coil, Cold rolled coil

Applications

- Thermos bottle, Thermos lunch box, Kitchen pot, Catering facilities, Products requiring spinning drawing



Pot



Kitchen sink



A Section of Thermos



Components of Burner (Presenting the process of forming)

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga- tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
304J1	304J1	≤0.08	15.0~18.0	6.0~9.0	-	Cu 1.0~3.0	≥155	≥450	≥40	≤200	0.50	7.93	17.3	16.3

Characteristics and usages

309S
310S

22Cr-13Ni
25Cr-20Ni

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

Highly alloyed stainless steel. It has high strength and corrosion resistance in high temperature.

Products available

Hot rolled coil, Cold rolled coil, Plate

Applications

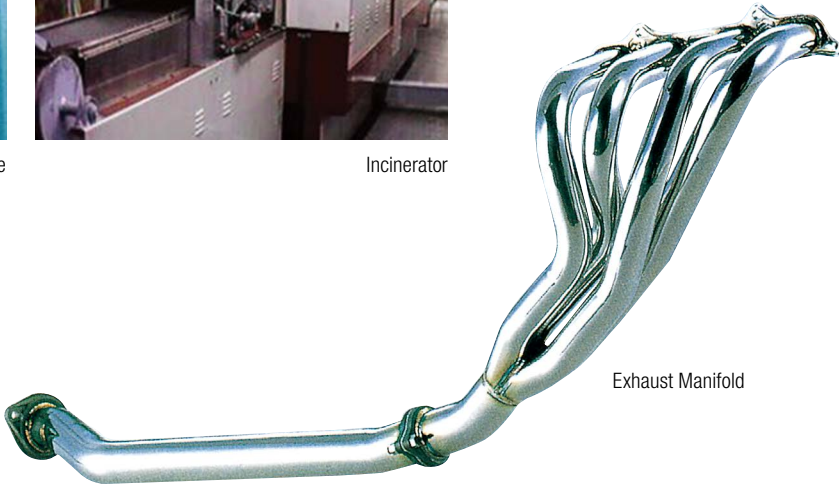
- Exhaust Manifold, Heat exchanger, Incinerator, Furnace, Contact components with high temperature



Furnace



Incinerator



Exhaust Manifold

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga- tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
309S	309S	≤0.08	22.0~24.0	12.0~15.0	-	-	≥205	≥520	≥40	≤200	0.50	7.98	15.9	14.2
310S	310S	≤0.08	24.0~26.0	19.0~22.0	-	-								

Characteristics and usages

304CuW 18.5Cr-8.5Ni-2Cu-0.5W-0.2Nb
(S30441)

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics
Higher pitting corrosion and stress corrosion cracking resistance than 304.
W, Si, Nb inhibit pitting initiation and Cu, W inhibit pit propagation.

Products available
Hot rolled coil, Cold rolled coil

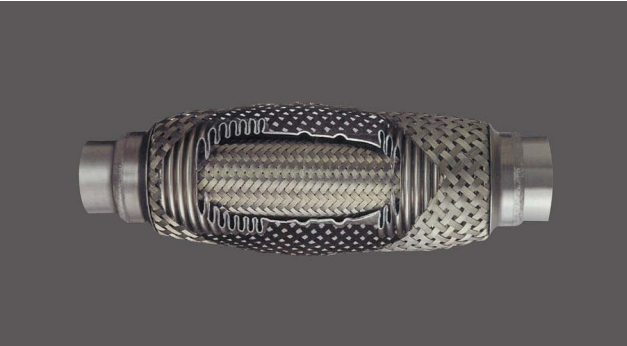
Applications
Boiler, hot water tank, exhaust system, water purifier



Boilder



Water Tank



Exhaust System



Water Purifier

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
ASTM	POSCO	C	Cr	Ni	Cu	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
S30441	304CuW	≤0.08	17.5~19.5	8.0~10.5	1.5~2.5	Nb0.1~0.5 W 0.2~0.8	≥205	≥515	≥40	≤92	-	-	-	-

Characteristics and usages

316 18Cr-12Ni-2Mo
316L 18Cr-12Ni-2Mo-LC

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics
316 : With the addition of Mo in 304, 316 steel is superior in corrosion resistance, pitting resistance and high temperature strength.
316L : Low carbon 316 steel type. It has all the properties of 316 steel and has excellent inter-granular corrosion resistance.

Products available
Hot rolled coil, Cold rolled coil, Plate

Applications
316 : Potable water pipe, Equipment for manufacturing chemicals, paper, dye, acetic and fertilizer, Structures in the coastal area Photo industries and food processing industries
316L : Suitable for the corrosion-susceptible environments such as salt and toxic gas which one of the 316 steel usages



Food Processing Facility



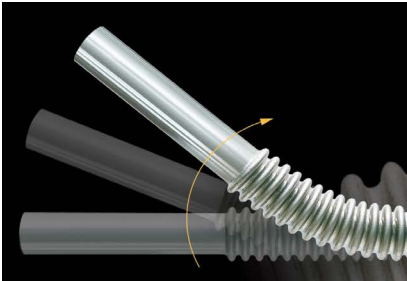
Water Pipe



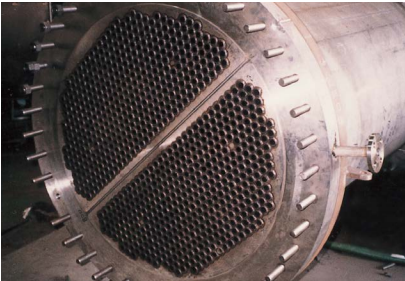
Heat Exchanger



Chemical Plant



Flexible Pipe



Heat Exchanger

Chemical compositions and physical properties

Designations	Chemical Composition(%)					Mechanical Properties				Physical Properties			
	C	Cr	Ni	Mo	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
KS(JIS) 316	≤0.08	16.0~18.0	10.00~14.0	2.0~4.0	-	≥205	≥520	≥40	≤200	0.50	7.98	15.9	16.3
KS(JIS) 316L	≤0.03	16.0~18.0	12.00~15.0	2.00~3.00	-	≥175	≥480	≥40	≤200	0.50	7.98	15.9	16.3
ASTM 316L	≤0.03	16.0~18.0	10.0~14.0	2.00~3.00	-	≥170	≥485	≥40	≤95(HRB)				

Characteristics and usages

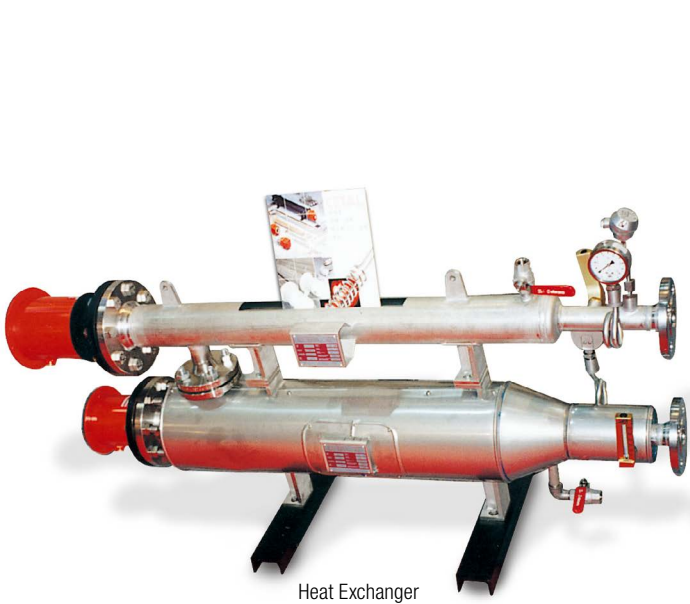
316Ti 17Cr-11Ni-2Mo-0.13Ti

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics
316Ti : Ti is added to 316 to increase inter-granular corrosion resistance.

Products available
316Ti : Hot rolled coil, Cold rolled coil, Plate

Applications
316Ti : Crude oil tank, Heat exchanger cover



Heat Exchanger



Tank for Petrochemical Products



Chemical Plant

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m°C (100°C)
316Ti	316Ti	≤0.08	16.0~18.0	10.00~14.0	2.00~3.00	Ti 5xC% 이상	≥205	≥520	≥40	≤200	0.50	7.98	15.9	16.3

Characteristics and usages

321 18Cr-9Ni-0.3Ti

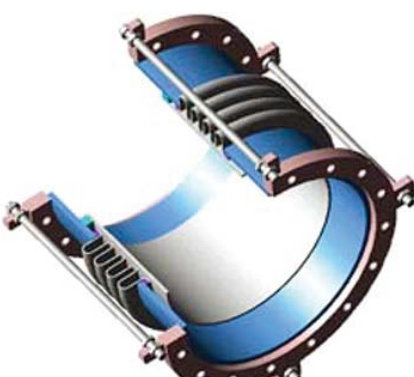
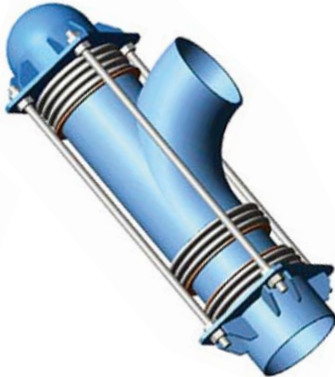
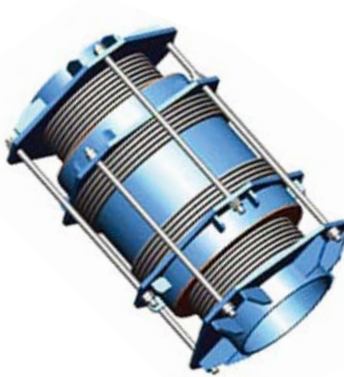
AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics
Ti is added to 304 steel to prevent inter-granular corrosion. Applicable to usages at temperature between 430 and 900°C

Products available
Hot rolled coil, Cold rolled coil, Plate

Applications

- Exhaust pipe of aircraft, Boiler cover, Heat exchanger, Boiler pipe
- Some parts that are impossible for heat treatment after welding or assembling



Expansion Joint

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m°C (100°C)
321	321	≤0.08	17.0~19.0	9.00~13.00	-	Ti 5xC% 이상	≥205	≥520	≥40	≤200	0.50	7.93	16.7	16.1

Characteristics and usages

347

18Cr-9Ni-0.5Nb

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

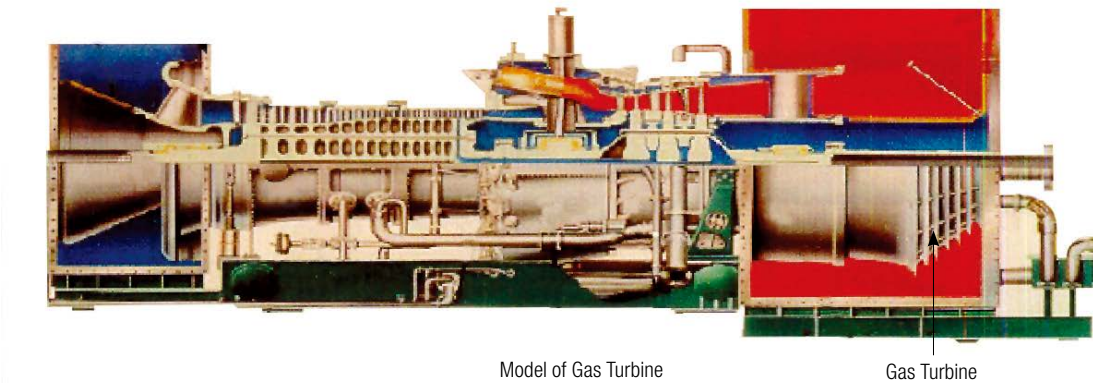
Nb is added to 304 steel to increase inter-granular corrosion resistance.

Products available

Plate

Applications

Welding structure or some parts used at temperature between 400 and 900°C : Pipe, flange, tube, turbine components for high temperature and high compressed air.



Model of Gas Turbine

Gas Turbine

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
347	347	≤0.08	17.0~19.0	9.0~13.0	-	Nb10xC% 이상	≥205	≥520	≥40	≤200	0.5	7.98	16.7	16.1

Characteristics and usages

309Si
(EN 1.4828)

19.2Cr-11.4Ni-1.9Si

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

Excellent oxidation resistance at elevated temperature by adding Si.
Critical temperature of the oxidation resistance is 950~1000°C.

Products available

Hot rolled coil, Cold rolled coil

Applications



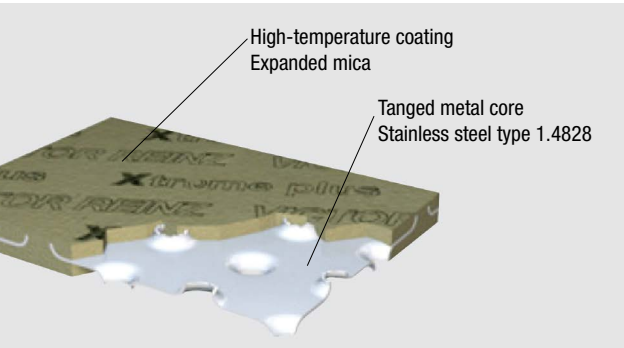
Bellows and interlock of exhaust system



Exhaust header



Adjust ring of turbocharger in automobile



Gasket for high temperature

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
EN	POSCO	C	Cr	Ni	Si	N	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
1.4828	1.4828	≤0.2	19.0~21.0	11.0~13.0	1.5~2.5	≤0.11	≥230	550~750	≥30	≤223	-	-	15.6	15.2

Characteristics and usages

290

18Cr-3.5Ni-3.8Mn-0.2N

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics
Highly functional products that have corrosion resistance of 304 steel and can be implemented with high strength

Products available
Hot rolled coil, Cold rolled coil

Applications
Stone loadings for high strength specialized purposes,
LCD Crate, Water Tank, etc.



Stone loading



LCD Crate



Water Tank

Chemical compositions and physical properties

Designations		Chemical Composition(%)							Mechanical Properties				Physical Properties			
KS	POSCO	C	Si	Mn	Cr	Ni	N (ppm)	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga- tion (%)	Hard- ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
290	290	0~0.15	≤1	2~4	17~19	3~5	1500~2500	P 0~0.045 S 0~0.03 Cu 0~3	350~	650~	50~	~230	-	7.93	-	-

Characteristics and usages

316HN

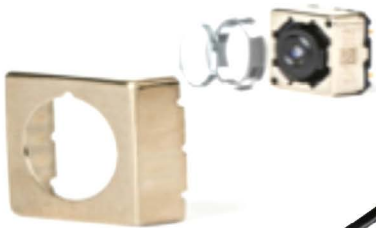
21Cr-9Ni-0.6Mo-0.2N

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics
Steel types developed to replace 316 L material with low cost, high internal/high stren gth materials

Products available
Hot rolled coil, Cold rolled coil

Applications
Mobile devices and Steel pipe



Smartphone Camera Module



Smartphone Frame



Plant Piping

Chemical compositions and physical properties

Designa- tions	Chemical Composition(%)								Mechanical Properties				Physical Properties			
POSCO	C	Si	Mn	Cr	Ni	Mo	N (ppm)	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga- tion (%)	Hard- ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
POSCO 316HN	≤0.125	≤1.2	≤1.2	20~23	9~14	≤1.0	0.1~1.0	Cu 0~1.5 P 0~0.045 S 0~0.03	≥150	≥400	≥35	≤180	0.57	7.9	16.4	18.4

Characteristics and usages

31254 20Cr – 18Ni – 6Mo – 0.2N

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

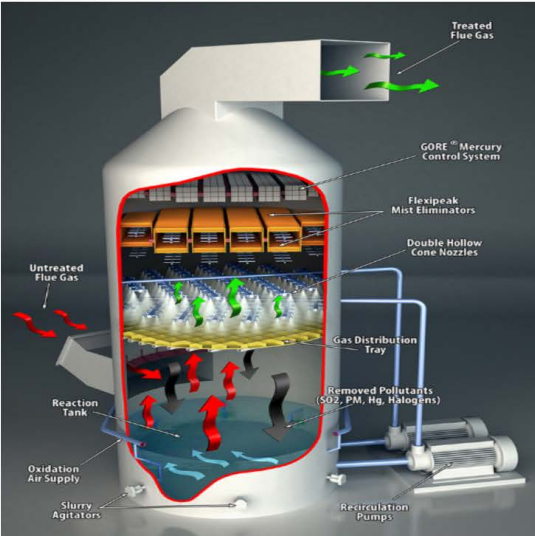
Characteristics
Super Austenitic STS of 20Cr – 18Ni – 6Mo – 0.2N Base, high corrosion resistant high alloy steel of PREN 43. This product is applied to fields such as seawater desalination PJT.

Product available
Hot rolled coil, Cold rolled coil, Plate

Applications
Marine SOx scrubber, Flue-gas desulfurization of thermal power plant etc



Marine SOx scrubber



Flue-gas desulfurization of thermal power plant

Chemical compositions and physical properties

Designations	Chemical Composition(%)								Mechanical Properties				Physical Properties			
	C	Si	Mn	Cr	Ni	Mo	N (ppm)	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m°C (100°C)
POSCO																
ASTM S31254	0~0.02	0~0.8	0~1	19.5~20.5	17.5~18.5	6~6.5	1800~2500	Cu 0.5~1	≥310	≥690	≥35	≤96	-	-	-	-

Characteristics and usages

S32304 23Cr-4.2Ni-0.3Mo

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics
S32304 is a lean duplex stainless steel characterized by better strength and corrosion resistance than 316L.

Product available
• Plate

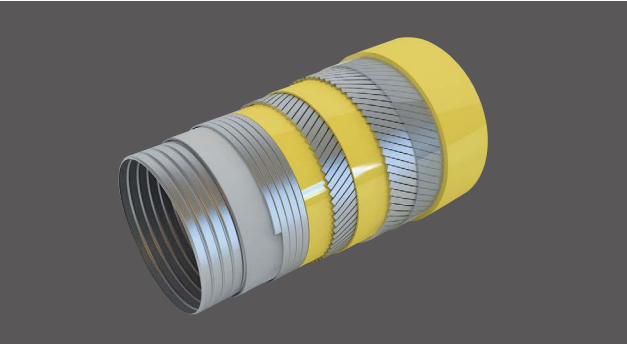
Applications
• Desalination plant, Bridge, Piping, Offshore structures



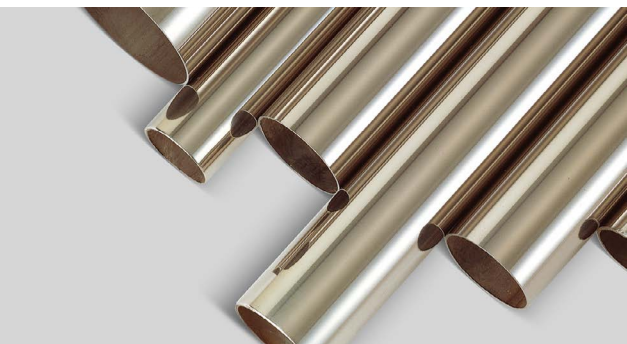
MED desalination plant



Water tank



Flexible flowline



Water pipe

Chemical compositions and physical properties

Designations	Chemical Composition(%)								Mechanical Properties				Physical Properties			
	C	Si	Mn	Cr	Ni	Mo	N		Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m°C (100°C)
ASTM																
S32304	≤0.03	≤1.0	≤2.5	21.5~24.5	3.0~5.5	0.05~0.6	0.05~0.20		≥400 (515)	≥600 (700)	≥25 (37)	≤318 (230)	0.50	7.8	13.0	15.0

Characteristics and usages

329J3L22Cr-5Ni-3Mo-0.15N

329J4L25Cr-7Ni-3Mo-0.18N

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

The content of Cr, Mo and N gives an excellent chlorine induced corrosion resistance, SCC and erosion corrosion. It is controlled to contain 50% of Austenite and Ferrite, respectively.

Products available

- Hot rolled coil, Cold rolled coil

Applications

- Tube and pipe for gas petroleum products
- Desalination facilities, water reservoir and water cleaning facilities
- Pressure vessels, tank, pipe and heater exchanger to produce or transport chemical products
- Pressure vessels, tank, pipe for containing salty liquid and food industry
- Duct of desulfurization facilities



Water Pipe



Water Tank



Water Reservoir



Desalination Plant (Resource : Doo San heavy industries)

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10⁻⁶/°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
329J3L	329J3L	≤0.03	21.0~24.0	4.5~6.5	2.5~3.5	N 0.08~0.20	≥450	≥620	≥18	≤320	0.4	7.80	13.7	19.0
329J4L	329J4L	≤0.03	24.0~26.0	5.5~7.5	2.5~3.5	N 0.08~0.20	≥450	≥620	≥18	≤320	0.4	7.80	13.7	19.0

Characteristics and usages

S3180322Cr-5Ni-3Mo

(S32205)

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics S31803 is a standard duplex stainless steel with the content of 22% Cr and 3% Mo. It has an excellent chlorine induced corrosion resistance. A chemical composition is controlled to have an equally balanced mixture of ferrite and austenite.

Product available

Hot rolled coil, Cold rolled coil, Plate

Applications

- Tubes and pipes for oil and gas industries
- Desalination facilities and water treatment systems
- Heat exchangers, pipes and pressure vessels to produce or transport chemical products
- Pressure vessels, tanks and pipes for containing salty liquids and food industries
- Duct of desulfurization facilities



FPSO top-side modules



Power plant



Desalination plant



Petroleum plant

Chemical compositions and physical properties

Designations		Chemical Composition(%)							Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Si	Mn	Cr	Ni	Mo	N	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10⁻⁶/°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
JIS(KS)	329J3L	≤0.03	≤1.0	≤2.0	21.0~24.0	4.5~6.5	2.5~3.5	0.08~0.20	≥450 (600)	≥620 (785)	≥18 (35)	≤320 (250)	0.50	7.8	13.0	15.0
ASTM	S32205	≤0.03	≤1.0	≤2.0	22.0~23.0	4.5~6.5	3.0~3.5	0.14~0.20	≥450	≥655	≥25	≤310	0.50	7.8	13.0	15.0
	S31803	≤0.03	≤1.0	≤2.0	21.0~23.0	4.5~6.5	2.5~3.5	0.08~0.20	≥450 (595)	≥620 (760)	≥25 (39)	≤310 (250)	0.50	7.8	13.0	15.0

Characteristics and usages

S32750 25Cr-7Ni-4Mo

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

S32750 is a super duplex stainless steel which has the high content of 25%Cr and 4%Mo. It has an excellent chlorine induced corrosion resistance, stress corrosion cracking and erosion corrosion. Due to high nitrogen content and duplex microstructure, it has a high mechanical strength as well as superior corrosion resistance.

Products available

Plate

Applications

- Oil and gas industries • Offshore structures • Desalination plant • Chemical industries



Offshore structure



RO desalination plant



Chemical Plant



FPSO top-side

Chemical compositions and physical properties

Designations		Chemical Composition(%)							Mechanical Properties				Physical Properties			
ASTM	POSCO	C	Si	Mn	Cr	Ni	Mo	N	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
S32750	2507 S32750	≤0.03	≤0.8	≤1.2	24.0~26.0	6.0~8.0	3.0~5.0	0.24~0.32	≥550	≥795	≥15	≤310	0.45	7.8	13	17

Characteristics and usages

409L 11Cr-0.2Ti-LCN
AL409L

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

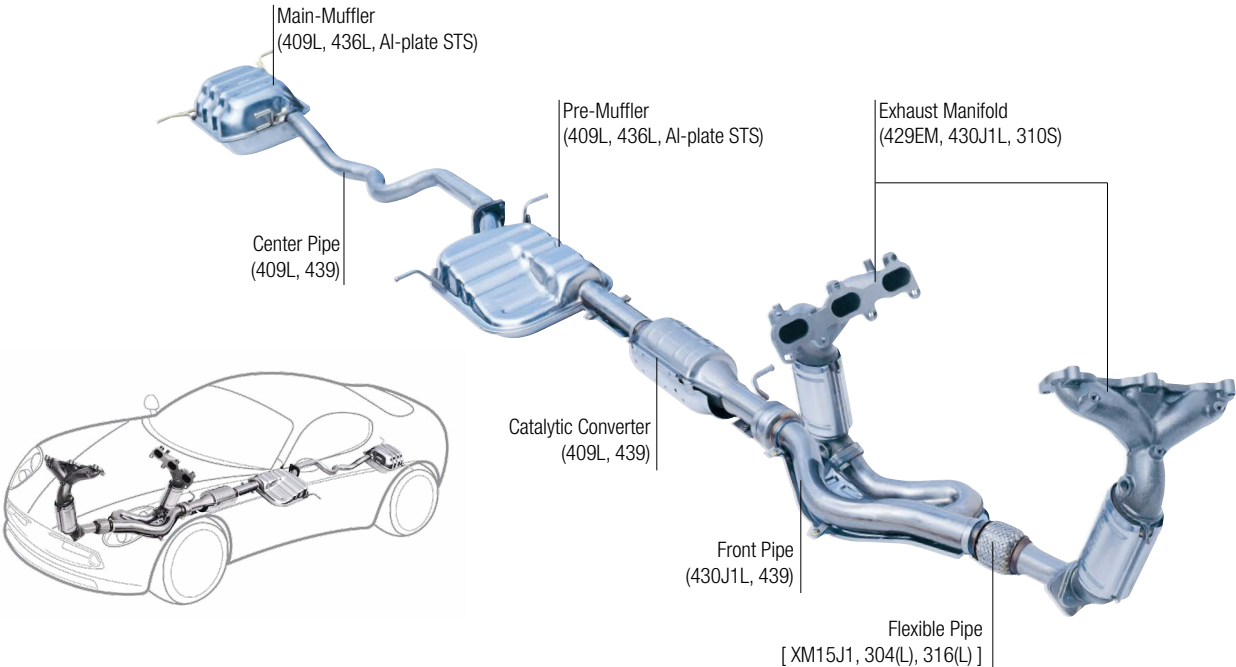
409L : Excellent weldability and formability bu adding Ti
AL409L : Alcoating to 409L steel improves corrosion resistance

Products available

409L : Hot rolled coil, Cold rolled coil
AL409L : Cold rolled coil

Applications

409L : Auto exhaust parts(Front Pipe, Converter Shall, Center Pipe, Tail End Pipe), Heat Exchange r, Container, Heat resistance components
AL409L : Al Coating for Automotive Exhaust Machinery



Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
409L (AL409L)	409L (AL409L)	≤0.03	10.50~11.75	-	-	Ti 6xC% ~0.75	≥175	≥360	≥25	≤175	0.46	7.75	6.5	24.9

Characteristics and usages

410L 12Cr-LCN

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

Lower C contents than 410 stainless steel. It has good formability, bendability and high temperature oxidation resistance.

Products available

Hot rolled coil, Cold rolled coil

Applications

- Products requiring abrasion resistance and good weldability :
reefer container, automotive, mining & industrial machinery components.
- Products requiring formability and oxidation resistance at the temperature lower than 820°C :
Boiler combustion chamber, burner components.



Reefer Container

Boiler Combustion Chamber

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga- tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
410L	410L	≤0.03	11.0~13.5	-	-	-	≥195	≥360	≥22	≤200	0.46	7.75	9.9	25.1

Characteristics and usages

429EM 14Cr-1Si-0.2Ti-LC

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

Heat resisting stainless steel. Si, Ti, Mn and Cu are added while the content of C and N is lowered. It has great high temperature strength, oxidation resistance, formability and weldability.

Products available

Cold rolled coil

Applications

Auto exhaust system : Heat resisting parts such as exhaust manifold, front pipe



Automobile exhaust system

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga- tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
-	429EM	≤0.020	13.0~15.0	-	-	Si≤1.5	≥205	≥400	≥25	≤180	0.456	7.62	10.6	20.9

Characteristics and usages

43016Cr-0.05C

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

Representative Ferritic Staniless Steel. It has low thermal expansion coefficient, excellent oxidation resistance.

Products available

Hot rolled coil, Cold rolled coil

Applications

Heat resistant products, Burner, Home appliances, Computer components (HDD), Flatware, Interior and exterior materials for architecture, Gas range stove, Washing machine



Refrigerator



Hard disk drive



Microwave



Gas Stove top

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga- tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
430	430	≤0.12	16.0~18.0	-	-	-	≥205	≥450	≥22	≤200	0.46	7.70	10.5	23.9

Characteristics and usages

430J1L19Cr-0.5Cu-0.4Nb-LCN

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

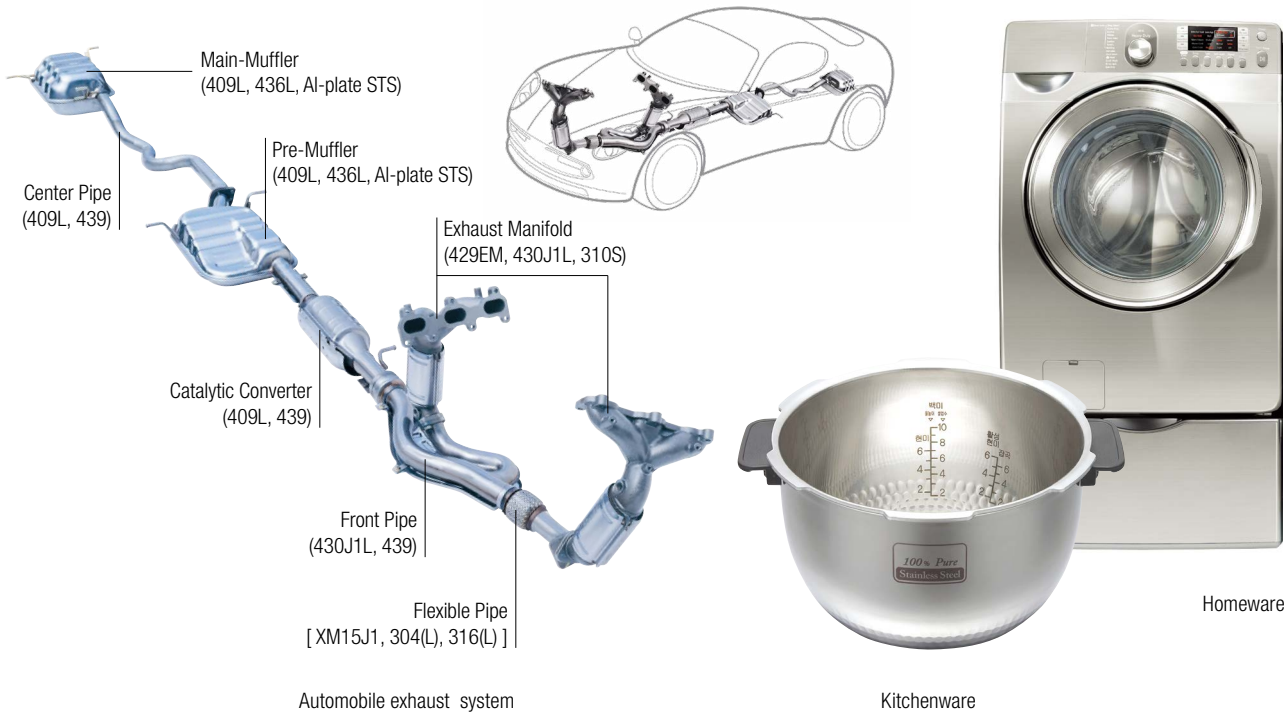
Cu and Nb are added to 430 stainless steel. It has superior corrosion resistance, drawability, weldability and high temperature oxidation resistance.

Products available

Hot rolled coil, Cold rolled coil

Applications

- Manufacturing : Kitchenwares, home appliances (washing machine, electrical rice cooking machine, etc)
- Heat resistance : Auto exhaust system (exhaust manifold, front pipe, muffler)
- Exterior materials : Molding, Exterior materials for building, Guardrail pipes



Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga- tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
430J1L	430J1L	≤0.025	16.0~20.0	-	-	N≤0.025	≥205	≥390	≥25	≤200	0.46	7.70	10.4	26.2

Characteristics and usages

436L18Cr-1Mo-0.3Ti-LCN

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

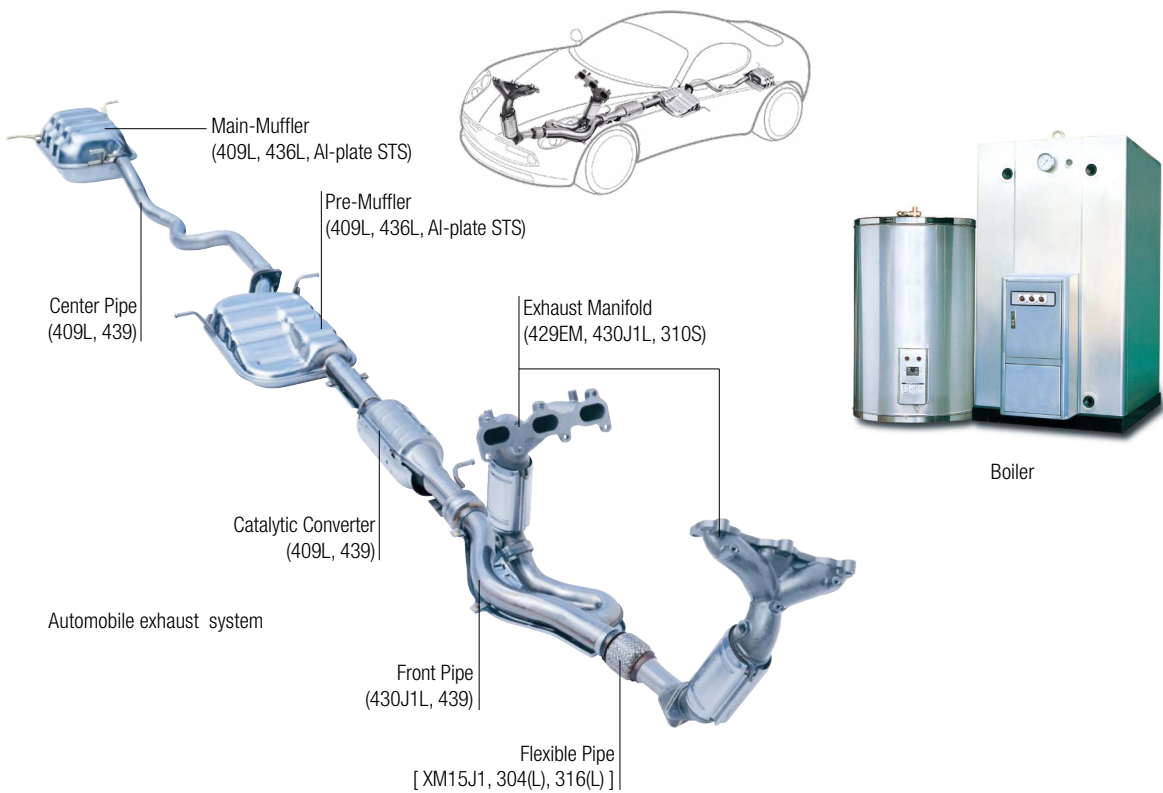
Excellent in corrosion resistance, drawability and weldability due to the addition of Mo, Ti and Nb.

Products available

Hot rolled coil, Cold rolled coil

Applications

- Auto exhaust parts • Hot water system • Electric home appliances



Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
436L	436L	≤0.025	16.0~19.0	-	0.75~1.5	Ti, Nb, Zr 8x(C%+N%) ~0.8	≥245	≥410	≥20	≤230	0.46	7.70	9.3	23.9

Characteristics and usages

439AL43918Cr-0.3Ti-LCN

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

439 : With high thermal conductivity and low thermal expansion coefficiency, its is suitable for heat exchanger and auto exhaust parts
AL439 : Alcoating to 439 steel improves corrosion resistance

Products available

439 : Hot rolled coil, Cold rolled coil
AL439 : Cold rolled coil

Applications

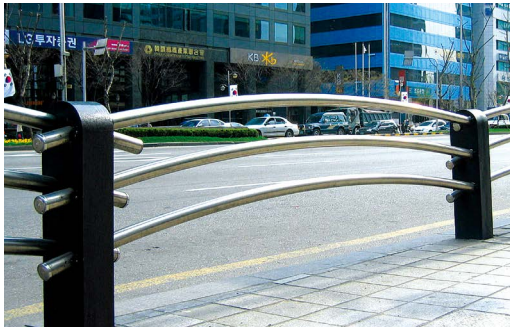
439 : Auto exhaust parts, Ornamental pipes, Home appliance(washing machine)
AL439 : Al Coating for Automotive Exhaust Machinery



Hand rail



Clad cookware



Fence

Chemical compositions and physical properties

강종		화합성분(%)					기계적성질				물리적성질			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	내력(0.2%) (N/mm ²)	인장강도 (N/mm ²)	연신율 (%)	경도 (Hv)	비열 J/g°C	비중	열팽창 계수 10 ⁻⁶ /°C (20-100°C)	열전도도 W/m·°C (100°C)
439 (AL439)	439 (AL439)	≤0.03	17.0~19.0	-	-	Ti 0.1~1.0	≥205	≥380	≥25	≤180	0.46	7.70	10.5	26.4

Characteristics and usages

44118Cr-0.4Nb-0.2Ti-LCN

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

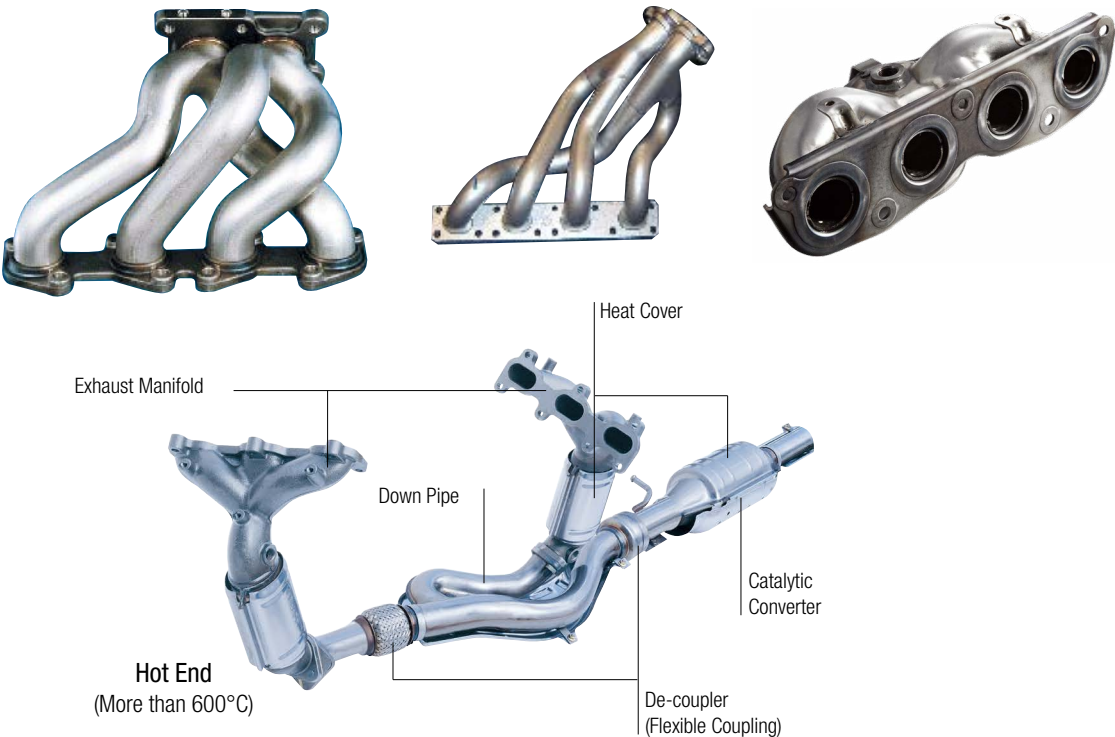
The content of 18Cr and Si secures oxidation resistance. The addition of Ti and Nb and the reduction of C and N improve high temperature strength, weldability, and formability

Products available

Cold rolled coils

Applications

- Auto exhaust system : Heat resisting parts such as exhaust manifold, front pipe, and catalytic converter



Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20~100°C)	Thermal Conductivity W/m·°C (100°C)
-	441	≤0.03	17.5~18.5	≤1.0	-	Si≤1.0 Ti 0.1~0.6 Nb 9C+0.3~1.0	≥250	430~630	≥25	≤175	0.462	7.60	10.1	27.1

Characteristics and usages

44419Cr-2Mo-Nb/Ti-LCN

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

Higher Cr and Mo content bring great inter-granular corrosion resistance and SCC resistance.

Products available

Hot rolled coil, Cold rolled coil

Applications

- Potable water tank • Hot water system(solar/electric) • Heat exchanger • Auto Exhaust Manifold



Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga-tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20~100°C)	Thermal Conductivity W/m·°C (100°C)
444	444	≤0.025	17.0~20.0	-	1.75~2.5	Ti, Nb, Zr 8x(C%+N%) ~0.8	≥245	≥410	≥20	≤230	0.427	7.75	11.0	26.8

Characteristics and usages

445NF

21Cr-0.3Ti-0.4Cu-Si,Nb

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

Higher Cr content increases corrosion resistance and weldability. Applicable for various uses

Products available

Hot rolled coil, Cold rolled coil

Applications

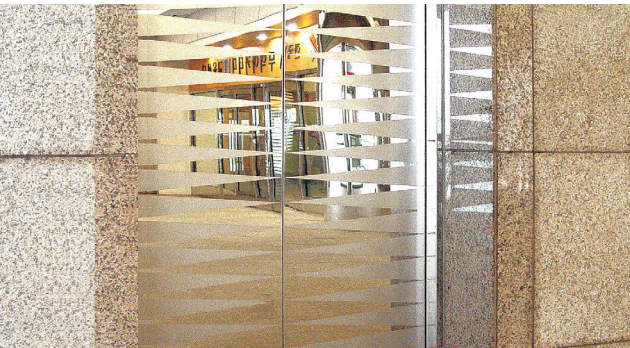
Elevator, Interior and exterior materials for architecture, BBQ grill, Household utensils, Electronic components, Pip



Household Utensils



Gas Range



Elevator



Fence

Chemical compositions and physical properties

Designations		Chemical Composition (%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elongation (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20~100°C)	Thermal Conductivity W/m·°C (100°C)
-	445NF	≤0.015	20.0~23.0	≤0.5	-	Ti+Nb 10(C+N)~0.6	≥245	≥410	≥22	≤200	0.44	7.74	10.5	23

Characteristics and usages

446M

26Cr-2Mo-0.3(Ti,Nb)-LCN

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

Superior in corrosion resistance to 445 stainlee steel with higher Cr content.

Products available

Cold rolled coil

Applications

- Roof and exterior building materials in coastal and industrial areas

*e.g. : Roofs of ASEM Center and Incheon International Airport in korea



ASEM Center



Incheon International Airport

Chemical compositions and physical properties

Designations		Chemical Composition (%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elongation (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20~100°C)	Thermal Conductivity W/m·°C (100°C)
446M	446M	≤0.015	25~28.5	≤0.3	1.5~2.5	Ti, Nb ≥8(C+N)	≥270	≥430	≥25	≤210	0.50	7.75	11.0	18.84

Characteristics and usages

430M216Cr-0.3Nb-LCN

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

Improves moldability, corrosion resistance, and weldability by lowering C and N, adding Nb compared to 430 steel

Products available

Hot rolled coil, Cold rolled coil

Applications

For internal and external use of electronic devices, kitchen and office equipment, and house hold appliances



Electronic device interior/exterior materials

Homeware

Chemical compositions and physical properties

Designa- tions	Chemical Composition(%)							Mechanical Properties				Physical Properties			
	C	Si	Mn	Cr	Ni	N (ppm)	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga- tion (%)	Hard- ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
POSCO 430M2	≤0.03	≤0.75	≤1	16~17	≤0.6	≤1000	P 0~0.04 S 0~0.03 Nb 0.1~1	175~	360~	25~	~180				

Characteristics and usages

430RE16Cr-0.2Ti-LCN

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

Excellent moldability, weldability, and corrosion resistance by lowering C, N and adding Ti c ompared to 430 steel

Products available

Hot rolled coil, Cold rolled coil

Applications

- Available for applications requiring molding, corrosion resistance, and weldability compared to 430 steel (Ex: household appliances, etc.)



Dishwasher

Washing Machine

Chemical compositions and physical properties

Designa- tions	Chemical Composition(%)							Mechanical Properties				Physical Properties			
	C	Si	Mn	Cr	Ni	N (ppm)	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elonga- tion (%)	Hard- ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
POSCO 430RE	≤0.03	≤1	≤1	16~18	≤0.75	≤300	P 0~0.04 S 0~0.03 Ti 0.1~1	175~	360~	22~	~200				

Characteristics and usages

436J1L 18Cr-0.5Mo-0.3Ti-LCN

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

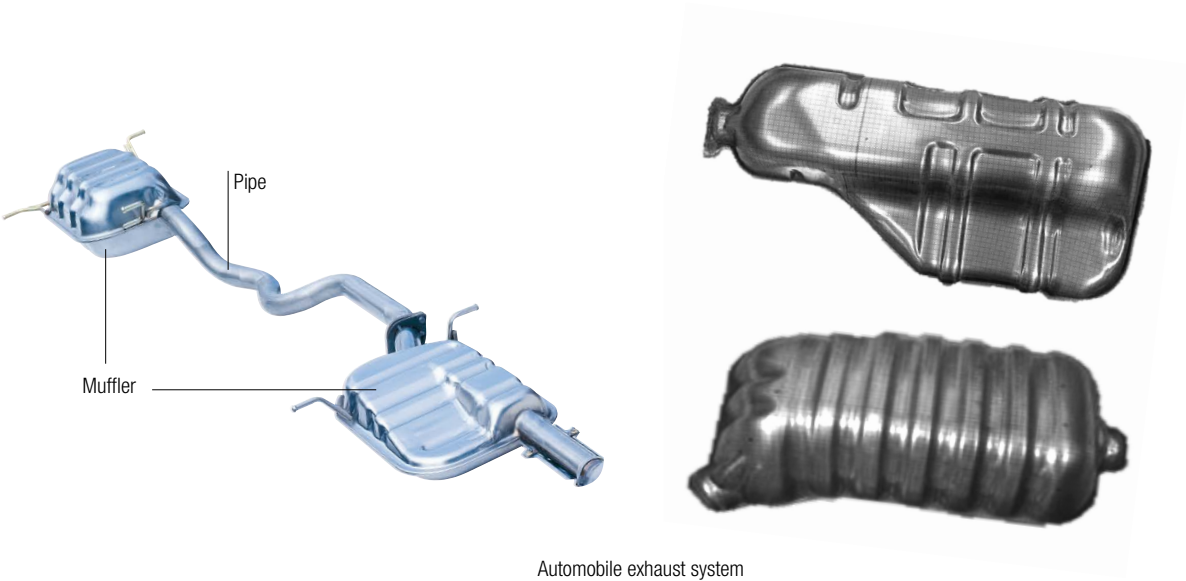
Steel type for Exhaust system Muffler that reduces Mo compared to 436 steel. (workability : 436L ≤ 436J1L, Corrosion Resistance : 436L > 436J1L)

Products available

Hot rolled coil, Cold rolled coil

Applications

Exhaust system Cold End Pipe and Muffler



Automobile exhaust system

Chemical compositions and physical properties

Designations	Chemical Composition(%)								Mechanical Properties				Physical Properties			
	C	Si	Mn	Cr	Ni	Mo	N (ppm)	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
KS(JIS) STS 436J1L (SUS 436J1L)	≤0.025	≤1	≤1	17~20	≤0.6	0.4~0.8	≤250	P 0~0.04 S 0~0.03 Nb 0~0.8 Ti 0~0.8	245~	410~	20~	~200	0.46	7.70	9.3	23.9

Characteristics and usages

470FC 30Cr-0.4V-Ti/Nb-LCN

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

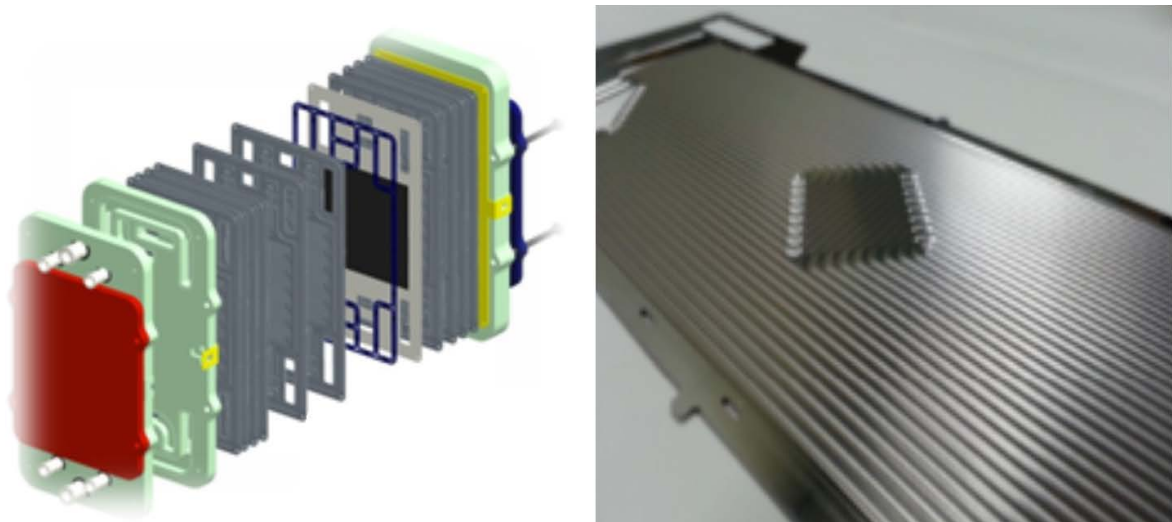
Steel with high corrosion resistance and low contact resistance in a strong acid environment.

Products available

Cold rolled coil

Applications

- Automotive Fuel Cell Separation Plate



Fuel Cell Stack & Bipolar Plate

Stamped POSCO 470FC

Chemical compositions and physical properties

Designations	Chemical Composition(%)							Mechanical Properties				Physical Properties			
	C	Si	Mn	Cr	Ni	N (ppm)	Others	Yield Strength (N/mm²)	Tensile Strength (N/mm²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
POSCO POSCO 470FC	≤0.012	≤0.2	≤0.3	29.5~30.5	≤0.3	≤180	P 0~0.03 S 0~0.003	250~	450~	20~	~250				

Characteristics and usages

41013Cr-0.04C

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

A representative type of Martensitic stainless steel. It has superior drawability and is hardened through heat treatment. (being magnetic)

Products available

Hot rolled coil, Cold rolled coil

Applications

- Knife blade • Machinery parts • Tableware cutlery (spoon, fork, knife, etc)



Cutlery

Kitchen knife

Kitchenware

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga- tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
410	410	≤0.15	11.5~13.5	-	-	-	≥205	≥440	≥20	≤210	0.46	7.70	9.9	24.9

Characteristics and usages

410B12Cr-0.4Ni

AUSTENITE
DUPLEX
FERRITE
MARTENSITE

Characteristics

Compared to 410 stainless steel, quenching hardness is improved by controlling the quantity of Mn and Ni.

Products available

Hot rolled coil

Applications

Products requiring abrasion resistance between Hv 300~390 in Quenching hardness : Disc brake of motorcycle



Disc brake

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga- tion (%)	Hard-ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
-	410B	≤0.15	11.5~13.5	≤0.6	-	-	≥205	≥440	≥20	≤210	0.46	7.75	9.9	24.9

Characteristics and usages

420N1	13Cr-0.1C-0.1N	AUSTENITE
420J2	13Cr-0.3C	DUPLEX
		FERRITE
		MARTENSITE

Characteristics

- 420N1 : Improved formability, corrosion resistance and strength / Abrasion resistance than 420J1(magnetism).
- Formability : minimize center segregation
 - Corrosion resistance : restrain the formation of chrome carbide
 - Strength / Abrasion resistance : precipitate of micro chrome nitride
- 420J2 : Larger quenching hardness compared to 420J1

Products available

- 420N1, 420J2 : Hot rolled coil
- 420J : Cold rolled coill

Applications

- High-quality table knives requiring corrosion and abrasion resistance
- Machinery parts requiring abrasion resistance



Kitchen scissors



Table knife



Kitchen knife

Chemical compositions and physical properties

Designations		Chemical Composition(%)					Mechanical Properties				Physical Properties			
KS (JIS)	POSCO	C	Cr	Ni	Mo	Others	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elonga- tion (%)	Hard- ness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient 10 ⁻⁶ /°C (20-100°C)	Thermal Conductivity W/m·°C (100°C)
-	420N1	0.170 0.18	12.0~ 14.0	-	-	N≤0.14	≥225	≥520	≥18	≤218	0.46	7.75	10.3	23.8
420J2	420J2	0.26~ 0.4	12.0~ 14.0	-	-	-	≥225	≥540	≥18	≤247	0.46	7.75	10.3	23.8

Ordering

Ordering

When you order POSCO stainless steel, an appropriate steel type must be selected in accordance with the purpose of use, design conditions, processing conditions and environment atmosphere. It is advised you indicate specifications.

Specified items	Items that require mutual agreements
• Designation standard (KS, JIS, DIN, ASTM, etc) • Steel type Code : KS (STS No.), JIS (SUS No.) etc • Surface Treatment : NO 1~4, BA, HL, Dull • Edge Finishing : Mill Edge, Slit Edge • Dimension : Thickness, Width, Length, Coil Inner Diameter • Weight, Weight per Package • Packaging • Surface Film, paper insertion • Usage, Conditions for use • Delivery date, Method and destination	• Dimension tolerance (apart from the standard tolerances) • Special Packaging Specification • Special Usage • Special Requirement of Manufacturing Conditions (Chemical Composition, Material Quality, External Appearance) • Special Surface Protective Film • Heat treatment, Pickling Conditions

POSCO s philosophy is to achieve customer satifaction.

Should you have any inquiry or complaint regarding our products, please contact the nearest POSCO office or access our Internet website at www.steel-n.com

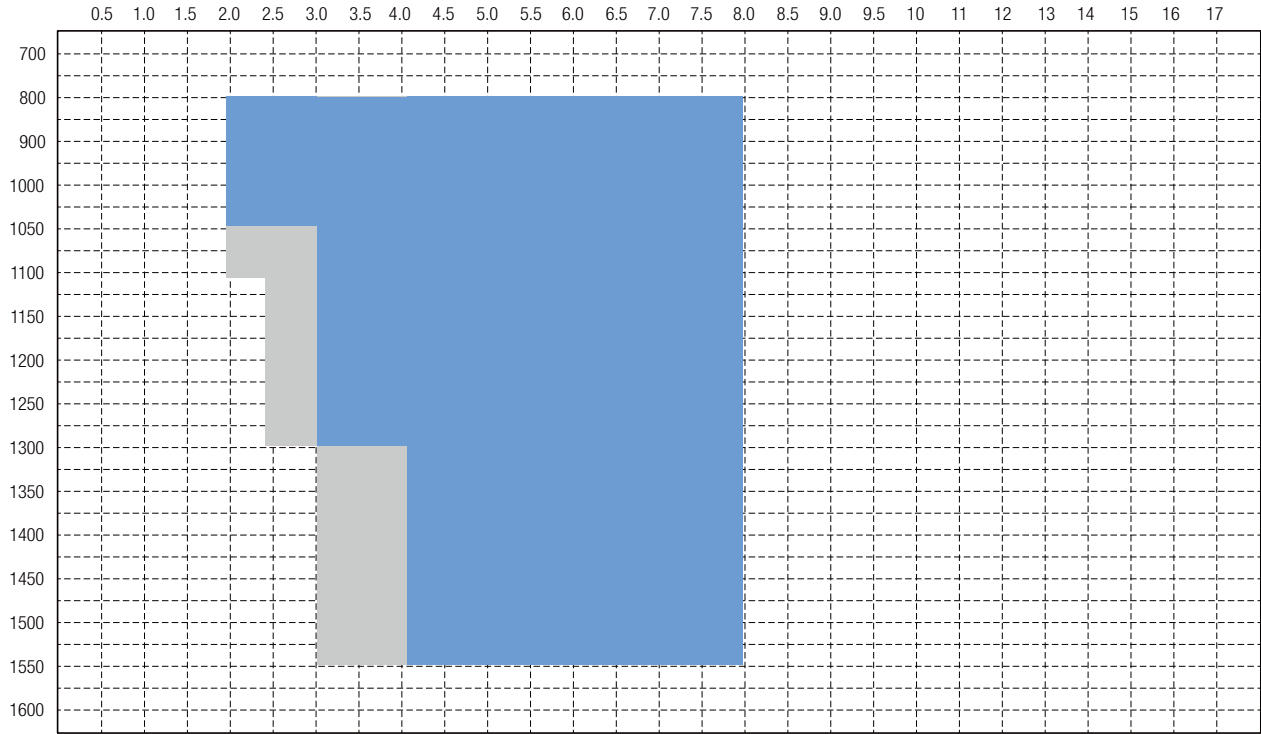


Available size _ STS Hot Rolled Coil

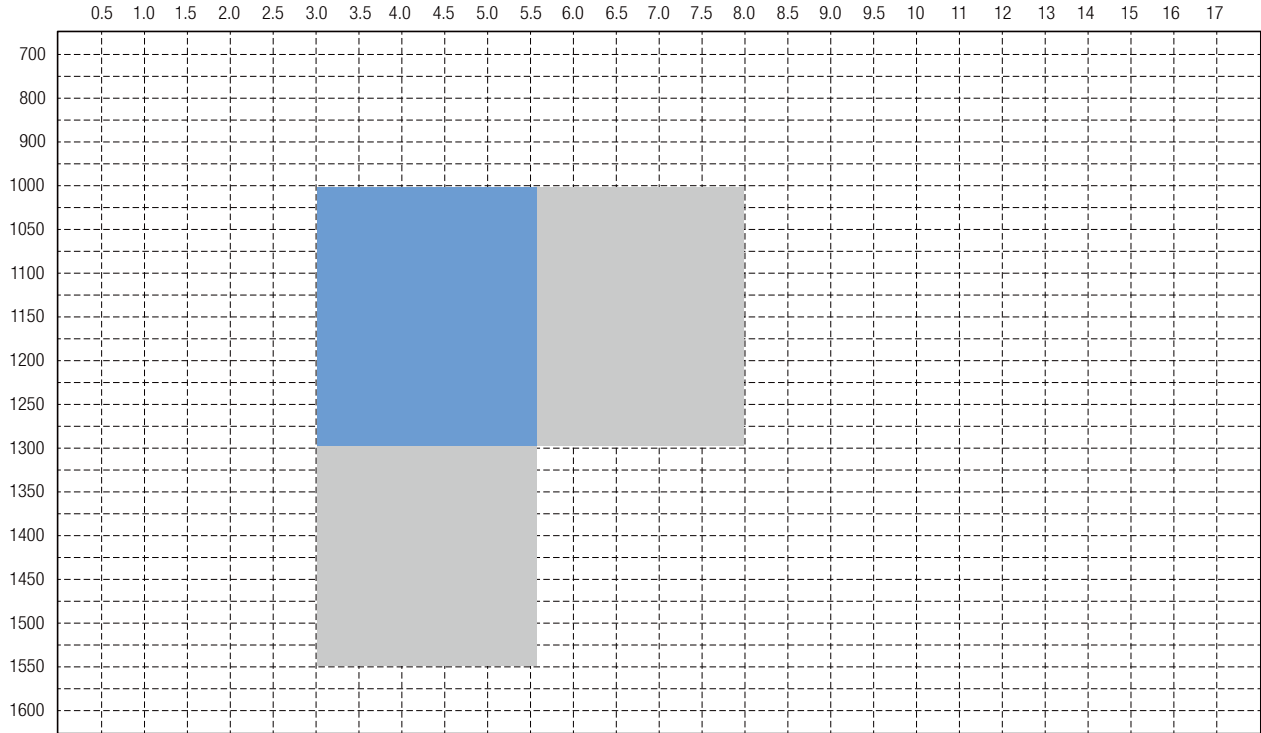
⚠ Order thickness of 8t or more can only be black coil, and prior consultation is required before ordering.

- Can be produced
- Require consultation

STS Hot Rolled Coil _ AUSTENITIC(304)



STS Hot Rolled Coil _ FERRITIC(430)

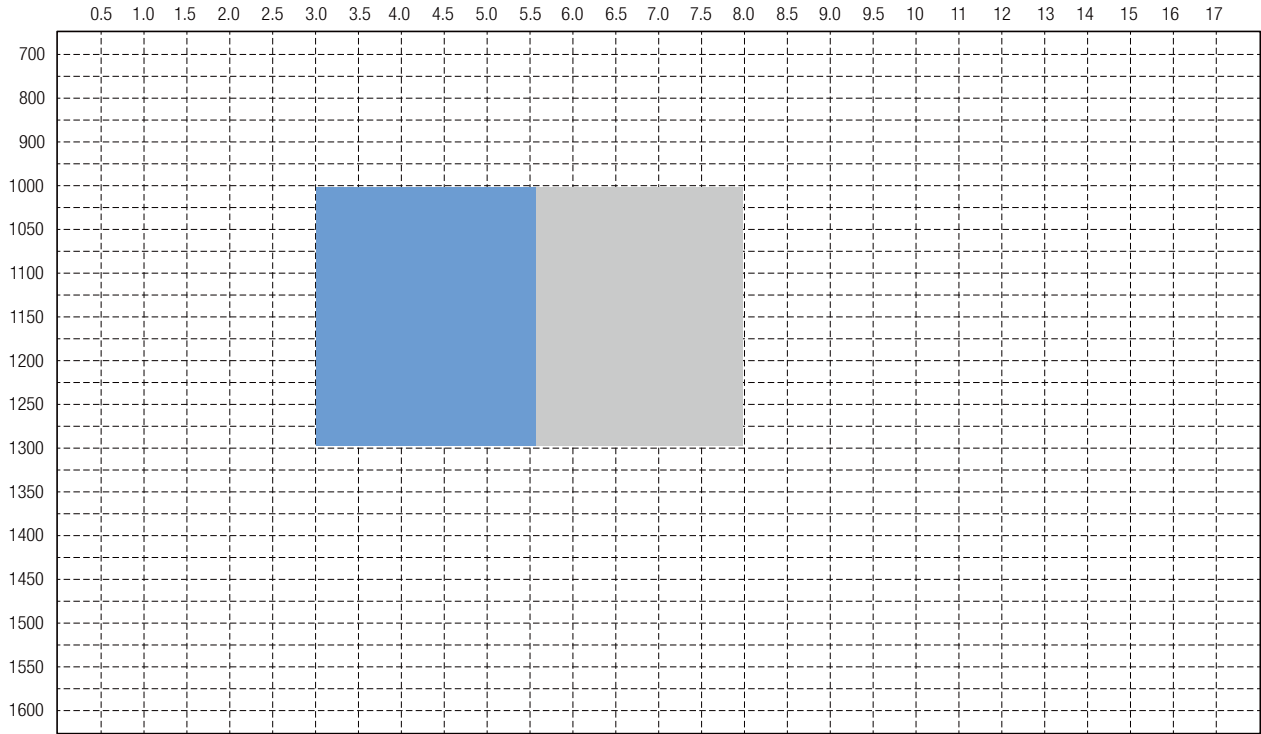


Available Size _ STS Hot Rolled Coil

⚠ Order thickness of 8t or more can only be black coil, and prior consultation is required before ordering.

- Can be produced
- Require consultation

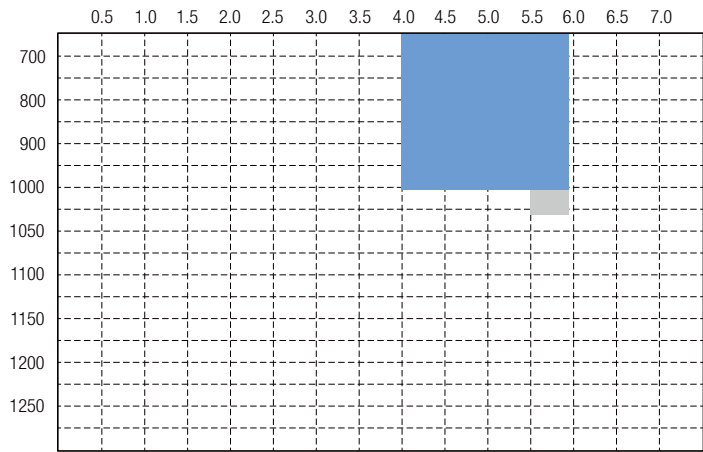
STS Hot Rolled Coil _ MARTENSITIC(410)



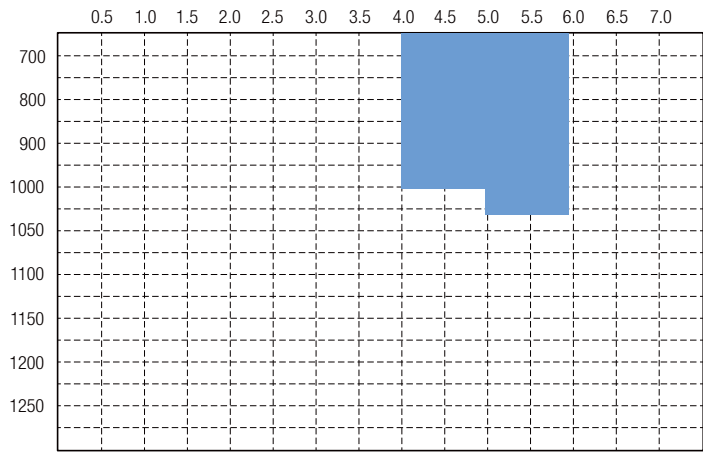
Available size _ STS Hot Rolled Coil



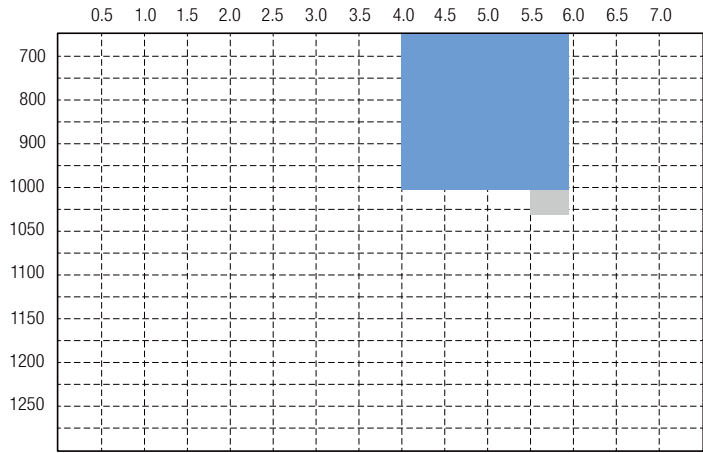
STS Hot Rolled Coil DUPLEX _ Lean Duplex(329LD)



Standard Duplex(329J3L)



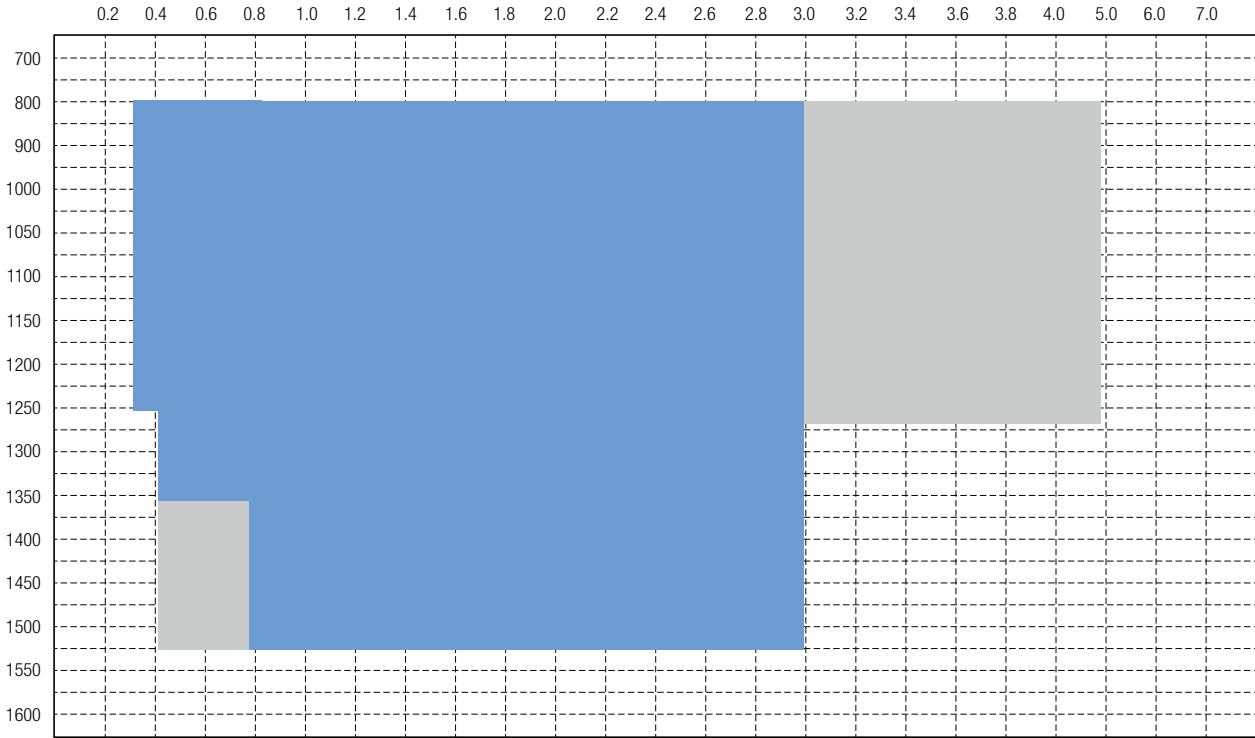
Super Duplex(329J4L)



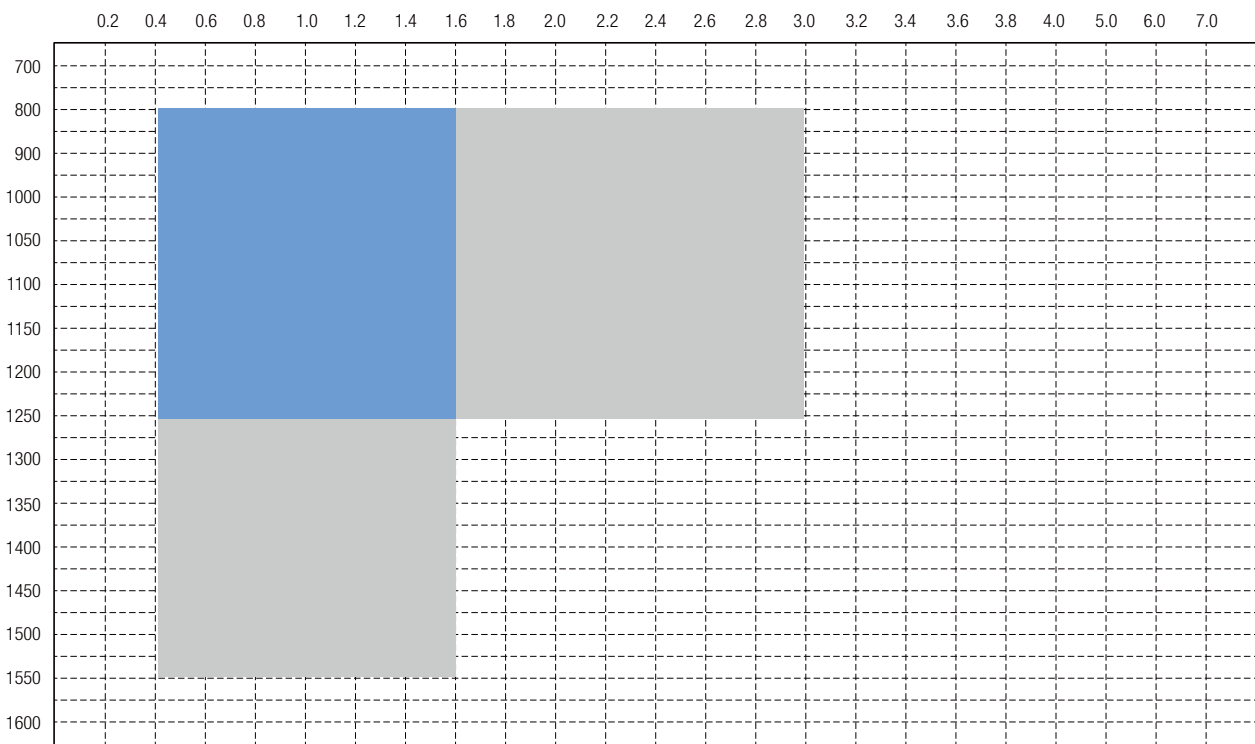
Available Size _ STS Cold Rolled Coil



STS Cold Rolled Coil _ AUSTENITIC(304 based on 2B surface)



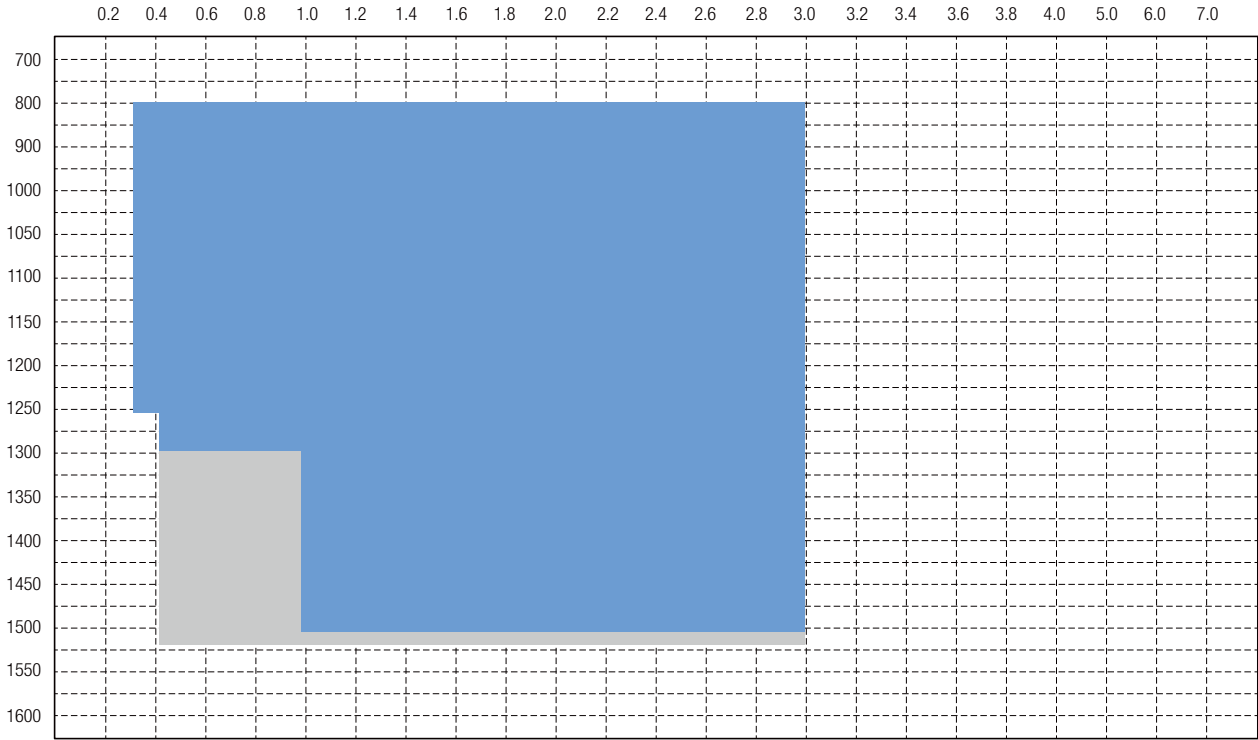
STS Cold Rolled Coil _ AUSTENITIC(304 based on BA surface)



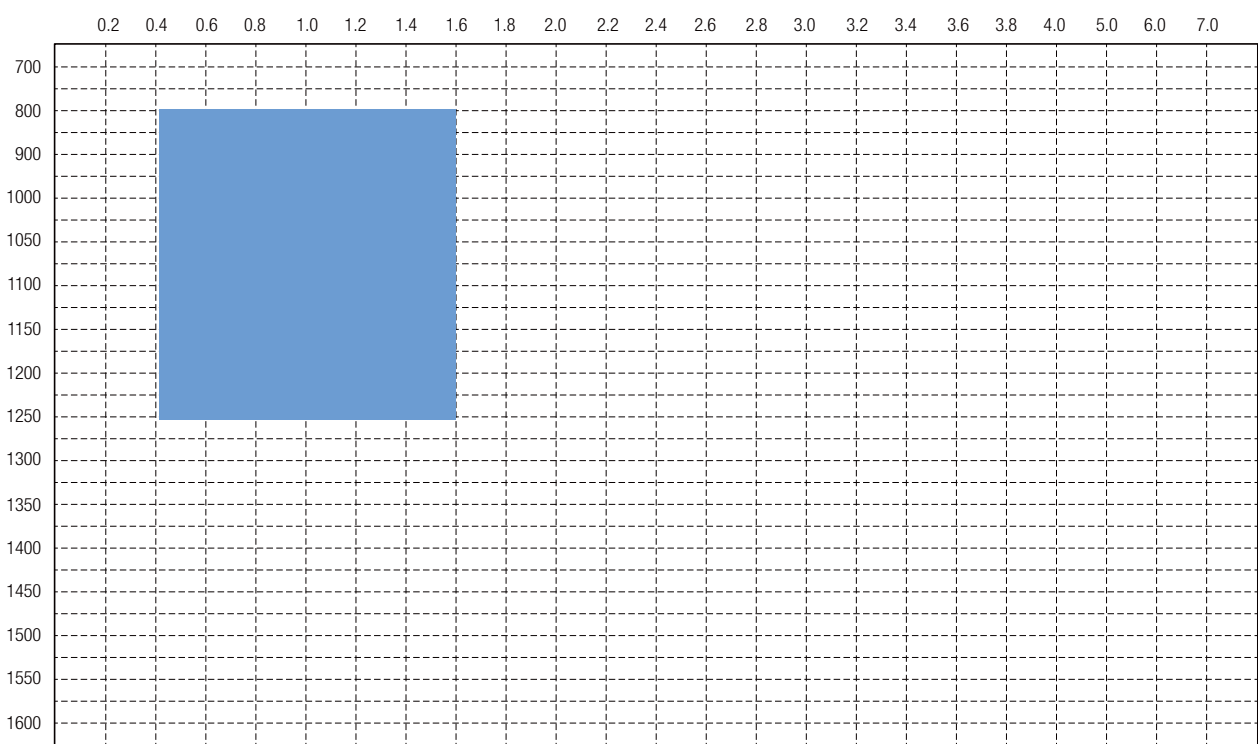
Available size _ STS Cold Rolled Coil



STS Cold Rolled Coil _ FERRITIC(430 based on 2B surface)



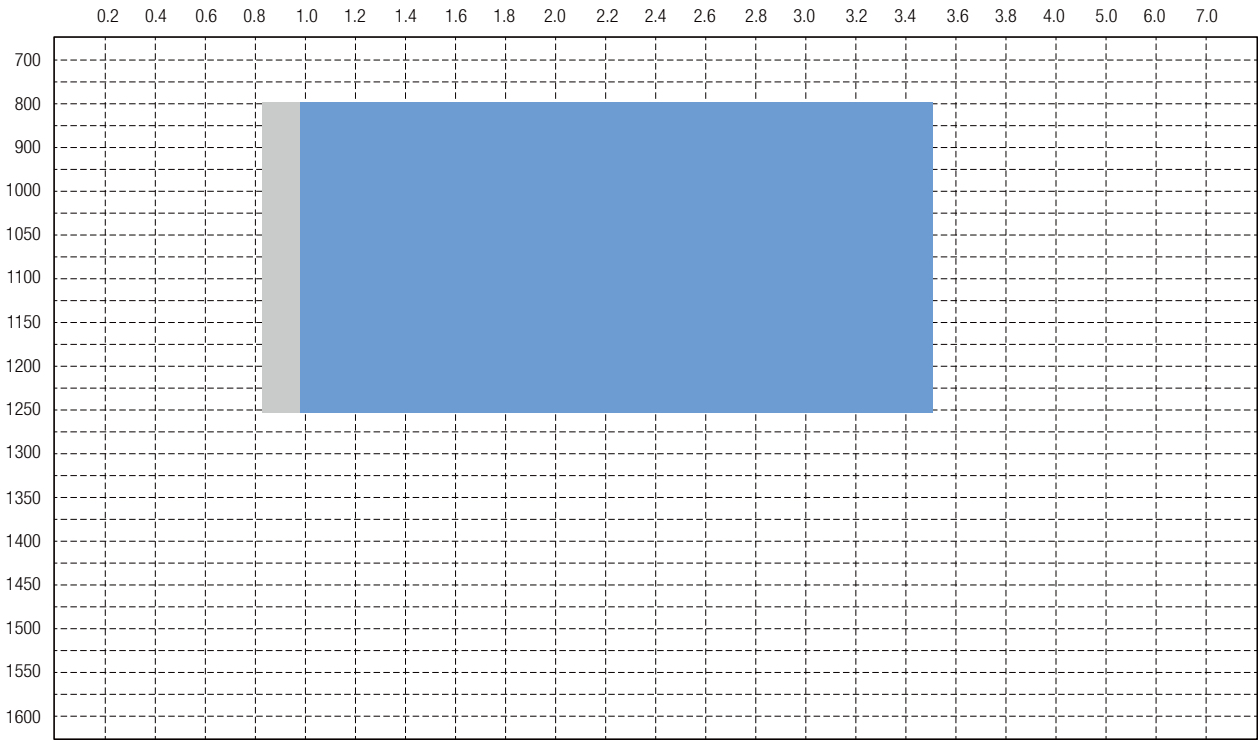
STS Cold Rolled Coil _ FERRITIC(430 based on BA surface)



Available Size _ STS Cold Rolled Coil



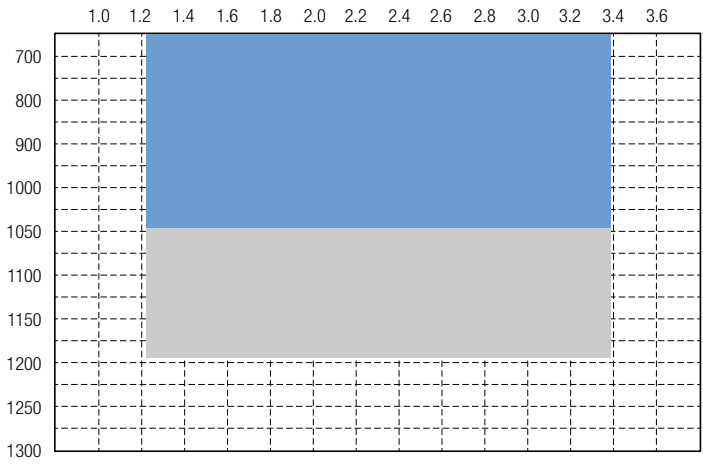
STS Cold Rolled Coil _ MARTENSITIC(410 based on Full Hard)



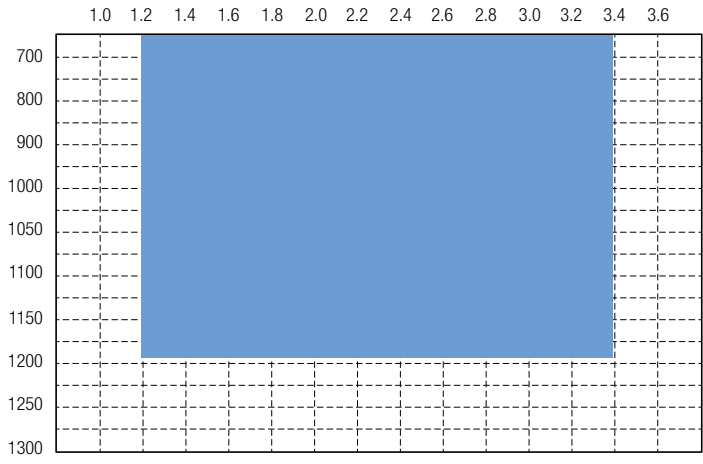
Available size _ STS Cold Rolled Coil



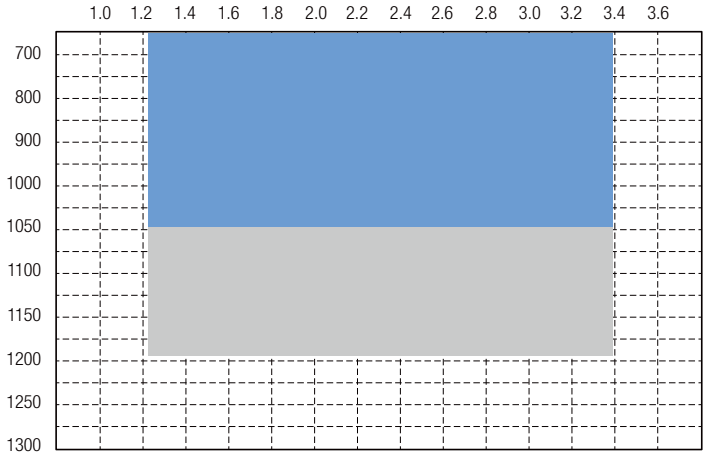
STS Cold Rolled Coil _ DUPLEX(329J3L)



Standard Duplex(329J3L)



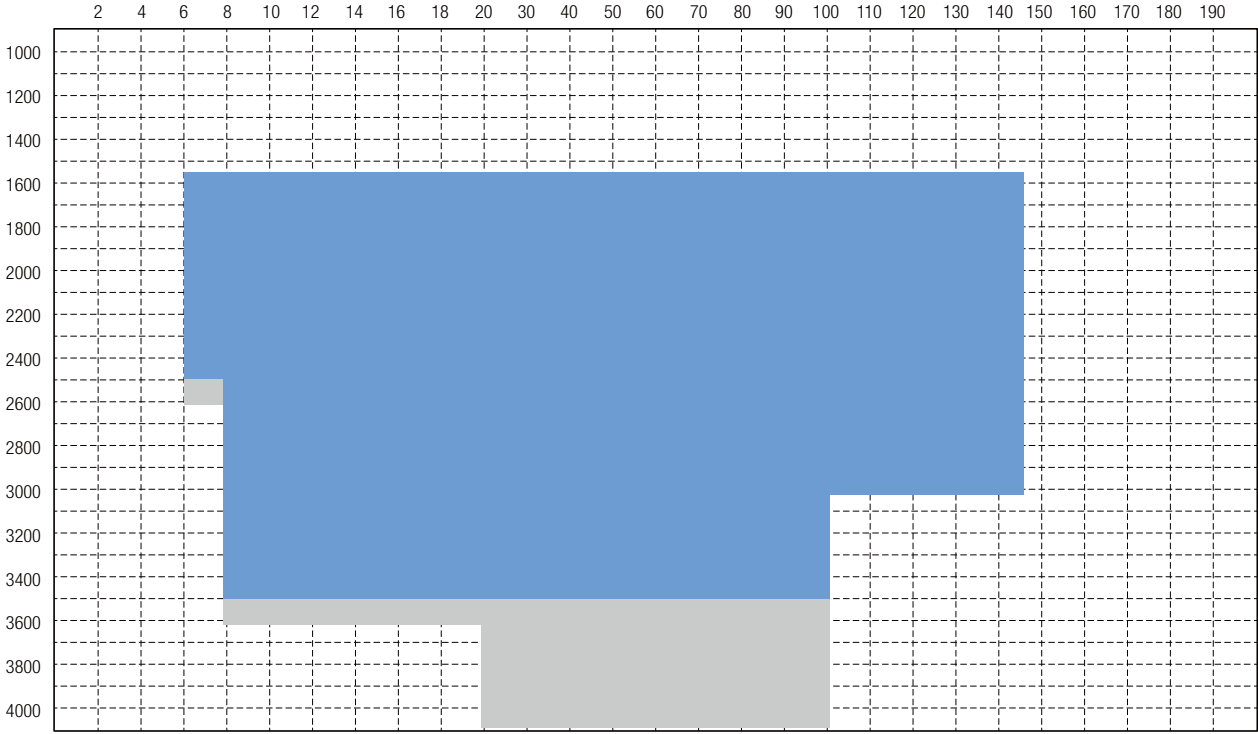
Super Duplex(329J4L)



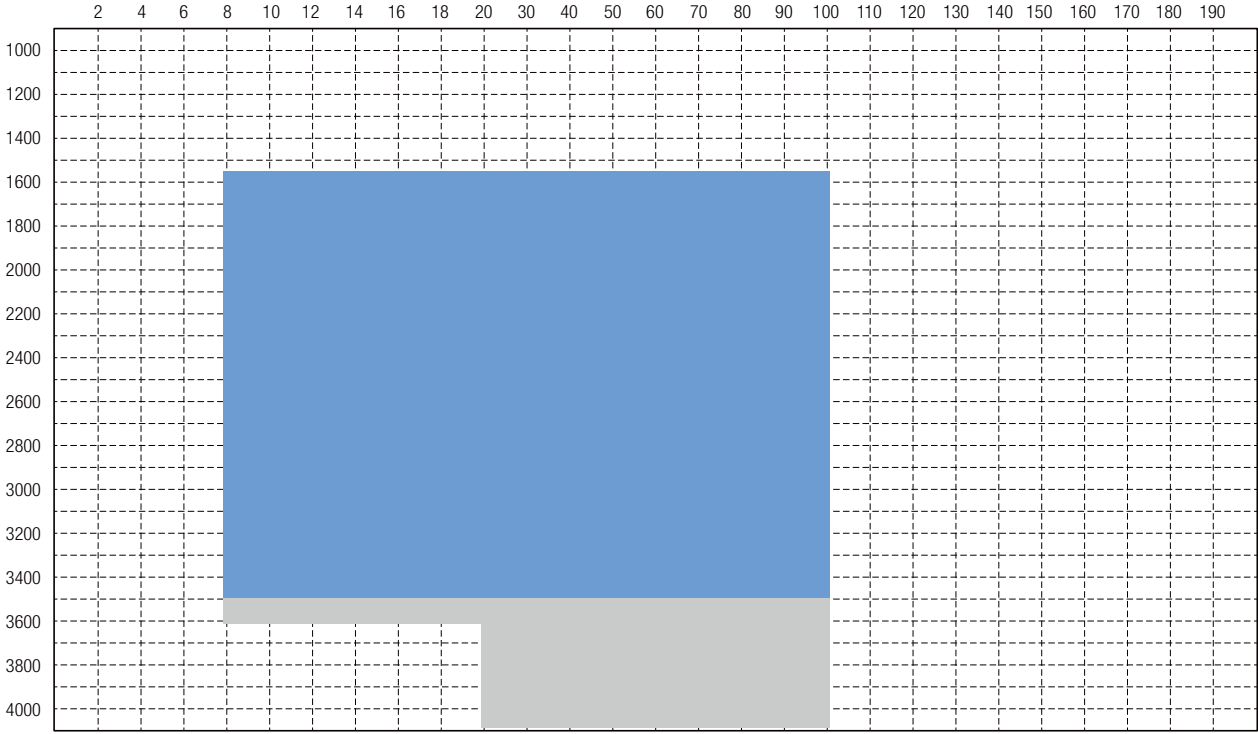
Available Size _ Plate



STS Plate _ AUSTENITIC 304(L), 321(H)



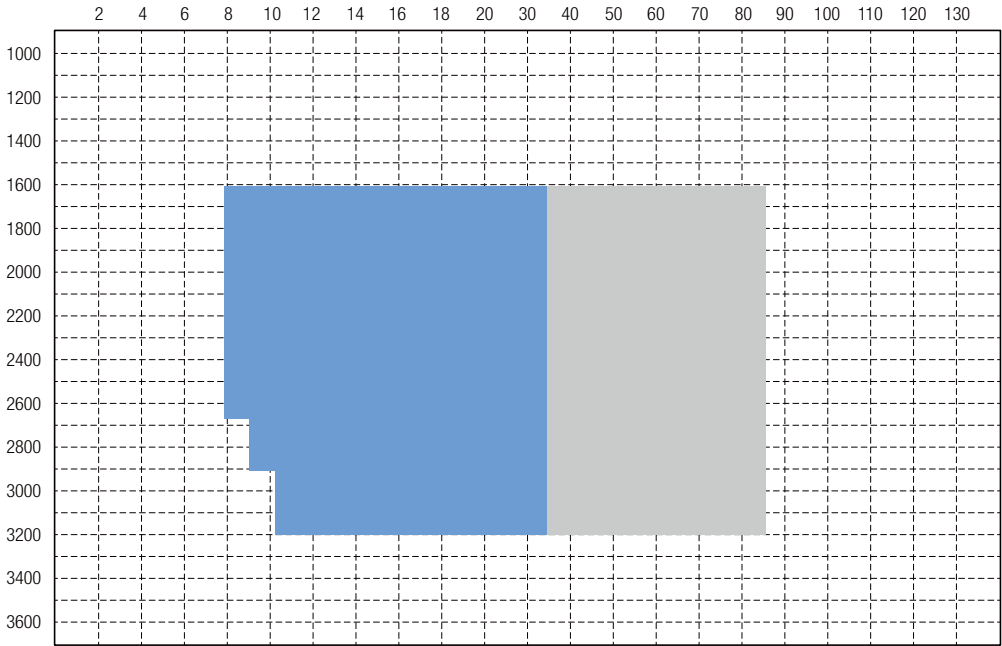
STS Plate _ AUSTENITIC 316L



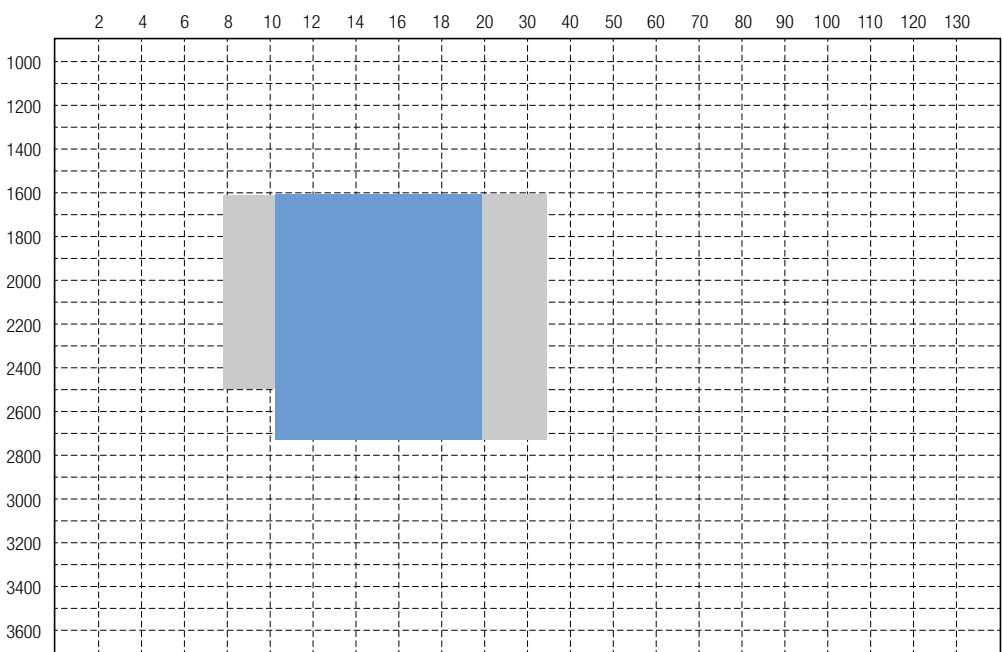
available size _ Plate



Lean Duplex(S32304), Standard Duplex(S31803, S32205)



Super Duplex(S32705)



Size Tolerances

Hot rolled coil

Thickness Tolerances

Unless specified, thickness tolerances are as given in Table 1. When specified, they should be as in Table 2. Thickness is measured at arbitrary point that is more than 15mm inward from the edge in case of slit edge, and 25 mm in case of mill edge. Measurement is not conducted on unstable parts of top and tail.

Table 1 (Unit : mm)

Thickness	Width	Thickness Tolerance		
		w < 1000	1000 ≤ w < 1250	1250 ≤ w < 1600
2.00 ≤ t < 2.50		±0.25	±0.30	-
2.50 ≤ t < 3.15		±0.30	±0.35	±0.40
3.15 ≤ t < 4.00		±0.35	±0.40	±0.45
4.00 ≤ t < 5.00		±0.40	±0.45	±0.50
5.00 ≤ t < 6.00		±0.50	±0.55	±0.60
6.00 ≤ t < 8.00		±0.60	±0.65	±0.70

Table 2 (Unit : mm)

Thickness	Width	Thickness Tolerance			
		w < 800	800 ≤ w < 1000	1000 ≤ w < 1250	1250 ≤ w < 1600
2.00 ≤ t < 2.50		±0.20	-	-	-
2.50 ≤ t < 3.15		±0.23	±0.25	±0.30	±0.35
3.15 ≤ t < 4.00		±0.26	±0.30	±0.35	±0.40
4.00 ≤ t < 5.00		±0.29	±0.38	±0.40	±0.45
5.00 ≤ t < 6.00		±0.32	±0.45	±0.45	±0.50
6.00 ≤ t < 8.00		-	±0.55	±0.60	±0.60

Width tolerances

Width tolerance shall be in accordance with Table 3.

Table3 (Unit : mm)

Edge	Thickness	Width	Width Tolerance	
			+30	-0
Slit Edge	t < 6.00		+10	-0
	6.00 ≤ t		+15	-0

Camber Tolerances (Max)

Camber is 5mm in an arbitrary length of 2000mm. (However, measurement is not taken on the top and tail of a coil.)

Size Tolerances

Cold rolled coil

Thickness Tolerances

Unless specified, tolerances for thickness are as given in Table 4. When specified, they should be as in Table 5. Thickness is measured at arbitrary point that is more than 15mm inward from the edge in case of slit edge, and 25mm in case of mill edge. Measurement is not conducted on top and tail of a coil.

Table 4

(Unit : mm)

Thickness	Width	Thickness tolerance	
		w < 1250	1250 ≤ w < 1600
0.30 ≤ t < 0.60		±0.05	±0.08
0.60 ≤ t < 0.80		±0.07	±0.09
0.80 ≤ t < 1.00		±0.09	±0.10
1.00 ≤ t < 1.25		±0.10	±0.12
1.25 ≤ t < 1.60		±0.12	±0.15
1.60 ≤ t < 2.00		±0.15	±0.17
2.00 ≤ t < 2.50		±0.17	±0.20
2.50 ≤ t < 3.00		±0.22	±0.25

Table 5

(Unit : mm)

Thickness	Width	Thickness tolerance					
		w < 160	160 ≤ w < 250	250 ≤ w < 400	400 ≤ w < 630	630 ≤ w < 1000	1000 ≤ w < 1250
0.10 ≤ t < 0.16		±0.015	±0.020	-	-	-	-
0.16 ≤ t < 0.25		±0.020	±0.025	±0.030	±0.030	-	-
0.25 ≤ t < 0.40		±0.025	±0.030	±0.035	±0.035	±0.038	±0.038
0.40 ≤ t < 0.60		±0.035	±0.040	±0.040	±0.040	±0.040	±0.040
0.60 ≤ t < 0.80		±0.040	±0.045	±0.045	±0.045	±0.05	±0.05
0.80 ≤ t < 1.00		±0.040	±0.05	±0.05	±0.05	±0.05	±0.06
1.00 ≤ t < 1.25		±0.05	±0.05	±0.05	±0.06	±0.06	±0.07
1.25 ≤ t < 1.60		±0.05	±0.06	±0.06	±0.06	±0.07	±0.07
1.60 ≤ t < 2.00		±0.06	±0.07	±0.08	±0.08	±0.09	±0.10
2.00 ≤ t < 2.50		±0.07	±0.08	±0.08	±0.09	±0.10	±0.11
2.50 ≤ t < 3.00		±0.08	±0.09	±0.09	±0.10	±0.11	±0.12

Size Tolerances

Cold rolled coil

Width tolerances

Unless specified, tolerances for width are as given in Table 6. When specified, they should be as given in Table 8. For sheet, they are as shown in Table 7.

Table 6

(Unit : mm)

Edge	Width	Width Tolerance			
		w < 400	400 ≤ w < 630	630 ≤ w < 1000	1000 ≤ w < 1524
Mill Edge		+10	+20	+25	+30
		-0	-0	-0	-0
Slit Edge		+3	+3	+3	+3
		-0	-0	-0	-0

Table 7

(Unit : mm)

Length	Width Tolerance
ℓ ≤ 3500	+5 -0
3500 < ℓ ≤ 6000	+15 -0
6000 < ℓ	+20 -0

Table 8

(Unit : mm)

Thickness	Width	Width Tolerance				
		w < 160	160 ≤ w < 250	250 ≤ w < 400	400 ≤ w < 630	630 ≤ w < 1000
t < 0.60		+10	+10	+20	+25	+30
0.60 ≤ t < 1.00		-0	-0	-0	-0	-0
1.00 ≤ t < 1.60		+3	+3	+3	+3	+3
1.60 ≤ t < 2.50		-0	-0	-0	-0	-0
2.50 ≤ t < 3.00		-0	-0	-0	-0	-0

Length Tolerances

For sheet, Table 9 should be referred to.

Table 9

(Unit : mm)

Length	Length Tolerance
ℓ ≤ 3500	+5 -0
3500 < ℓ ≤ 6000	+15 -0
6000 < ℓ	+20 -0

Size Tolerances

Cold rolled coil

Maximum flatness tolerance for steel sheet

Maximum tolerances for flatness for steel sheet are given in Table 10. Stretcher flatness correction is conducted upon specific notification. Maximum flatness tolerance in 1/4H and 1/2H of STS 301(L) is in accordance with Table 11.

Table 10 (Unit : mm)

Width	Length	Maximum flatness tolerance for steel sheet	
		Stretcher not correct	Stretcher correct
w ≤ 1000	ℓ ≤ 2000	15	3
	2000 < ℓ	20	6
1000 < w	ℓ ≤ 2000	20	6
	2000 < ℓ	20	6

Table 11 (Unit : mm)

Width	Length	Maximum flatness tolerance for STS 301	
		1/4H	1/2H
600 ≤ w < 1000	ℓ < 0.40	13	19
	0.40 ≤ ℓ < 0.80	16	22
	0.80 ≤ ℓ	19	22
1000 ≤ w < 1219	ℓ < 0.40	16	26
	0.40 ≤ ℓ < 0.80	19	29
	0.80 ≤ ℓ	26	29

Maximum flatness tolerances for coil and skelp

Maximum tolerances for flatness for coil and skelp are given in Table 12. However, measurement is not taken on top and tail of a coil.

Table 12 (Unit : mm)

Width	Maximum Flatness
40 ≤ w < 80	8 in an arbitrary length of 2000
80 ≤ w < 630	4 in an arbitrary length of 2000
630 ≤ w	2 in an arbitrary length of 2000

Size Tolerances

Plate

Thickness tolerances

Table 13 should be referred to for ordering KS and JS, and Table 14 for ordering ASTM. Thickness is measured at an arbitrary point that is more than 15mm inward from the edge in case of slit edge, and 25mm in case of mill edge. Measurement is not taken on top and tail.

Table 13 (Unit : mm)

Thickness \ Width	Thickness tolerance				
	1250 ≤ w < 1600	1600 ≤ w < 2000	2000 ≤ w < 2500	2500 ≤ w < 3150	3150 ≤ w < 3230
9.0 ≤ t < 10.0	±0.65	±0.80	±1.2	±1.5	±1.6
10.0 ≤ t < 16.0	±0.70	±0.85	±1.2	±1.5	±1.6
16.0 ≤ t < 25.0	±0.80	±0.95	±1.3	±1.5	±1.6
25.0 ≤ t < 40.0	±0.90	±1.1	1.3	±1.5	±1.6
40.0 ≤ t < 63.0	±1.2	±1.2	±1.4	±1.5	±1.6
63.0 ≤ t < 80.0	±1.3	±1.3	±1.5	±1.6	±1.7

Table 14 (Unit : in, [] mm)

Thickness \ Width	Thickness tolerance		
	84 [2134] ≤ w	84 [2134] < w ≤ 120 [3048]	120 [3048] < w ≤ 127.2 [3230]
0.35 [9] < t ≤ 0.38 [9.52]	0.045 [1.14]	0.050 [1.27]	-
0.38 [9.52] < t ≤ 0.75 [19.05]	0.055 [1.40]	0.060 [1.52]	0.075 [1.90]
0.75 [19.05] < t ≤ 1 [25.40]	0.060 [1.52]	0.065 [1.65]	0.085 [2.16]
1 [25.40] < t ≤ 2 [50.80]	0.070 [1.78]	0.075 [1.90]	0.095 [2.41]
2 [50.80] < t ≤ 3 [76.20]	0.125 [3.18]	0.150 [3.81]	0.175 [4.44]
3 [76.20] < t ≤ 3.15 [80]	0.175 [4.44]	0.210 [5.33]	0.245 [6.22]

Minimum tolerance : -0.25mm

CR Surface Finishing

	Processing Method and application	Surface status
No.1	Hot rolled product that has undergone both annealing and pickling process. Used for rerolling material, chemical plant, industrial tank, etc.	
No.2D	A non-glossy cold rolled product that has undergone both annealing and pickling process. Used for petrochemical plant, automobile parts, building materials, pipe, etc.	
No.2B	Skinpassed products of No.2D. Compared to No.2D, it attains a brighter and flatter finish. It is the standard surface with improved mechanical properties. Applicable for almost all uses.	
No.3	Polished product with 100-120 mesh abraser. Variety of uses including building exterior and interior, various kinds of electronic products, kitchenware that require an attractive glossy finish.	
No.4	Polished product with 150-180 mesh abraser. It has an attractive silvery-white surface, which is finer than No.3. Used for bathtubs, building exterior and interior, food industry installations, etc.	
No.8	A slight abrasive residue is left on the surface by rotating the buffer with abrasive materials above 400 Mesh. It is used for interior and exterior materials, reflectors, small mirrors, and furniture decorations.	
HL	It is a product with continuous striped pattern acquired by polishing. Most widely used for building exterior and interior. It is also used for sash, doors, panel of building.	
BA	After cold rolling, the coil is annealed in a protective gas that prevents oxidation of the surface and skinpassed. BA product is highly reflective. Also it is used for home appliances, small-sized mirror, kitchenware, building materials and others that require highly reflective properties.	
DULL	Dull surface is matt finish produced by grinding with a fine rugged roll. Widely used for exterior and interior of train and building that require reduced light reflection.	
EMBOSS	The EMBOSS surface is a transcription of a Linen-shaped roll onto the surface during cold rolling. It is used inside and outside of architecture, for high-end sinks, etc.	

Packaging & Labeling

Packaging

Classification	Hot rolled	Cold rolled		
		Coil	Skelp	Sheet
Thickness (mm)	2.5 ~ 8.0	0.25 ~ 3.0	0.25 ~ 3.0	0.25 ~ 3.0
Width (mm)	800-1600	800-1580	40-800	500-1580
Unit weight (M/T)	30 max.	26 max.	15 max.	6 max.
Inner diameter (mm)	610	508, 610	508, 610	-
Outer diameter (mm)	2200	2100	2100	-
Height (mm)	-	-	-	900 max.
Length (mm)	-	-	-	1200-9000
Packaging	Wooden packaging Paper packaging	Wooden packaging Paper packaging	Wooden packaging Paper packaging	Wooden packaging Paper packaging

Label

STAINLESS STEEL HR COIL

SHR

CUSTOMER
POS-THAI STEEL SERVICE CENTER

SPEC
JIS-G4304-SUS430

SIZE
3.0X1219XC

PROD. NO.
QAH0262

FINAL DESTINATION
MATAPHUT

CONT. NO.
0002595287010

LOT NO.
2595287

EDGE FINSH.
S NO.1

NET WT.
13484 Kg

29727 Lbs

G/D GRADE.
N 1

GR. WT.
13610 Kg

QTY?

DATE
2006.08.29

HEAT. NO.
SD62492

ECOM1

INSPE.
S.W.HWANG

82354-220-8549

junyub@posco.co.kr

posco

Pohang Works

Made in Korea



STAINLESS STEEL CR COIL

SCR

SPEC.
STS430

SIZE
0.5X1000XC

PROD. NO.
QAH0914

F INSH.
NO.4

NET WT.
14470 Kg

GRADE.
1

GR. WT.
14660 Kg

DATE
2006.09.26

HEAT. NO.
SD64209

DCOS2

INSPE.
G.S.SHIN

82354-220-8542

yekwon@posco.co.kr

posco

Pohang Works

Made in Korea



Packaging

Hot rolled



Paper packaging of hot rolled coil for domestic users



Paper packaging of hot rolled coil for domestic users



Paper packaging of hot rolled coil for export customers

Cold rolled



Waterproof packaging of cold rolled for domestic users



Waterproof packaging of cold rolled



Paper packaging of cold rolled for export customers

Handling

The selection of steel

Stainless steel type should be selected according to the application environment and purpose so as to keep fine appearance and extend the life time.

Steel	Environment				Pastoral area				Urban area				Industrial area				Coastal area			
	I	L	M	H	I	L	M	H	I	L	M	H	I	L	M	H	I	L	M	H
High Corrosion Resistance STS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
STS 316	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
STS 304	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
STS 430	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

- * 범례

 - I (Indoor Environment)
 - L (Low Grade Environment)
 - M (Medium Grade Environment)
 - H (High Grade Environment)
- Excessive employment
 - Suitable
 - ◆ Available given frequent cleaning
 - Unsuitable

Storing and Transportation

Stainless steel has good corrosion resistance due to the oxidized layer on the surface. Therefore, careful attention should be paid to maintain the oxidized layer in good condition.

Storing

It is important to store stainless steel away from moisture, dust, grease and lubricant in order to protect its surface from rust and lowered corrosion resistance when welding. When moisture penetrates between stainless steel and protective film, the corrosion develops faster than it does without protective film. It is strongly recommended to store stainless steel in a clean, dry and well ventilated place preferably in the original package with an additional cover. The protective film should not be directly exposed to sunlight, and the film should be inspected regularly. If the film shows signs of deterioration (film lifespan is approx. 3 months), it should be replaced immediately. When packaging materials including insert paper get wet, they should be immediately removed to prevent surface corrosion.

Transportation

Stainless steel from scratch on the surface, rubber and timber supporter should be used during the transportation. Purposed transportation equipment should be used. To protect stainless steel from fingerprint, carrier should use gloves.

Handling

Processing & Construction

Cutting & Pressing

For punching and shearing, more pressure is required since stainless steel has higher strength than carbon steel. Dice and blade should be precisely set to prevent burr and work hardening. Plasma or laser cutting is recommended. When gas or Arc cutting is unavoidable, however, grinding and/or heat treatment should be performed on the area affected.

Bending

The steel under 2mm in thickness can be bent by 180 close-processing-method. However, it is desirable for thin steel to be bent with the same inner radius as the steel thickness in order to reduce cracking of bent area. If thick steel (2mm and over) is bent in rolling direction, the curvature radius twice the steel thickness should be applied.

Drawing

In deep drawing, heat resistant and high pressure resistant lubricant should be used to protect the surface from scratching /friction. After the drawing, the lubricant on the surface should be cleaned clearly.

Welding

Before welding, rust, oil, moisture and paint should be completely removed and an appropriated welding rod should be selected. In tack welding, pitch should be shorter than carbon steel and slag should be removed by stainless steel brush. After welding, grinding and washing processes are required to avoid local corrosion and/or decrease of strength.

Construction

- As forwarded, stainless steel is protected from scratch and contamination by the attached protective film. However, the problems of remaining adhesive liquid and degradation as time passes may occur. Therefore, after constructing the stainless steel, protective film should be removed and the surface should be cleaned.
- It is desirable to use purposed tool for stainless steel. However, if general tool is used, it should be cleaned to remove metal dust. Cleaning chemicals for tile and stone have strong corrosiveness. So if they contact stainless steel, it should be cleaned immediately.
- At construction site, stainless steel should not be exposed to cements, dust, etc. After construction, it should be cleaned with neutral detergent. The stainless steel with chemical coloring, etching or coating is susceptible to discoloration and scratch, and the recovery is not easy. Therefore, the users should pay attention to technical notes mentioned above.

Handling

Surface washing methods

To reserve the original condition of cleanliness and refinement of stainless steel, periodical washing is required. During washing, to protect stainless steel from scratch, decolorizer, compound and metal scrubbing brush should not be used. After washing, detergent should be rinsed out with clean water.

Washing frequency by environment

Environment		Rural area	Urban, industrial, costal area	
Part	Structure		Normal environment	Corrosive environment (High temperature and humidity, air pollution)
Exposed to rainwater	Place where sediment/contamination not remained	1~2 per year	2~3 per year	3~4 per year
	Place where sediment/contamination remained	2~3 per year	3~4 per year	4~5 per year
Not exposed to rainwater	Place where sediment/contamination not remained	1~2 per year	3~4 per year	4~5 per year
	Place where sediment/contamination remained	2~3 per year	4~5 per year	5~6 per year

Washing methods by surface condition

Surface condition	Washing method
Dust, filthy to be removed easily	Wash in warm water with soap or moderate detergent
Label, protective film	Wash in warm water with soap, moderate detergent product and organic solvent for adhesive
Grease, fat, oil	Clean with soft paper or fabric, and then use neutral detergent or ammonia
Decolorizer, lands of acid attached	Wash in water, and then wash with ammonia or sodium bicarbonate in warm water
Carbonized organic material	Wash in hot water of neutral detergent or ammonia, then use detergent containing fine compound
Finger print	Use soft fabric with alcohol, benzene or ether, then wash in water
Rainbow Film	Wash in warm water with neutral detergent
Faded area by welding heat	Wash with 10% Nitric acid or hydrofluoric acid, then wash with ammonia or sodium bicarbonate water
Rust by contaminant	Use oxalic acid, sulfuric acid, nitric acid of 10% or detergent containing compound

STAINLESS STEEL

Copyright © 2022 by POSCO
All rights reserved

Contact Us

POSCO Headquarters
Global Quality & Service Management Office
6261, Donghaean-ro, Nam-gu, Pohang-si,
Gyeongsangbuk-do, 38759 Republic of Korea
TEL 82-54-220-0114

Headquarters

6261, Donghaean-ro, Nam-gu, Pohang-si,
Gyeongsangbuk-do, 38759 Republic of Korea
TEL 82-54-220-0114
FAX 82-54-220-6000

Seoul Office

POSCO Center, 440, Teheran-ro,
Gangnam-gu, Seoul, 06194 Republic of Korea
TEL 82-2-3457-0114
FAX 82-2-3457-6000

Pohang Works

6262, Donghaean-ro, Nam-gu, Pohang-si,
Gyeongsangbuk-do, 37877 Republic of Korea
TEL 82-54-220-0114
FAX 82-54-220-6000

Gwangyang Works

20-26, Pokposarang-gil, Gwangyang-si,
Jeollanam-do, 57807 Republic of Korea
TEL 82-61-790-0114
FAX 82-61-790-7000



www.posco.com

www.steel-n.com