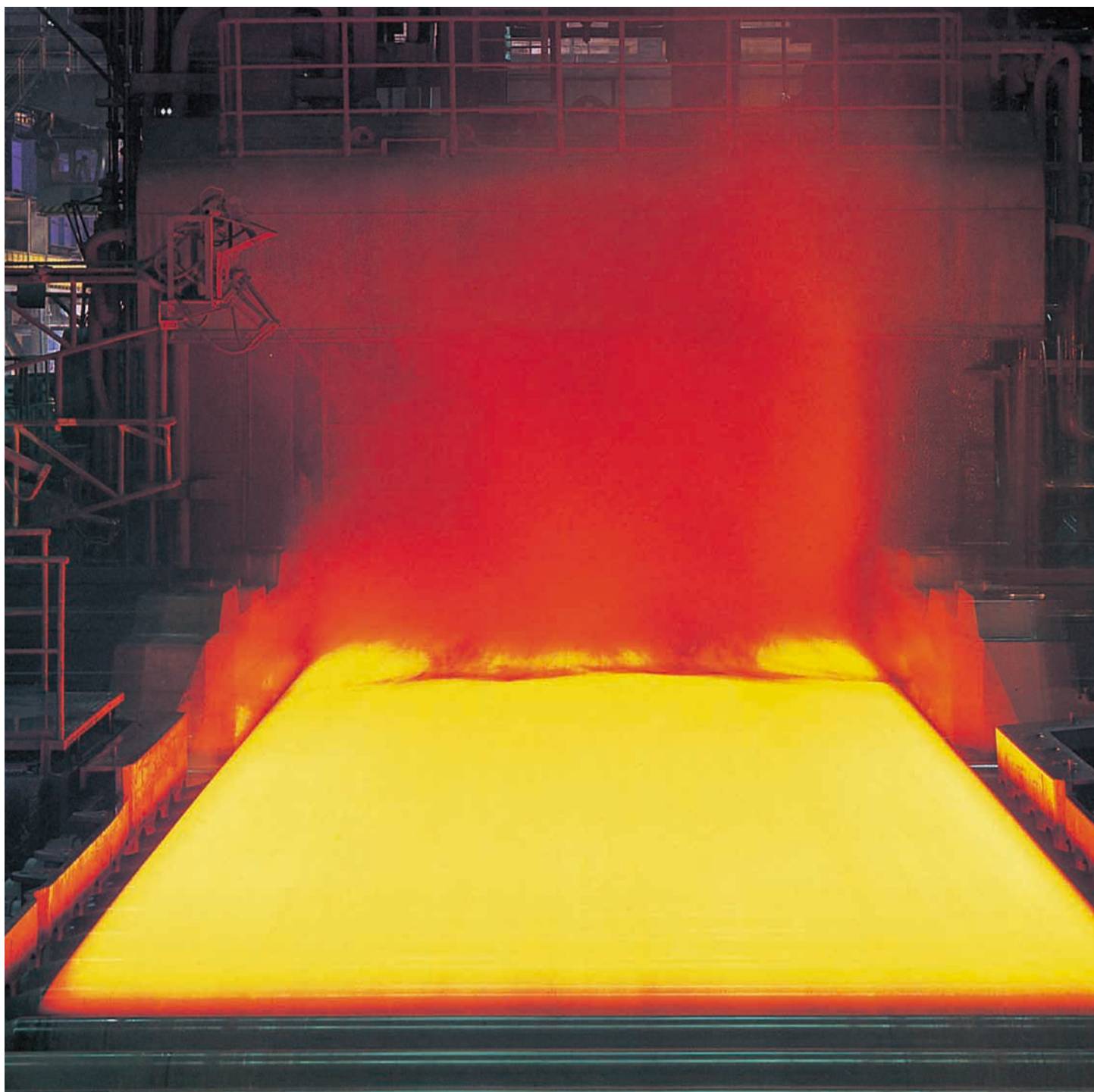




JFE

STEEL PLATE



JFE Steel Corporation

JFE Steel Corp.

has exerted the utmost effort to supply high-quality steel plates in response to customer's requirements throughout a history of more than 100 years. JFE

Steel is continuously improving its production equipment, expanding its product lineup, and intensifying quality control.

JFE Steel has 3 world-leading plate mills in East Japan Works (Keihin), West Japan Works (Kurashiki), and West Japan Works (Fukuyama). Manufacturing various kinds of steel plate products with the maximum width of 5,350 mm (one of the largest-in-the-world), and the maximum thickness of 360 mm, JFE Steel has responded to the requirements of both domestic and overseas customers.

State-of-the-art 4-high plate rolling mills were followed by the installation of a series of new facilities such as a modern heat-treatment facility, a ladle-refining station, and an online accelerated cooling system. These investments have permitted JFE Steel to maintain the world's highest technological level in steel plate production.

Being the first in Japan to adopt a computer-controlled plate production system consistently from order entry to shipment, JFE Steel has gained high reliance of the customer by controlling all plate manufacturing processes completely.

With the expansion of product types and grades, a wide variety of steel plates are now being produced and marketed in addition to ordinary carbon steel plates. These include high-tensile strength steel plates with a tensile strength up to 980 N/mm², steel plates for low temperature service, steel plates for boilers and pressure vessels, high atmospheric corrosion resistant steel plates, abrasion resistant steel plates, stainless steel plates and various types of clad steel plates.

JFE Steel's high-quality steel plates are always available to meet the customers' needs.





East Japan Works (Keihin)



West Japan Works (Kurashiki)



West Japan Works (Fukuyama)

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JFE'S STEEL PLATES

1 The world's largest class steel plates are available.

Max. thickness 360 mm, Max. length 27,000 mm, Max width 5,350 mm, Max. mass 70 tons.

2 High quality products with a wide range of types and grades are available.

JFE's steel plates are supported by world leading technologies and extensive experience. In addition to producing plates specified by domestic and overseas industrial standards, JFE Steel produces a wide variety of unique steel plates.

These include high-tensile strength steel plates, steel plates for low temperature service, atmospheric corrosion resistant steel plates, abrasion resistant steel plates, corrosion resistant steel plates in various corrosive environments, stainless steel plates and clad steel plates with various cladding materials.

3 State-of-the-art controlled rolling and on-line accelerated cooling technology

JFE Steel has adopted powerful rolling mills for controlled rolling and highly efficient on-line accelerated cooling equipment, and developed world leading TMCP technologies.

JFE Steel produces and supplies sophisticated high strength steel plates with high toughness and good weldability through TMCP technology. These products are widely applied in various fields focusing on ships, bridges and building.

4 The surface appearance is excellent.

Slabs are thoroughly cleaned before rolling, and scale is completely removed by high-pressure water jets during rolling. These operations produce rolled plates with clean and attractive surfaces. Heat treatment is performed in oxygen-free atmosphere where plates free from scale are produced.

5 Excellent dimensional accuracy and uniformity

JFE Steel produces steel plates by computer-controlled plate mills providing plates with excellent dimensional accuracy and uniformity.

JFE Steel adopts world leading technology to minimize plate crown and variation of thickness along the longitudinal direction.

6 Optimum delivery control

JFE Steel has extensive computer control systems from order entry to shipment. Order information from the customer is exactly inputted to each production process, enabling products to be delivered meeting requirements correctly and with minimum lead time.

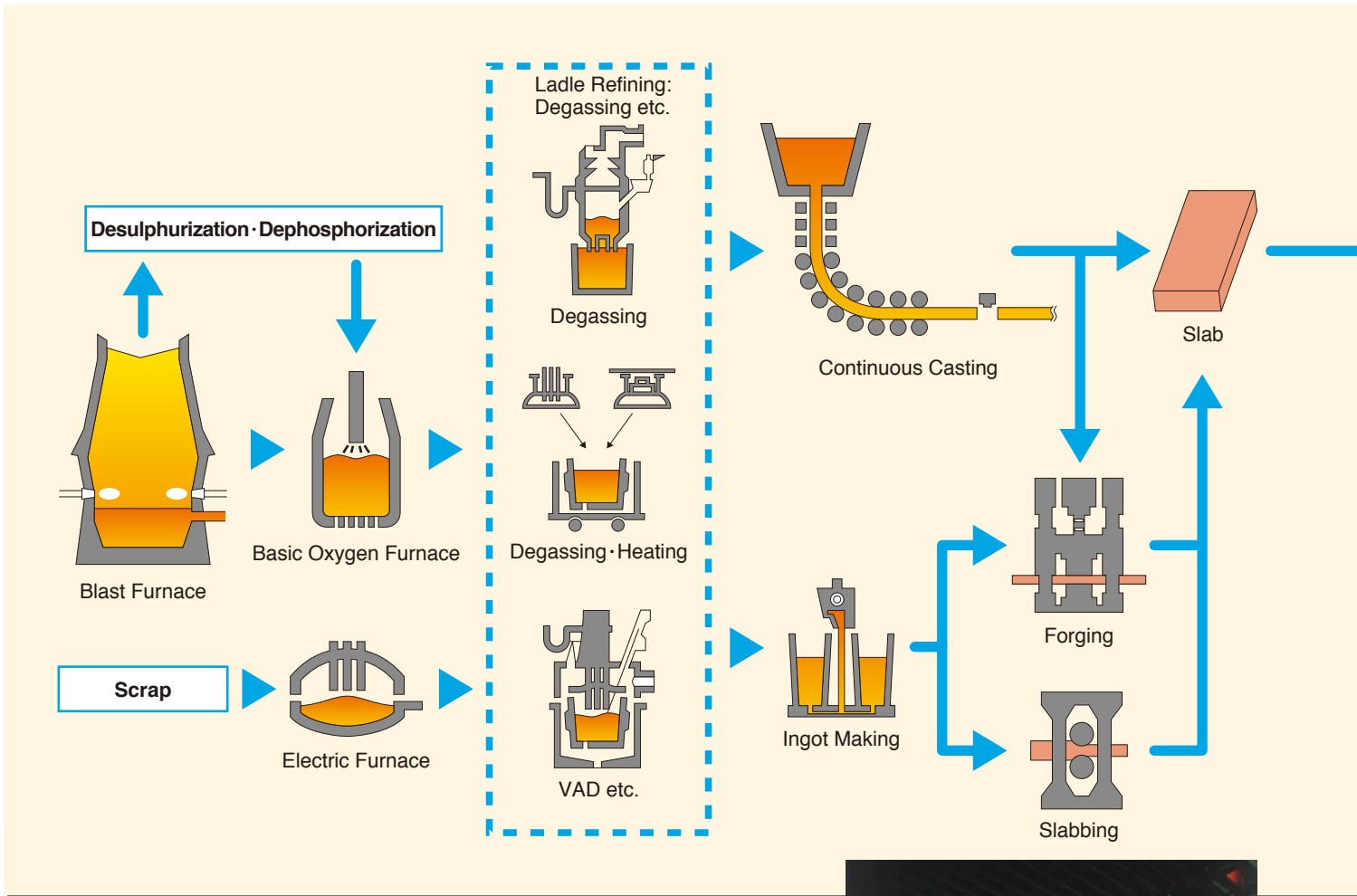
MANUFACTURING SHOPS AND MAJOR EQUIPMENT

Facility	Keihin	Kurashiki	Fukuyama
Blast furnace	1 unit	3 units	3 units
Basic oxygen furnace	2 units	6 units	5 units
Electric arc furnace	1 unit	1 unit	—
Ladle refining system	1 set	1 set	1 set
Continuous casting machine	3 units	4 units	5 units
Reheating furnace	Continuous type	2 units	3 units
	Batch type	2 units	3 units
Rolling mill	1 unit (5,500 mm width)	1 unit (5,500 mm width)	2 units (4,700 mm width)
Accelerated cooling system	1 unit	1 unit	1 unit
Shearing machine	1 set	1 set	1 set
Heat treatment furnace	2 units	4 units	1 unit
Quenching system	1 unit	2 units	—
Shot blast and painting system	1 set	3 sets	1 set
Stainless steel pickling system	—	—	1 unit
Stainless steel heat treatment furnace	—	—	1 unit
Stainless steel grinding machine	—	2 sets	3 sets
Clad slab assembly system	—	—	1 set

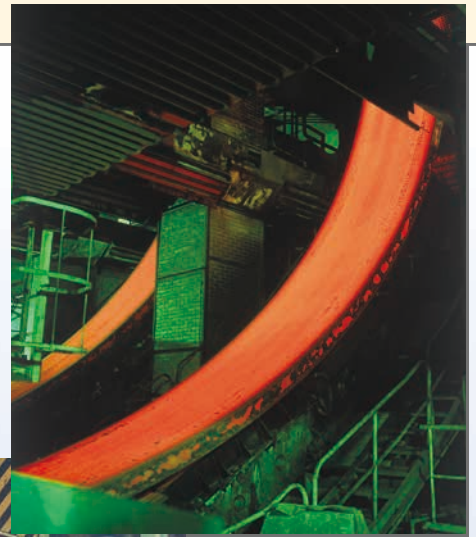


Rolling Mill

MANUFACTURING PROCESS FLOW



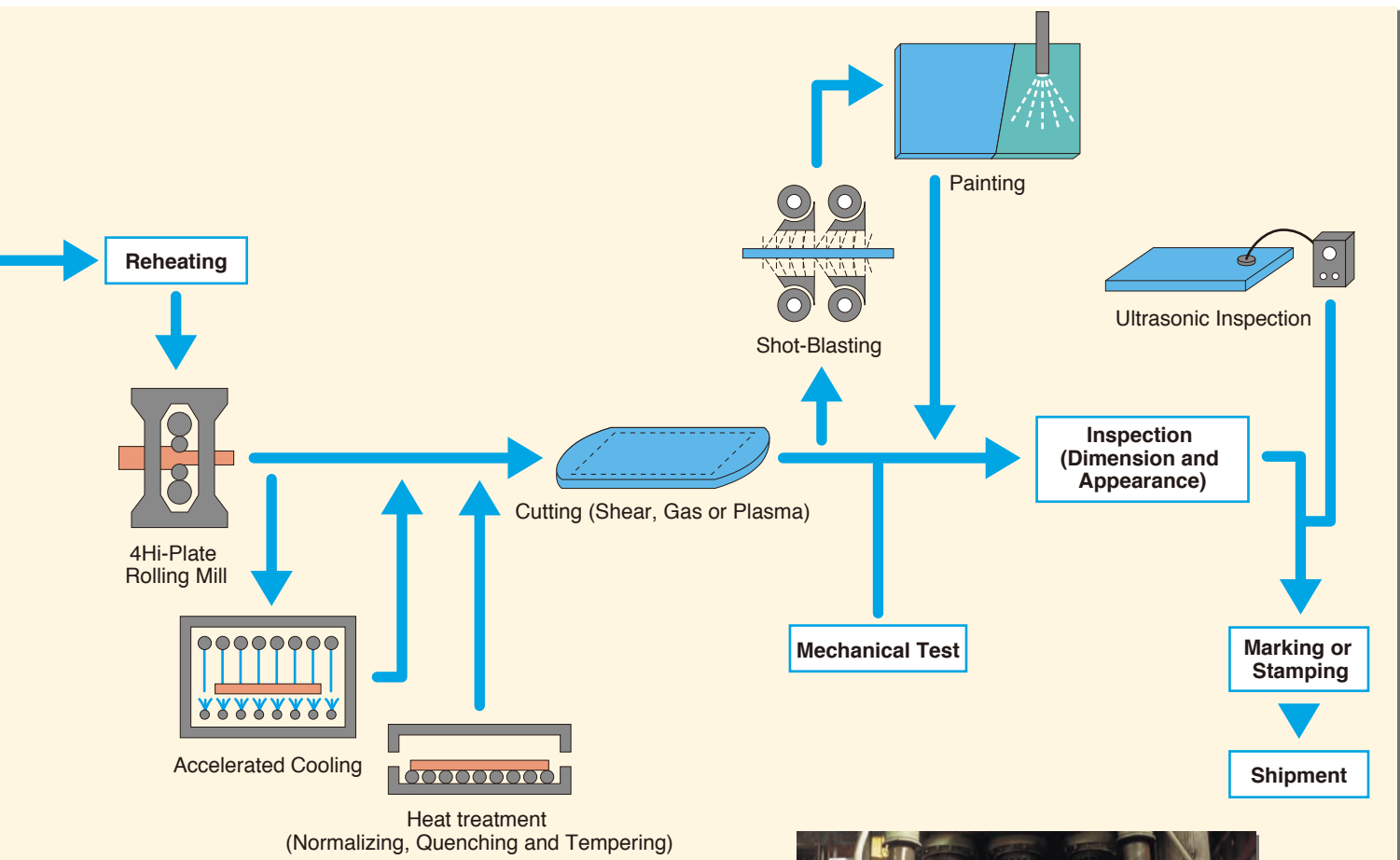
Blast furnace



Continuous casting machine



Basic oxygen furnace



JFE'S PLATE PRODUCTS SPECIFIED BY TYPICAL STANDARDS

The following table shows the grades of typical standards for JFE's plate products.

Type of steel		JIS	ASTM	API	BS	DIN	WES**	Ship's class Standard***	JFE Standard	
Steel Plates for Structural Use	Carbon-Manganese Steel	G 3101 SS330	A36	API 2H-42 2W-42	EN10025	S185		A B D E		
		SS400	A131			S235				
		G 3106 SM400	A283			S275				
		G 3131 SPHC	A529			S275				
		SPHD	A573 Gr. 58	EN10113						
		SPHE								
		G 3136 SN400								
	High Tensile Strength Steels	490 N/mm ² Class	G 3106 SM490	A572	API 2H-50 2W-50	EN10025	S355		A32, 36, 40 D32, 36, 40 E32, 36, 40 F32, 36, 40	HBL™325
			SM490Y	A573			E295			
			G 3136 SN490	A633			EN10225			
G 3140 SBHS400			A709 Gr. 50	EN10113			S355			
		A841								
540 N/mm ² Class		G 3106 SM520	A572 Gr. 60 Gr. 65	API 2W-60	EN10225	S400	HW 355	A420 D420 E420 F420	JFE-HITEN540S HBL™355 HBL™385	
			EN10113			S420				
				EN10225	S460					
590 N/mm ² Class	G 3106 SM570*	G 3140 SBHS500	A678 Gr. C Gr. D		EN10025	E335	HW 450 HW 450CF	A460 D460 E460 F460 EH47	JFE-HITEN570U2 JFE-HITEN570E JFE-HITEN590S JFE-HITEN590SL JFE-HITEN590AZ JFE-HITEN590 JFE-HITEN590U2 JFE-HITEN590E	
										A841
						EN10137	S500	HW 490 HW 490CF	A500 D500 E500 F500	JFE-HITEN610 JFE-HITEN610U2 JFE-HITEN610E HBL™440 SA440U
	690 N/mm ² Class					EN10025	E360	HW 550 HW 620	A550 D550 E550 A620 D620 E620	JFE-HITEN690S JFE-HITEN690 JFE-HITEN690M JFE-HITEN710 JFE-HITEN710M
						EN10137	S550 S620			
	780 N/mm ² Class	G 3128 SHY685	A514 A709 Gr. 100			EN10137	S690	HW 685	A690 D690 E690 F690	JFE-HITEN780EX JFE-HITEN780S JFE-HITEN780LE JFE-HITEN780M
SHY685N SHY685NS										
980 N/mm ² Class	G 3140 SBHS700				EN10137	S890 S960	HW 885		JFE-HITEN980S JFE-HITEN980 JFE-HITEN980LE	
Steel Plates for Low Temperature Service	Ni-alloy Steels	1.5%Ni Steel					LT360		JFE-LT 1.5Ni-TM	
		2.5%Ni Steel	G 3127 SL2N255	A203 Gr. A Gr. B					KL2N30	
		3.5%Ni Steel	G 3127 SL3N255	A203 Gr. D		EN10028	12Ni14		KL3N32	
			SL3N275	Gr. E						
		SL3N440								
	9%Ni Steel	G 3127 SL9N520	A353		EN10028	X8Ni 9		KL9N60		
		SL9N590	A553 I		EN10028	X7Ni 9				
	Al-Killed Steels	G 3126 SLA325A SLA325B SLA360 SLA410				EN10028	P275'L' P355'L'		KL24 KL33 KL37	
						EN10113	P275'L' P355'L' P420'L'		JFE-LT415TM	
High Tensile Strength Steels					EN10028	P460'L'	LT450	JFE-HITEN590U2L JFE-HITEN590L JFE-HITEN610U2L JFE-HITEN610L JFE-HITEN690L JFE-HITEN710L JFE-HITEN780L JFE-HITEN780FL JFE-HITEN780ML		
							LT490			
							LT550			
							LT685			

Type of steel	JIS	ASTM	API	BS	DIN	WES**	Ship's class Standard***	JFE Standard	
Atmospheric Corrosion Resistant Steel Plates	400 N/mm ² Class	G 3114 SMA400							
	490 N/mm ² Class	G 3114 SMA490 G 3140 SBHS400W	A242Type2 A588						
	590 N/mm ² Class	G 3114 SMA570* G 3140 SBHS500W							
	780 N/mm ² Class	G 3140 SBHS700W							
	High Atmospheric Corrosion Resistant Steel with Composite Addition of Corrosion Resistance Elements							LALAC™400-HS LALAC™490-HS LALAC™570-HS	
	Ni Type High Atmospheric Corrosion Resistant Steel							JFE-ACL400Type1 JFE-ACL400Type2 JFE-ACL490Type1 JFE-ACL490Type2 JFE-ACL570Type1 JFE-ACL570Type2	
Steel Plates for Boiler and Pressure Vessel	Carbon Steel	G 3103 SB410 SB450 SB480	A285 A515			EN10028 P235GH P265GH	KP42 KP46 KP49		
		G 3115 SPV235 G 3118 SGV410 SGV450	A516 Gr. 55 Gr. 60 Gr. 65		EN10028 P295GH		KPV24		
	High Tensile Strength Steels	490 N/mm ² Class	G 3115 SPV315 G 3118 SGV480 G 3124 SEV245	A299 A455 A516 Gr. 70 A537 Cl. 1 A841			EN10028 P355N	KPV32	
			G 3115 SPV355 G 3124 SEV295	A612		EN10028 P355GH	HW 355	KPV36	
			G 3115 SPV450 G 3124 SEV345	A537 Cl. 2 A738 Gr. B A841		EN10028 P460N	HW 450	KPV46	JFE-HITEN570U2 JFE-HITEN570E JFE-HITEN590 JFE-HITEN590U2 JFE-HITEN590E
		590 N/mm ² Class	G 3115 SPV490				HW 490	KPV50	JFE-HITEN610 JFE-HITEN610U2 JFE-HITEN610E
			690 N/mm ² Class		A543 Cl. 1			HW 620	JFE-HITEN690M
		780 N/mm ² Class		A517 A543 Cl. 2				HW 685	JFE-HITEN780M
		980 N/mm ² Class						HW 885	JFE-HITEN980
	Mo Steel	G 3103 SB450M SB480M	A204			EN10028 16Mo3		KPA46 KPA49 KPA56	
	Mn-Mo, Mn-Mo-Ni Steel	G 3119 SBV	A302						
		G 3120 SQV	A533						
	Cr-Mo Steel	G 4109 SCMV	A542 A387			EN10028 Steel 621 13CrMo4-5 10CrMo9-10 11CrMo9-10			
Stainless Steel Plates	G 4304 SUS	A240							
Clad Steel Plates	G 3601 SUS G 3602 Ni G 3603 Ti	A263, A264 A265							

* JFE supplies high tensile strength steel plates based on JIS SM570 with high weldability, which are SM570TMC, SMA570WTMC, SM570TMC-LB, SMA570WTMC-LB, SM570-EX, SM570-EG respectively.
TMC: Produced by TMCP, with high weldability
EX: With high weldability
EG: For high heat input welding

** When ordered by WES Designation, the corresponding JFE-HITEN approved by WES is applied. Please refer to details on "Approved or Authorized Products". (P.32)

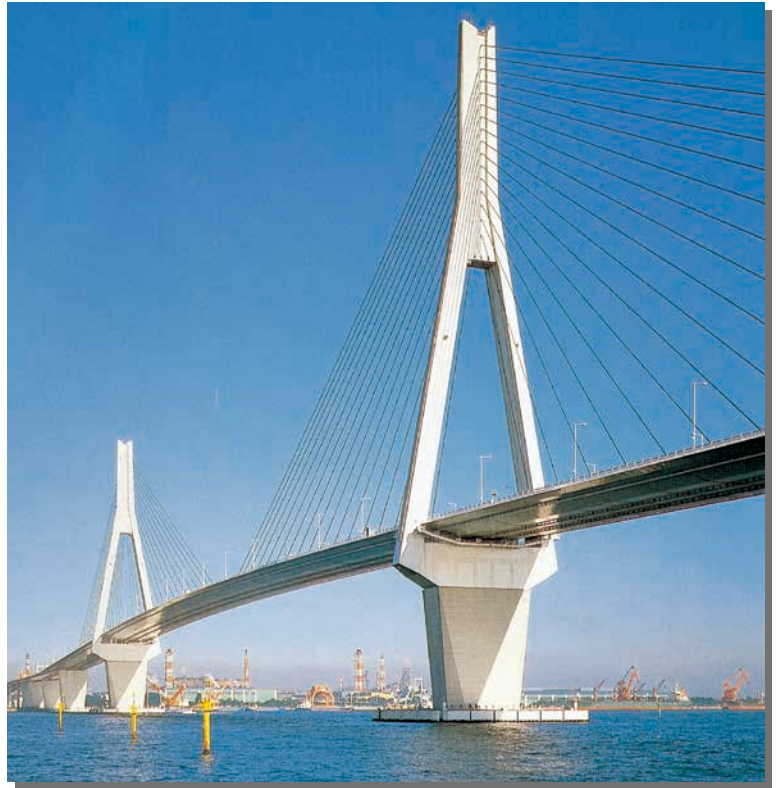
*** Ship's society approval is shown on "Approved or Authorized Products". (P.30)

APPLICATIONS

Bridges

◆ Typical Plate Products

- Steel Plates for Structural Use: JIS, ASTM etc.
- High Tensile Strength Steel Plates: JFE-HITEN
- Atmospheric Corrosion Resistant Steel Plates:
JIS G 3114 SMA, LALAC™, JFE-ACL
- Seawater Corrosion Resistant Steel Plates: JFE-MARIN™
- Longitudinally Profiled Steel Plates: LP Plates



Buildings

◆ Typical Plate Products

- Steel Plates for Structural Use: JIS, ASTM etc.
- Atmospheric Corrosion Resistant Steel Plates:
JIS G 3114 SMA, JFE-ACL
- Steel Plates for Building: HBL™, SA440U, HBL™-FR, JFE-LY



Ships

◆ Typical Plate Products

Steel Plates for Hull Structural Use:

All Ship's Class Standards

High Tensile Strength Steel Plates:

All Ship's Class Standards

Steel Plates for Low Temperature Service:

All Ship's Class Standards

Longitudinally Profiled Steel Plates (LP Plates) :

All Ship's Class Standards



Offshore Structures

◆ Typical Plate Products

Steel Plates for Structural Use: JIS, ASTM

High Tensile Strength Steel Plates:

JFE-HITEN, API, EN, NORSOK,
and all Ship's Class Standards



Hydro Power Stations

◆ Typical Plate Products

Steel Plates for Hull Structural Use: JIS, ASTM etc.

High Tensile Strength Steel Plates: JFE-HITEN

Atmospheric Corrosion Resistant Steel Plates:
JIS G 3114 SMA

Abrasion Resistant Steel Plates: JFE-EH

Seawater Resistant Steel Plates: JFE-MARIN™

Corrosion Resistant Steel Plates: JFE-ASA



Storage Tanks

◆ Typical Plate Products

Steel Plates for Pressure Vessels: JIS, ASTM etc.

High Tensile Strength Steel Plates: JFE-HITEN

Atmospheric Corrosion Resistant Steel Plates:
JIS G 3114 SMA

Steel Plates for Low Temperature Service:

JFE-LT, JFE-HITEN-L

Stainless Steel Plates: JIS, ASTM



Boilers and Pressure Vessels

◆ **Typical Plate Products**

Carbon Steel Plates for Boilers: JIS, ASTM etc.

Alloy Steel Plates for Boilers:

Mo Steel, Cr-Mo Steel, Ni-Cr-Mo Steel

Steel Plates for Pressure Vessels: JIS, ASTM etc.

Clad Steel Plates: JIS, ASTM etc.

Stainless Steel Plates: JIS, ASTM



Machinery



◆ **Typical Plate Products**

Steel Plates for Structural Use: JIS, ASTM etc.

High Tensile Strength Steel Plates: JFE-HITEN

Abrasion Resistant Steel Plates: JFE-EH

JFE STANDARDS

JFE Standards

Type	Brand	Feature	Outline of Products
High Tensile Strength Steel Plates	JFE-HITEN540S JFE-HITEN570U2 JFE-HITEN570E JFE-HITEN590 JFE-HITEN590U2 JFE-HITEN590E JFE-HITEN590S JFE-HITEN590SL JFE-HITEN610 JFE-HITEN610U2 JFE-HITEN610E JFE-HITEN690 JFE-HITEN690M JFE-HITEN690S JFE-HITEN710 JFE-HITEN710M JFE-HITEN780M JFE-HITEN780EX JFE-HITEN780S JFE-HITEN780LE JFE-HITEN980 JFE-HITEN980S JFE-HITEN980LE JFE-HYD960LE JFE-HYD1100LE	Tensile Strength (TS): Over 540N/mm ² Over 570N/mm ² Over 570N/mm ² Over 590N/mm ² Over 590N/mm ² Over 590N/mm ² Over 590N/mm ² Over 590N/mm ² Over 610N/mm ² Over 610N/mm ² Over 610N/mm ² Over 610N/mm ² Over 690N/mm ² Over 690N/mm ² Over 690N/mm ² Over 690N/mm ² Over 710N/mm ² Over 710N/mm ² Over 780N/mm ² Over 780N/mm ² Over 780N/mm ² Over 780N/mm ² Over 780N/mm ² Over 780N/mm ² Over 780N/mm ² Over 980N/mm ² Over 980N/mm ² Over 980N/mm ² Yield Point (Proof Stress): Over 960N/mm ² Over 1100N/mm ²	JFE Steel has continued testing and research on high tensile strength steels since its first plate mill began operation. In particular, JFE Steel has carried out testing and research on high tensile strength steel plates with excellent weldability, and began sales of JFE-HITEN490 and JFE-HITEN540 with extremely high weldability in 1952. Since that time, JFE Steel has produced a series of high tensile strength steels up to JFE-HITEN980, realizing progressively higher strength. These products are used in a wide range of applications, including storage tanks, spherical gas holders, bridges, penstocks, railway rolling stock, ships, building construction, construction machinery, steel towers, equipment for civil construction, low-temperature vessels, and mining and agricultural machinery, among others, where they are demonstrating their true value. Most notably, JFE Steel developed the relaxed preheating-type steels of the "U1/U2" series, "EX" and "LE", which provides outstanding low temperature toughness for use in construction machinery. JFE Steel has also developed SM570 class products which display high strength in the as-rolled condition together with high weldability. These products have acquired an excellent reputation in many engineering fields.
High Atmospheric Corrosion Resistant Steel Plates	LALAC™400-HS LALAC™490-HS LALAC™570-HS JFE-ACL400 Type1 JFE-ACL400 Type2 JFE-ACL490 Type1 JFE-ACL490 Type2 JFE-ACL570 Type1 JFE-ACL570 Type2	High atmospheric corrosion resistant steel plates with composite addition of corrosion resistance elements For seaside/coastal regions, regions where antifreezing agents are used Ni type high atmospheric corrosion resistant steel plates For seaside/coastal regions, regions where antifreezing agents are used	In addition to general atmospheric corrosion resistant steel plates, JFE Steel has developed the 1.5Ni-Mo Type 1 for standard type and 2.5Ni Type 2 for high salinity-environment type as Ni type high atmospheric corrosion resistant steels that can be used in seaside and coastal regions and regions where antifreezing agents are used, where the atmospheric corrosion resistant steels provided in JIS standards cannot be used without painting due to high airborne salinity. These JFE Steel products make it possible to respond to a wide range of salt concentrations. In addition, by composite addition of trace amounts of corrosion resistance elements which are effective against salinity, JFE Steel commercialized the LALAC™ Series, which realizes salinity resistance on the same level as the standard type Ni type high atmospheric corrosion resistant steel without heavy addition of Ni. As a result, these products are making an important contribution to reducing Life Cycle Cost (LCC). To prevent initial outflow rust and maintain an attractive appearance, JFE Steel recommends use of rust stabilizing agents, the rust aging type "CUPTENCOAT™ M" and "CUPTENCOAT™ AQUA" and the rust accelerating type "e-RUS™."
Steel Plates for Low Temperature Service	JFE-LT415TM JFE-LT1.5Ni-TM JFE-HITEN590U2L JFE-HITEN590L JFE-HITEN610U2L JFE-HITEN610L JFE-HITEN690L JFE-HITEN710L JFE-HITEN780L JFE-HITEN780FL JFE-HITEN780ML	Al-killed Steel 1.5%Ni Steel TS: Over 590N/mm ² Over 590N/mm ² Over 610N/mm ² Over 610N/mm ² Over 690N/mm ² Over 710N/mm ² Over 780N/mm ² Over 780N/mm ² Over 780N/mm ²	These steel plates for low temperature service are applied to structures such as low temperature vessels and oil drilling rigs for arctic areas. In particular, various standards and steel grades are used in low temperature vessels, corresponding to the low temperature conditions of each liquefied gas. The WES standard "Evaluation of criterion of rolled steels for low temperature application" was enacted by the Japan Welding Engineering Society as a standard for steel plates for low temperature service, and the concepts of that standard have also been incorporated in Japanese Industrial Standards (JIS). Steel plates for low temperature service have also been standardized in ASTM, ASME, BS, DIN, etc., and in ship classification societies of various countries, beginning with ClassNK. JFE Steel supplies steel plates conforming to the above standards, and has also developed other original steel plates and obtained qualification for those products from the related organizations.

Liquefied gas		Applicable Steel Grades	
-50°F	Ammonia -33.4°C Propane -45°C	JFE-HITEN-L SLA235 SLA325 JFE-LT1.5Ni-TM	-46°C
-75°F	Propylene -47.7°C Hydrogen sulfide -59.5°C	SL2N SL3N	-60°C
-150°F	CO ₂ gas -78.5°C Acetylene -84°C Ethane -88.3°C Ethylene -104°C		-101°C
-320°F	Methane -163°C Oxygen -183°C Argon -186°C Fluorine -187°C	SL9N	-196°C

Type	Brand	Feature	Outline of Products
Abrasion Resistant Steel Plates	JFE-EH-C340 JFE-EH-C400 JFE-EH-C400LE JFE-EH-C450 JFE-EH-C450LE JFE-EH-C500 JFE-EH-C500LE JFE-EH-C550 JFE-EH-C600 JFE-EH-SP	High hardness HB340-600	Abrasion resistance is required in many components of construction equipment, industrial machinery, transportation equipment and mining machinery. Conventionally, special steel plates, high carbon steel plates or high tensile strength steel plates had been used in these parts. However, JFE Steel developed Japan's first steel plate exclusively for abrasion resistance, and produces and sells this abrasion-resistant steel plate under the trade-name "JFE-EH (EVERHARD™)." In "JFE-EH," the required hardness is realized by adjusting the contents of carbon and other special elements and applying a special heat treatment. "JFE-EH" is available in both the Standard Type and Alloy Type. Recently, JFE Steel developed "SP," which has abrasion resistance of 500 grade or higher, and "LE" with excellent low temperature toughness. Both products have been highly evaluated by users. These products can make an important contribution to extending life, reducing weight and shortening repair time in all types of construction and industrial machinery.
TMCP Type High Strength Steel Plates for Building Structure	HBL™325 HBL™355 HBL™385 HBL™440 HBL™630-L	High reference strength and Low yield ratio in thickness 40.1-100 mm of HBL™325, 355 and 19-100 mm of HBL™385, 440 and 12-40 mm of HBL™630-L	In these steels, high reference strength is guaranteed (certified by Japan's Minister of Land, Infrastructure, Transport and Tourism) even for the thicknesses 40-100 mm. These steels have a low yield ratio and demonstrate high plastic deformation performance. JFE Steel has also developed the high strength steels HBL™385, 440, and 630, which offer higher strength than the conventional 355 class and are contributing to weight reduction.
High-Performance 590 N/mm ² High Strength Steel Plates for Building Structure	SA440 SA440U	High reference strength Good plastic deformability High toughness High weldability	SA440U was developed by greatly improving the weldability of the conventional SA440. Preheating conditions for welding are greatly relaxed, and sound, safe welds can be obtained, even with accessory hardware. This product has earned a high evaluation from users.
High-Performance 780 N/mm ² High Strength Steel Plates for Building Structure	JFE-HITEN780T	Yield point (proof stress): 630-750 N/mm ² Tensile strength: 780-930 N/mm ² Yield ratio: 85 % or less	780 N/mm ² steel plate for building structures. While this is a high strength material, a yield ratio of 85% or less is guaranteed. Contributes to reduction of the number of columns and smaller column section in ultra-high rise buildings and other structures.
Fire Resistant Steel Plates for Building Structure	HBL™325FR HBL™355FR	Elevated-temperature strength guaranteed	Conform to JIS-SN and SM standards, and fire resistance is also realized in TMCP type high yield point steel.
Low Yield Strength Steel Plates for Building Structure	JFE-LY100 JFE-LY225	Excellent deforming ability enables the absorption of earthquake energy.	Low yield point steels for earthquake dampers with high energy absorbing capacity can be selected as desired from two reference strength options.
Seawater Resistant Steel Plates	JFE-MARIN™400 JFE-MARIN™490 JFE-MARIN™490Y	For welded structure use	JFE Steel developed unique steel plates having high seawater resistance, and produces and sells under the trade-name "JFE-MARIN™," for use in offshore and waterfront structures, bridges and ships, particularly for use in parts requiring resistance against corrosion due to sea water.
Corrosion Resistant Steel Plates	JFE-ZP	For galvanizing pots	JFE Steel's corrosion resistant steel plates provide improved corrosion resistance to various corrosive environments, and have been extensively used in chemical plants, the metal plating industry, shipbuilding and other fields, corresponding to the respective purpose.
	JFE-ASA400 JFE-ASA440	For sulfuric acid corrosion resistance	
	JFE-AH 1, 2	HIC resistance	
	JFE-SIP™ JFE-SIP™-OT1 JFE-SIP™-OT2 JFE-SIP™-BT JFE-SIP™-CC	Corrosion resistant steel plates for shipbuilding. Applications include top and bottom plates of crude oil tanker cargo tanks, ballast tanks in all types of ships and cargo holds of coal carriers.	
Pure Iron Plates for Magnetic Shielding	JFE-EFE	High purity and superior magnetization characteristic	Demonstrates an excellent magnetization property because of its high purity.
Steel Plates for Mold Use	JFE-MD1 JFE-MD2 JFE-MD3	Good machinability and workability with stability of fatigue and heat impact properties	Prehardened steels combining the optimum chemical composition and heat treatment; available in 3 hardness grades. These products offer excellent machinability, workability and stable performance against fatigue and heat impact in the medium temperature range, for example, in plastic injection molding.
High Strength Steel Plates for Hot-dip Zinc-coated Tower	JFE-HITEN590AZ	Tensile strength: over 590 N/mm ²	High tensile strength steel plates for transmission towers subjected to hot dip galvanizing, well-designed considering prevention of galvanizing cracks.
Longitudinally Profiled Steel Plates (LP Plates)	Ship's class standard A, B, D A32, D32, E32 A36, D36, E36 A40, D40, E40 JIS Standard SS400 SM400, 490 490Y, 520 570Q, 570TMC SMA400, 490, 570	Thickness of this plate is continuously and linearly varied in length direction.	LP Plates are manufactured by advanced rolling technology and contribute to rationalization, mainly in shipbuilding and bridge fabrication. Shapes are classified into 6 types. Please consult with JFE Steel individually concerning the actual shape and dimensions required. Main size availability is as follows. Width: Up to 5,000 mm Max. thickness difference in a plate: 30 mm Max. taper in thickness: 8 mm/m Min. thickness: 10 mm Total length: 6 – 20 m Product weight: 6 – 20 t
Steel Plates for Rockets	JFE-HT140NP JFE-HT210P	Alloyed steel plates for rocket chamber	Ultra high strength and elevated temperature resistance alloys. Chemical compositions are as follows. JFE-HT140NP: 4Ni-1.8Cr-0.5Mo-V JFE-HT 210P: 18Ni-9Co-5Mo-0.5Ti-Al-Zn-B

Note: All chemical compositions described in this catalogue are values by ladle analysis.

High Tensile Strength Steel Plates

JFE-HITEN590 and 690 Series

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)														
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	B	Ceq		P _{CM}
														Thickness (mm)		
JFE-HITEN590 (6 – 150)	QT	≤0.16	0.15/ 0.55	≤1.50	≤0.025	≤0.015	≤0.30	≤1.00	≤0.30	≤0.30	≤0.08	—	—	t ≤50 50 < t ≤75 75 < t	≤0.44 ≤0.46 ≤0.48	≤0.26 ≤0.28 ≤0.28
JFE-HITEN610 (6 – 150)	QT	≤0.16	0.15/ 0.55	≤1.50	≤0.025	≤0.015	≤0.30	≤1.00	≤0.30	≤0.30	≤0.08	—	—	t ≤50 50 < t ≤75 75 < t	≤0.45 ≤0.47 ≤0.49	≤0.26 ≤0.28 ≤0.28
JFE-HITEN690 (6 – 100)	QT	≤0.16	≤0.35	≤1.20	≤0.025	≤0.015	≤0.40	≤1.00	≤0.70	≤0.50	≤0.08	—	≤0.005	t ≤50 50 < t	≤0.54 ≤0.58	— —
JFE-HITEN710 (6 – 100)	QT	≤0.16	≤0.35	≤1.20	≤0.025	≤0.015	≤0.40	≤1.00	≤0.70	≤0.50	≤0.08	—	≤0.005	t ≤50 50 < t	≤0.55 ≤0.59	— —
JFE-HITEN690M (6 – 100)	QT	≤0.14	≤0.35	≤1.20	≤0.015	≤0.015	≤0.40	0.30/ 1.30	≤0.70	≤0.50	≤0.05	—	≤0.005	t ≤50 50 < t	≤0.53 ≤0.57	— —
JFE-HITEN710M (6 – 100)	QT	≤0.14	≤0.35	≤1.20	≤0.015	≤0.015	≤0.40	0.30/ 1.30	≤0.70	≤0.50	≤0.05	—	≤0.005	t ≤50 50 < t	≤0.53 ≤0.57	— —

For Heat Treatment: QT = Quenching and Tempering

JFE-HITEN780 Series and JFE-HITEN980

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)															
		Thickness (mm)	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	B	Ceq		P _{CM}
															Thickness (mm)		
JFE-HITEN780M (6 – 150)	QT	t ≤100 100 < t	≤0.14 ≤0.18	≤0.35 ≤0.35	≤1.20 ≤1.20	≤0.015 ≤0.015	≤0.015 ≤0.015	≤0.50 ≤0.50	0.30/1.50 0.30/1.50	≤0.70 ≤0.80	≤0.60 ≤0.60	≤0.05 ≤0.05	—	≤0.005 ≤0.005	t ≤50 50 < t ≤100 100 < t	≤0.53 ≤0.57 ≤0.62	≤0.30 ≤0.32 —
JFE-HITEN980 (6 – 120)	QT	—	≤0.14	≤0.35	≤1.20	≤0.010	≤0.005	≤0.70	≤4.00	≤0.80	≤0.80	≤0.15	≤0.02	≤0.005	t ≤50 50 < t ≤100 100 < t	≤0.59 ≤0.62 ≤0.71	≤0.29 ≤0.33 ≤0.36

For Heat Treatment: QT = Quenching and Tempering

	Tensile Test						Bending Test (180°)		Impact Test (2 mm V Charpy)		
	Yield Point or Proof Stress		Tensile Strength (N/mm ²)	Elongation			Bending Radius		Test Temperature		Absorbed Energy (J)
	Thickness (mm)	(N/mm ²)		Thickness (mm)	(%)	Test Specimen	Thickness (mm)	(Test Specimen No. 1)	Thickness (mm)	(°C)	
	—	≥450	590/710	t ≤16 16 < t ≤50 20 < t	≥20 ≥28 ≥20	No. 5 No. 5 No. 4	—	1.5t	12 < t	-10	≥47
	t ≤75 75 < t	≥490 ≥470	610/730	t ≤16 16 < t ≤50 20 < t	≥19 ≥27 ≥19	No. 5 No. 5 No. 4	—	1.5t	12 < t ≤32 32 < t	-10 -15	≥47 ≥47
	t ≤75 75 < t	≥590 ≥570	690/820	t ≤16 16 < t ≤50 20 < t	≥17 ≥25 ≥17	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	12 < t ≤32 32 < t ≤50 50 < t	-15 -20 -30	≥47 ≥47 ≥47
	t ≤75 75 < t	≥620 ≥600	710/840	t ≤16 16 < t ≤50 20 < t	≥17 ≥25 ≥17	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	12 < t ≤32 32 < t ≤50 50 < t	-15 -20 -30	≥47 ≥47 ≥47
	t ≤75 75 < t	≥590 ≥570	690/820	t ≤16 16 < t ≤50 20 < t	≥17 ≥25 ≥17	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	12 < t ≤32 32 < t ≤50 50 < t	-15 -20 -30	≥47 ≥47 ≥47
	t ≤75 75 < t	≥620 ≥600	710/840	t ≤16 16 < t ≤50 20 < t	≥17 ≥25 ≥17	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	12 < t ≤32 32 < t ≤50 50 < t	-15 -20 -30	≥47 ≥47 ≥47

	Tensile Test						Bending Test (180°)		Impact Test (2 mm V Charpy)		
	Yield Point or Proof Stress		Tensile Strength (N/mm ²)	Elongation			Bending Radius		Test Temperature		Absorbed Energy (J)
	Thickness (mm)	(N/mm ²)		Thickness (mm)	(%)	Test Specimen	Thickness (mm)	(Test Specimen No. 1)	Thickness (mm)	(°C)	
	t ≤75 75 < t	≥685 ≥665	780/930	t ≤16 16 < t ≤50 20 < t	≥16 ≥24 ≥16	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	12 < t ≤32 32 < t ≤50 50 < t	-20 -25 -35	≥47 ≥47 ≥47
	t ≤75 75 < t ≤100 100 < t	≥885 ≥865 ≥865	950/1130 950/1130 930/1110	t ≤16 16 < t ≤50 20 < t	≥12 ≥19 ≥12	No. 5 No. 5 No. 4	t ≤32 32 < t	2.0t 2.5t	12 < t	-60	≥47

High Tensile Strength Steel Plates with High Weldability

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)														
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	B	Ceq		P _{CM}
														Thickness (mm)		
JFE-HITEN570U2 (6 – 100)	QT	≤0.09	0.15/ 0.55	≤1.60	≤0.025	≤0.010	≤0.30	≤0.30	≤0.30	≤0.30	≤0.06	≤0.03	—	—	—	≤0.20
JFE-HITEN590U2 (6 – 75)	QT	≤0.09	0.15/ 0.55	1.20/ 1.60	≤0.025	≤0.010	≤0.30	≤0.30	≤0.30	≤0.30	≤0.06	≤0.03	—	—	—	≤0.20
JFE-HITEN610U2 (6 – 75)	QT	≤0.09	0.15/ 0.55	1.20/ 1.60	≤0.025	≤0.010	≤0.30	≤0.30	≤0.30	≤0.30	≤0.06	≤0.03	—	—	—	≤0.20
JFE-HITEN780EX (6 – 60)	QT	≤0.09	≤0.55	0.60/ 1.50	≤0.015	≤0.010	≤0.50	0.30/ 1.50	≤0.80	≤0.60	≤0.05	≤0.03	≤0.005	t ≤34 34 < t ≤60	≤0.53* ≤0.57*	≤0.23 ≤0.25

For Heat Treatment: QT = Quenching and Tempering

High Tensile Strength Steel Plates for High Heat-input Welding

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)												
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	B	P _{CM}
JFE-HITEN570E (6 – 100)	QT	≤0.09	0.15/ 0.55	≤1.60	≤0.020	≤0.010	≤0.30	≤0.30	≤0.30	≤0.30	≤0.06	≤0.03	—	≤0.20
JFE-HITEN590E (6 – 75)	QT	≤0.09	0.15/ 0.55	1.00/ 1.60	≤0.020	≤0.010	≤0.30	≤0.30	≤0.30	≤0.30	≤0.06	≤0.03	—	≤0.20
JFE-HITEN610E (6 – 75)	QT	≤0.09	0.15/ 0.55	1.00/ 1.60	≤0.020	≤0.010	≤0.30	≤0.30	≤0.30	≤0.30	≤0.06	≤0.03	—	≤0.20

For Heat Treatment: QT = Quenching and Tempering

	Tensile Test						Bending Test (180°)		Impact Test (2 mm V Charpy)		
	Yield Point or Proof Stress		Tensile Strength (N/mm ²)	Elongation			Bending Radius		Test Temperature		Absorbed Energy (J)
	Thickness (mm)	(N/mm ²)		Thickness (mm)	(%)	Test Specimen	Thickness (mm)	(Test Specimen No. 1)	Thickness (mm)	(°C)	
	t ≤16 16 < t ≤40 40 < t ≤75 75 < t	≥460 ≥450 ≥430 ≥420	570/700	t ≤16 16 < t ≤50 20 < t	≥20 ≥28 ≥20	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	12 < t	-5	≥47
	—	≥450	590/710	t ≤16 16 < t ≤50 20 < t	≥20 ≥28 ≥20	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	6 ≤ t ≤20 20 < t ≤32 32 < t ≤50 50 < t	5 -5 -10 -20	≥47** ≥47 ≥47 ≥47
	—	≥490	610/730	t ≤16 16 < t ≤50 20 < t	≥19 ≥27 ≥19	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	6 ≤ t ≤20 20 < t ≤32 32 < t ≤50 50 < t	0 -5 -15 -25	≥47** ≥47 ≥47 ≥47
	t ≤50 50 < t ≤60	≥685 ≥665	780/930 760/910	t ≤16 16 < t ≤50 20 < t	≥16 ≥24 ≥16	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	12 < t ≤32 32 < t ≤60	-20 -25	≥47 ≥47

* WES+Cu/13 (Cu≥0.30)
 ** 6 ≤ t ≤ 8 24J (1/2 Size)
 8 < t ≤ 10.5 35J (3/4 Size)
 10.5 < t < 12 39J (3/4 Size)

	Tensile Test						Bending Test (180°)		Impact Test (2 mm V Charpy)		
	Yield Point or Proof Stress		Tensile Strength (N/mm ²)	Elongation			Bending Radius		Test Temperature		Absorbed Energy (J)
	Thickness (mm)	(N/mm ²)		Thickness (mm)	(%)	Test Specimen	Thickness (mm)	(Test Specimen No. 1)	Thickness (mm)	(°C)	
	t ≤16 16 < t ≤40 40 < t ≤75 75 < t	≥460 ≥450 ≥430 ≥420	570/700	t ≤16 16 < t ≤50 20 < t	≥20 ≥28 ≥20	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	12 < t	-5	≥47
	—	≥450	590/710	t ≤16 16 < t ≤50 20 < t	≥20 ≥28 ≥20	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	6 ≤ t ≤20 20 < t ≤32 32 < t ≤50 50 < t	5 -5 -10 -20	≥47** ≥47 ≥47 ≥47
	—	≥490	610/730	t ≤16 16 < t ≤50 20 < t	≥19 ≥27 ≥19	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	6 ≤ t ≤20 20 < t ≤32 32 < t ≤50 50 < t	0 -5 -15 -25	≥47** ≥47 ≥47 ≥47

** 6 ≤ t ≤ 8 24J (1/2 Size)
 8 < t ≤ 10.5 35J (3/4 Size)
 10.5 < t < 12 39J (3/4 Size)

High Tensile Strength Steel Plates for Civil Engineering and Industrial Machinery

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)															
		Thickness (mm)	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	B	Ceq	P _{CM}	
JFE-HITEN540SA (6-30)	CR or TMCP	—	≤0.18	≤0.55	≤1.80	≤0.030	≤0.025	Other elements are added as required.								—	—
JFE-HITEN540SB (6-30)		—	≤0.18	≤0.55	≤2.00	≤0.030	≤0.020	Other elements are added as required.								≤0.45	—
JFE-HITEN590SA (6-40)	CR or TMCP	—	≤0.18	≤0.55	≤2.00	≤0.030	≤0.015	Other elements are added as required.								≤0.45	—
JFE-HITEN590SB (6-40)		—	≤0.16	0.20/ 0.55	0.80/ 1.60	≤0.030	≤0.015	—	—	—	≤0.35	≤0.08	≤0.05	—	≤0.46	≤0.22	
JFE-HITEN590SL (6-50)	CR or TMCP	—	≤0.15	≤0.55	≤2.00	≤0.030	≤0.015	Nb, V, Ti and other elements are added as required.								≤0.50	—
JFE-HITEN780S (5-160)	QT	t ≤50	≤0.25	≤0.55	≤1.60	≤0.030	≤0.015	—	—	≤0.70	≤0.30	≤0.10	Ti:0.005/0.02	≤0.005	≤0.53	—	
		50 < t ≤100	≤0.20					≤0.50	≤0.50	≤1.50	≤0.60		Ti:0.005/0.02		≤0.61		
		100 < t ≤160	≤0.18	≤0.50	≤0.50	≤1.50	≤0.60	Ti:≤0.03	≤0.70								
JFE-HITEN780LE (5-203.2)	QT or TMCP	t ≤19	≤0.20	≤0.40	≤1.40	≤0.025	≤0.015	—	—	≤0.20	≤0.15	≤0.08	≤0.03	≤0.005	≤0.40*	—	
		19 < t ≤32													≤0.43*		
		32 < t ≤40													≤0.47*		
		40 < t ≤50													≤0.53*		
		50 < t ≤70													≤0.65*		
		70 < t ≤160	≤0.73*														
160 < t ≤203.2	≤0.18	≤0.55	≤1.60	≤0.025	≤0.015	≤0.60	≤1.00	≤1.50	≤0.80	≤0.60	≤0.10	≤0.75*					
JFE-HITEN980S (5-50.8)	QT	—	≤0.18	≤0.35	≤1.20	≤0.020	≤0.020	≤0.70	≤2.00	≤0.80	≤0.80	≤0.08	≤0.02	≤0.005	≤0.65	—	
JFE-HITEN980LE (5-101.6)	QT	t ≤32	≤0.18	≤0.40	≤1.40	≤0.020	≤0.015	—	—	≤0.80	≤0.60	≤0.10	≤0.03	≤0.005	≤0.58*	—	
		32 < t ≤50.8								≤1.50	≤0.80				≤0.71*		
JFE-HYD960LE (5-63.5)	QT or TMCP	t ≤32	≤0.18	≤0.70	≤1.70	≤0.020	≤0.010	—	—	≤1.00	≤0.60	≤0.08	—	≤0.004	≤0.64*	—	
		32 < t ≤50.8								≤0.90	≤0.70*						
		50.8 < t ≤63.5	≤0.20	≤0.70	≤1.70	≤0.020	≤0.010	≤1.00	≤0.90	≤0.08	—	≤0.004	≤0.70*				
JFE-HYD1100LE (12-32)	QT	—	≤0.20	≤0.70	≤1.70	≤0.020	≤0.010	—	—	≤1.00	≤0.90	≤0.08	—	≤0.004	≤0.70*	—	

* C+Mn/6+(Cu+Ni)/15+(Cr+Mo+V)/5

High Atmospheric Corrosion Resistant Steel Plates

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)												
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Sn	V	Nb	
LALAC™ 400-HS (6-100)	AR or N	≤0.18	0.15/ 0.65	≤1.65	≤0.035	≤0.035	0.30/ 0.50	0.05/ 0.35	≤0.75	—	The alloying elements Sn, Nb, V, etc. are added as required. However, Mo+Nb+Ti+V ≤0.15.			
LALAC™ 490-HS (6-100)	AR or N	≤0.18	0.15/ 0.65	≤1.65	≤0.035	≤0.035	0.30/ 0.50	0.05/ 0.35	≤0.75	—	The alloying elements Sn, Nb, V, etc. are added as required. However, Mo+Nb+Ti+V ≤0.15.			
LALAC™ 570-HS (6-100)	TMCP or QT	≤0.18	0.15/ 0.65	≤1.65	≤0.035	≤0.035	0.30/ 0.50	0.05/ 0.35	≤0.75	—	The alloying elements Sn, Nb, V, etc. are added as required. However, Mo+Nb+Ti+V ≤0.15.			
JFE-ACL 400AType1 400BType1 400CType1 (6-100)	AR or N	≤0.18	0.15/ 0.65	≤1.25	≤0.035	≤0.035	—	1.30/ 1.80	—	0.20/ 0.60	Nb, V and others are added as required.			
JFE-ACL 400AType2 400BType2 400CType2 (6-100)	AR or N	≤0.06	0.15/ 0.65	≤1.25	≤0.035	≤0.035	0.30/ 0.50	2.50/ 3.00	—	—	Nb, V and others are added as required.			
JFE-ACL 490AType1 490BType1 490CType1 (6-100)	AR or N	≤0.18	0.15/ 0.65	≤1.40	≤0.035	≤0.035	—	1.30/ 1.80	—	0.20/ 0.60	Nb, V and others are added as required.			
JFE-ACL 490AType2 490BType2 490CType2 (6-100)	AR or N	≤0.06	0.15/ 0.65	≤1.40	≤0.035	≤0.035	0.30/ 0.50	2.50/ 3.00	—	—	Nb, V and others are added as required.			
JFE-ACL 570Type1 (6-100)	TMCP or QT	≤0.18	0.15/ 0.65	≤1.40	≤0.035	≤0.035	—	1.30/ 1.80	—	0.20/ 0.60	Nb, V and others are added as required.			
JFE-ACL 570Type2 (6-100)	TMCP or QT	≤0.06	0.15/ 0.65	≤1.40	≤0.035	≤0.035	0.30/ 0.50	2.50/ 3.00	—	—				

	Tensile Test						Bending Test (180°)		Impact Test (2 mm V Charpy)		
	Yield Point or Proof Stress		Tensile Strength (N/mm ²)	Elongation			Bending Radius		Test Temperature		Absorbed Energy (J)
	Thickness (mm)	(N/mm ²)		Thickness (mm)	(%)	Test Specimen	Thickness (mm)	(Test Specimen No.1)	Thickness (mm)	(°C)	
	—	≥355	540/660	t ≤16 16 < t ≤20 20 < t	≥14 ≥17 ≥23	No. 1A No. 1A No. 4	—	1.5t	— 12 < t	— 0	— ≥47
	—	≥450	590/710	t ≤16 16 < t ≤50 20 < t	≥20 ≥28 ≥20	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	— t ≤12 12 < t	— — -10	— — ≥47
	t ≤32 32 < t	≥450 ≥430	590/710 570/705	t ≤16 16 < t ≤20 20 < t	≥20 ≥26 ≥20	No. 5 No. 5 No. 4	—	1.5t	6 ≤ t ≤36 36 < t	-40 -20	≥27** ≥27
	—	≥550	690/830	t ≤16 16 < t	≥17 ≥25	No. 5 No. 5	—	1.5t	12 < t	-10	≥47
	t ≤75 75 < t ≤160	≥685 ≥665	780/930 780/930	t ≤16 16 < t ≤40 20 < t	≥16 ≥24 ≥16	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	5 ≤ t ≤12 12 < t ≤20 20 < t ≤32 32 < t ≤160	— -5 -15 -20	— ≥35 ≥35 ≥35
	—	≥685	780/930	t ≤16 16 < t ≤40 20 < t	≥16 ≥24 ≥16	No. 5 No. 5 No. 4	t ≤32 32 < t	1.5t 2.0t	5 ≤ t <6 6 ≤ t <12 12 ≤ t ≤203.2	— -40 -40	— ≥40*** ≥40
	—	≥885	950/1130	t ≤16 16 < t ≤50.8 20 < t	≥12 ≥19 ≥12	No. 5 No. 5 No. 4	t ≤32 32 < t	2.0t 2.5t	5 ≤ t ≤12 12 < t ≤20 20 < t ≤32 32 < t	— -10 -25 -30	— ≥35 ≥35 ≥35
	t ≤50.8 50.8 < t ≤101.6	≥900 ≥830	980/1150 880/1080	t ≤16 16 < t ≤50.8 20 < t	≥12 ≥19 ≥12	No. 5 No. 5 No. 4	t ≤32 32 < t	2.0t 2.5t	5 ≤ t <6 6 ≤ t <12 12 ≤ t ≤101.6	— -40 -40	— ≥40*** ≥40
	t ≤50.8 50.8 < t ≤63.5	≥960 ≥930	980/1150 950/1120	t ≤40 40 < t	≥12	No. 5 No. 4	—	3.0t	5 ≤ t ≤50.8 50.8 < t ≤63.5	-40	≥27**** ≥19
	—	≥1100	1180/1500	—	≥12	No. 5	—	4.0t	—	-40	≥27

** 6 ≤ t < 8.5, 19 J (1/2 size)
8.5 ≤ t ≤ 12.24 J (3/4 size)

*** 6 ≤ t < 8.5, 20 J (1/2 size)
8.5 ≤ t < 11, 30 J (3/4 size)

**** 6 ≤ t < 8.5, 14 J (1/2 size)
8.5 ≤ t < 11, 20 J (3/4 size)

For Heat Treatment: CR = Controlled Rolling
TMCP = Thermo-Mechanical Control Process
QT = Quenching and Tempering

	Tensile Test						Impact Test (2 mm V Charpy)		
	Yield Point or Proof Stress		Tensile Strength (N/mm ²)	Elongation			Test Temperature		Absorbed Energy (J)
	Thickness (mm)	(N/mm ²)		Thickness (mm)	(%)	Test Specimen	Grade	(°C)	
	t ≤16 16 < t ≤40 40 < t	≥245 ≥235 ≥215	400/540	t ≤16 16 < t 40 < t	≥17 ≥21 ≥23	No. 1A No. 1A No. 4	A B C	— 0 0	— ≥27 ≥47
	t ≤16 16 < t ≤40 40 < t ≤75 75 < t	≥365 ≥355 ≥335 ≥325	490/610	t ≤16 16 < t 40 < t	≥15 ≥19 ≥21	No. 1A No. 1A No. 4	A B C	— 0 0	— ≥27 ≥47
	t ≤16 16 < t ≤40 40 < t ≤75 75 < t	≥460 ≥450 ≥430 ≥420	570/720	t ≤16 16 < t 40 < t	≥19 ≥26 ≥20	No. 5 No. 5 No. 4	—	-5	≥47
	t ≤16 16 < t ≤40 40 < t	≥245 ≥235 ≥215	400/540	t ≤16 16 < t 40 < t	≥17 ≥21 ≥23	No. 1A No. 1A No. 4	A B C	— 0 0	— ≥27 ≥47
	t ≤16 16 < t ≤40 40 < t	≥245 ≥235 ≥215	400/540	t ≤16 16 < t 40 < t	≥17 ≥21 ≥23	No. 1A No. 1A No. 4	A B C	— 0 0	— ≥27 ≥47
	t ≤16 16 < t ≤40 40 < t ≤75 75 < t	≥365 ≥355 ≥335 ≥325	490/610	t ≤16 16 < t 40 < t	≥15 ≥19 ≥21	No. 1A No. 1A No. 4	A B C	— 0 0	— ≥27 ≥47
	t ≤16 16 < t ≤40 40 < t ≤75 75 < t	≥365 ≥355 ≥335 ≥325	490/610	t ≤16 16 < t 40 < t	≥15 ≥19 ≥21	No. 1A No. 1A No. 4	A B C	— 0 0	— ≥27 ≥47
	t ≤16 16 < t ≤40 40 < t ≤75 75 < t	≥460 ≥450 ≥430 ≥420	570/720	t ≤16 16 < t 40 < t	≥19 ≥26 ≥20	No. 5 No. 5 No. 4	—	-5	≥47

For Heat Treatment:
AR = As Rolled
N = Normalizing
TMCP = Thermo-Mechanical Control Process
QT = Quenching and Tempering

Steel Plates for Low Temperature Service

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)											
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti
Al-killed Type JFE- LT415TM (6 – 50)	TMCP	≤0.14	≤0.50	0.80/ 1.60	≤0.025	≤0.010	≤0.40	≤1.00	—	—	≤0.08	≤0.02	≤0.015
1.5Ni Type JFE- LT1.5Ni-TM (6 – 40)	TMCP	≤0.10	≤0.40	0.80/ 1.60	≤0.025	≤0.010	≤0.30	1.10/1.60	≤0.30	≤0.20	≤0.08	≤0.02	≤0.015 Sol.Al ≤0.08 Ca ≤0.005

For Heat Treatment: TMCP = Thermo-Mechanical Control Process

High Tensile Strength Steel Plates for Low Temperature Service

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)													
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	B	Ceq	P _{CM}
JFE- HITEN590L (6 – 50)	QT	≤0.16	≤0.55	≤1.50	≤0.025	≤0.010	Ni, Cr, Mo, V etc. are added as required.							≤0.44	—
JFE- HITEN610L (6 – 50)	QT	≤0.16	≤0.55	≤1.50	≤0.025	≤0.010	Ni, Cr, Mo, V etc. are added as required.							≤0.45	—
JFE- HITEN590U2L (6 – 75)	QT	≤0.09	0.15/ 0.55	≤1.60	≤0.025	≤0.010	≤0.30	≤0.70	≤0.30	≤0.30	≤0.06	≤0.03	—	—	≤0.20
JFE- HITEN610U2L (6 – 75)	QT	≤0.09	0.15/ 0.55	≤1.60	≤0.025	≤0.010	≤0.30	≤0.70	≤0.30	≤0.30	≤0.06	≤0.03	—	—	≤0.20
JFE- HITEN690L (6 – 32)	QT	≤0.15	≤0.55	≤1.20	≤0.025	≤0.010	≤0.50	≤1.00	≤0.80	≤0.50	≤0.08	—	≤0.005	≤0.51	—
JFE- HITEN710L (6 – 40)	QT	≤0.15	≤0.55	≤1.20	≤0.025	≤0.010	≤0.50	≤1.00	≤0.80	≤0.60	≤0.08	—	≤0.005	≤0.52	—
JFE- HITEN780L (6 – 50)	QT	≤0.15	≤0.35	≤1.20	≤0.025	≤0.010	≤0.50	≤1.50	≤0.80	≤0.60	≤0.08	—	≤0.005	≤0.53	—
JFE- HITEN780FL (6 – 40)	QT	≤0.16	≤0.60	≤1.00	≤0.025	≤0.010	0.15/ 0.50	—	≤1.20	≤0.60	≤0.10	Zr ≤0.10	≤0.005	—	—
JFE- HITEN780ML (6 – 200)	QT	≤0.16	≤0.35	≤1.20	≤0.020	≤0.010	≤0.50	≤4.00	≤1.00	≤0.60	≤0.10	—	≤0.005	—	—

For Heat Treatment: QT = Quenching and Tempering

	Tensile Test					Bending Test (180°)	Impact Test (2 mm V Charpy)	
	Yield Point or Proof Stress (N/mm ²)	Tensile Strength (N/mm ²)	Elongation			Bending Radius (Test Specimen No. 1)	Test Temperature (°C)	Absorbed Energy (J)
			Thickness (mm)	(%)	Test Specimen			
	≥415	550/690	t ≤16 16<t 20<t	≥20 ≥28 ≥20	No. 5 No. 5 No. 4	—	-60	≥41
	≥365	490/610	t ≤16 16<t 20<t	≥20 ≥28 ≥20	No. 5 No. 5 No. 4	1.5t	-110 *6≤t<8.5 14J(1/2 size)	≥27* 8.5≤t<11 22J(3/4 size)

	Tensile Test						Bending Test (180°)		Impact Test (2 mm V Charpy)	
	Yield Point or Proof Stress		Tensile Strength (N/mm ²)	Elongation			Bending Radius		Test Temperature (°C)	Absorbed Energy (J)
	Thickness (mm)	(N/mm ²)		Thickness (mm)	(%)	Test Specimen	Thickness (mm)	(Test Specimen No. 1)		
	—	≥450	590/710	t ≤16 16<t ≤20 20<t	≥20 ≥28 ≥20	No. 5 No. 5 No. 4	—	1.5t	According to WES3003	
	—	≥490	610/730	t ≤16 16<t ≤20 20<t	≥19 ≥27 ≥19	No. 5 No. 5 No. 4	—	1.5t	According to WES3003	
	—	≥450	590/710	t ≤16 16<t ≤20 20<t	≥20 ≥28 ≥20	No. 5 No. 5 No. 4	—	1.5t	According to WES3003	
	—	≥490	610/730	t ≤16 16<t ≤20 20<t	≥19 ≥27 ≥19	No. 5 No. 5 No. 4	—	1.5t	According to WES3003	
	—	≥570	690/800	t ≤16 16<t ≤20 20<t	≥18 ≥26 ≥18	No. 5 No. 5 No. 4	—	1.5t	According to WES3003	
	—	≥615	710/840	t ≤16 16<t ≤20 20<t	≥17 ≥25 ≥17	No. 5 No. 5 No. 4	—	1.5t	According to WES3003	
	—	≥685	780/930	t ≤16 16<t ≤20 20<t	≥16 ≥24 ≥16	No. 5 No. 5 No. 4	—	1.5t	According to WES3003	
	—	≥685	780/930	t ≤16 16<t ≤20 20<t	≥16 ≥24 ≥16	No. 5 No. 5 No. 4	—	1.5t	According to WES3003	
	t ≤50 50<t	≥685	780/930 760/910	t ≤16 16<t ≤20 20<t	≥16 ≥24 ≥16	No. 5 No. 5 No. 4	t<32 32≤t	1.5t 2.0t	(12<t) -60	≥34

Abrasion-resistant Steel Plates

Standard Type

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)										
		C	Si	Mn	P	S	Thickness (mm)	Cr	Mo	V	Ti	B
JFE-EH-C400 (5 – 101.6)	Controlled heat treatment	≤0.20	≤0.55	≤1.60	≤0.030	≤0.030	5 ≤ t ≤ 50.8 50.8 < t ≤ 101.6	≤0.40 ≤1.20	— ≤0.50	—	≤0.020	≤0.004
JFE-EH-C450 (5 – 101.6)	Controlled heat treatment	≤0.25	≤0.55	≤1.60	≤0.030	≤0.030	5 ≤ t ≤ 50.8 50.8 < t ≤ 101.6	≤0.80 ≤1.50	— ≤0.50	—	≤0.020	≤0.004
JFE-EH-C500 (5 – 101.6)	Controlled heat treatment	≤0.30	≤0.55	≤1.60	≤0.030	≤0.030	5 ≤ t ≤ 50.8 50.8 < t ≤ 101.6	≤0.80 ≤1.50	— ≤0.50	—	≤0.020	≤0.004
JFE-EH-C550 (6 – 32)	Controlled heat treatment	≤0.35	≤0.55	≤1.60	≤0.030	≤0.030	6 ≤ t ≤ 32	≤0.80	—	—	≤0.020	≤0.004
JFE-EH-C600 (6 – 25.4)	Controlled heat treatment	≤0.45	≤0.55	≤1.60	≤0.030	≤0.030	6 ≤ t ≤ 25.4	≤0.80	—	—	≤0.020	≤0.004

High Toughness Type

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)										
		C	Si	Mn	P	S	Thickness (mm)	Cr	Mo	V	Ti	B
JFE-EH-C450LE (5 – 80)	Controlled heat treatment	≤0.23	≤0.55	≤1.60	≤0.020	≤0.010	5 ≤ t ≤ 19 19 < t ≤ 32 32 < t ≤ 50.8 50.8 < t ≤ 80	≤0.80 ≤0.80 ≤1.20 ≤1.50	≤0.35 ≤0.35 ≤0.50 ≤0.50	—	≤0.020	≤0.004
JFE-EH-C500LE (5 – 80)	Controlled heat treatment	≤0.29	≤0.55	≤1.60	≤0.020	≤0.010	5 ≤ t ≤ 19 19 < t ≤ 32 32 < t ≤ 50.8 50.8 < t ≤ 80	≤0.80 ≤0.80 ≤1.20 ≤1.50	≤0.35 ≤0.35 ≤0.50 ≤0.50	—	≤0.020	≤0.004

Super Abrasion Resistant Type

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)										
		C	Si	Mn	P	S	Cr	Mo	V	Ti	B	
JFE-EH-SP (5 – 65)	Controlled heat treatment	≤0.35	≤0.55	≤1.60	≤0.030	≤0.030	0.50/ 1.50	Other elements are added as required.				

Hardness Test	
Brinell hardness [guaranteed] (29.42 kN) Average of 5 points	
	340±30
	400±30
	450±25
	500±40
	550±40
	600±40

		Hardness Test		Impact Test (2 mm V Charpy)			
	Ceq*		Brinell hardness [guaranteed]		Test Temperature		Charpy absorbed energy (J) [guaranteed]**
	Thickness (mm)		Thickness (mm)	(29.42 kN) Average of 5 points	Thickness (mm)	(°C)	
	5 ≤ t ≤ 19 19 < t ≤ 32 32 < t ≤ 60 60 < t ≤ 101.6	≤ 0.40 ≤ 0.43 ≤ 0.58 ≤ 0.73	5 ≤ t ≤ 101.6	400 ± 30	5 ≤ t ≤ 12 12 < t ≤ 101.6	— -40	— ≥ 27
	5 ≤ t ≤ 19 19 < t ≤ 32 32 < t ≤ 50.8 50.8 < t ≤ 80	≤ 0.50 ≤ 0.53 ≤ 0.65 ≤ 0.75	5 ≤ t ≤ 50.8 50.8 < t ≤ 80	450 ± 25 410 – 475	5 ≤ t ≤ 12 12 < t ≤ 80	— -40	— ≥ 27
	5 ≤ t ≤ 19 19 < t ≤ 32 32 < t ≤ 50.8 50.8 < t ≤ 80	≤ 0.55 ≤ 0.58 ≤ 0.70 ≤ 0.78	5 ≤ t ≤ 50.8 50.8 < t ≤ 80	500 ± 40 450 – 540	5 ≤ t ≤ 12 12 < t ≤ 80	— -40	— ≥ 21

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

** In accordance with JIS Z 2242, JIS G 0416

Hardness Test	
Brinell hardness [guaranteed] (29.42 kN) Average of 5 points	
	≥ 401

Steel Plates for Frame of Building

TMCP Steel Plates

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)											PCM		
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb		Ceq	
														Thickness (mm)	
HBL™325B (40.1 – 100)	TMCP	t ≤ 50: ≤ 0.18 50 < t: ≤ 0.20	≤ 0.55	≤ 1.60	≤ 0.030	≤ 0.015	Other elements are added as required.					40 < t ≤ 50 50 < t ≤ 100	≤ 0.38	≤ 0.24	
≤ 0.020					≤ 0.008	≤ 0.40							≤ 0.26		
HBL™355B (40.1 – 100)	TMCP	≤ 0.20	≤ 0.55	≤ 1.60	≤ 0.030	≤ 0.015	Other elements are added as required.					40 < t ≤ 50 50 < t ≤ 100	≤ 0.40	≤ 0.26	
HBL™355C (40.1 – 100)					≤ 0.020	≤ 0.008							≤ 0.42	≤ 0.27	
HBL™385B-L (12 – 19)	TMCP	≤ 0.20	≤ 0.55	≤ 1.60	≤ 0.030	≤ 0.015	Other elements are added as required.					12 ≤ t ≤ 19	≤ 0.44	≤ 0.29	
HBL™385B (19 – 100)					≤ 0.030	≤ 0.015						19 ≤ t ≤ 50 50 < t ≤ 100	≤ 0.40	≤ 0.26	
HBL™385C (19 – 100)					≤ 0.020	≤ 0.008									≤ 0.42
HBL™440B (19 – 100)	TMCP	≤ 0.12	≤ 0.55	≤ 1.60	≤ 0.030	≤ 0.008	Other elements are added as required.					19 ≤ t ≤ 40 40 < t ≤ 100	≤ 0.44 ≤ 0.47	≤ 0.22	
HBL™440C (19 – 100)	TMCP	≤ 0.12	≤ 0.55	≤ 1.60	≤ 0.020	≤ 0.008	Other elements are added as required.					19 ≤ t ≤ 40 40 < t ≤ 100	≤ 0.44 ≤ 0.47	≤ 0.22	
HBL™630B-L (12 – 40)	TMCP	≤ 0.12	≤ 0.55	≤ 2.5	≤ 0.030	≤ 0.015	Other elements are added as required.					12 ≤ t ≤ 40	≤ 0.60	≤ 0.30	
HBL™630C-L (12 – 40)					≤ 0.015	≤ 0.008									

High Performance 590 N/mm² Steel Plates for Frame of Building

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)											PCM		
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb		Ceq	
														Thickness (mm)	
SA440B (19 – 100)	QT	≤ 0.18	≤ 0.55	≤ 1.60	≤ 0.030	≤ 0.008	Other elements are added as required.					t ≤ 40 40 < t	≤ 0.44	≤ 0.28	
SA440C (19 – 100)		≤ 0.18	≤ 0.55	≤ 1.60	≤ 0.020	≤ 0.008							≤ 0.47	≤ 0.30	
SA440B-U (19 – 100)	QT	≤ 0.12	≤ 0.55	≤ 1.60	≤ 0.030	≤ 0.008	Other elements are added as required.					t ≤ 40 40 < t	≤ 0.44	≤ 0.22	
SA440C-U (19 – 100)		≤ 0.12	≤ 0.55	≤ 1.60	≤ 0.020	≤ 0.008							≤ 0.47	≤ 0.22	

High Performance 780 N/mm² Steel Plates for Frame of Building

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)											PCM		
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb		Ceq	
														Thickness (mm)	
JFE-HITEN780TB (22 – 100)	QT	≤ 0.18	≤ 0.55	≤ 1.60	≤ 0.030	≤ 0.015	Other elements are added as required.					22 ≤ t ≤ 100	≤ 0.60	≤ 0.30	
JFE-HITEN780TC (22 – 100)		≤ 0.18	≤ 0.55	≤ 1.60	≤ 0.015	≤ 0.008									

Fire Resistant Steel Plates for Frame of Building

Designation (Thickness, mm)	Heat Treatment	Equivalent Standard	Proof Stress (0.2% strain) at 600°C (N/mm ²)		
			t ≤ 40	40 < t ≤ 75	75 < t ≤ 100
			HBL™325B-FR HBL™325C-FR (40.1 – 100)	TMCP	Authorized by Minister of Land, Infrastructure and Transport
HBL™355B-FR HBL™355C-FR (40.1 – 100)	TMCP	Authorized by Minister of Land, Infrastructure and Transport	—	≥ 237	
SN400B,C-FR SM400A,B-FR (6 – 100)	AR or N	JIS G 3136 JIS G 3106	≥ 157	≥ 143	
SN490B,C-FR SM490A,B-FR (6 – 100)	AR or N	JIS G 3136 JIS G 3106	≥ 217	≥ 197	
SM520B-FR (6 – 100)	AR or N	JIS G 3106	≥ 237	≥ 233	≥ 217

For Heat Treatment:
AR = As Rolled
N = Normalizing
TMCP = Thermo-Mechanical Control Process

	Tensile Test					Yield Ratio (%)	Through Thickness Tensile Test Reduction of area (%)	Impact Test (2 mm V Charpy)	
	Yield Point or Proof Stress (N/mm ²)	Tensile Strength (N/mm ²)	Elongation		Test Specimen			Test Temperature (°C)	Absorbed Energy (J)
			Thickness (mm)	(%)					
325/445	490/610	t ≤ 50 40 < t	≥ 21 ≥ 23	No. 1A No. 4	≤ 80	— ≥ 25 (Ave. of 3 tests) ≥ 15 (Each value)	0	≥ 27	
355/475	520/640	t ≤ 50 40 < t	≥ 19 ≥ 21	No. 1A No. 4	≤ 80	— ≥ 25 (Ave. of 3 tests) ≥ 15 (Each value)	0	≥ 27	
385/505	550/670	t ≤ 50 40 < t	≥ 26 ≥ 20	No. 5 No. 4	≤ 80	— ≥ 25 (Ave. of 3 tests) ≥ 15 (Each value)	0	≥ 70	
440/540	590/740	19 ≤ t ≤ 32 32 < t ≤ 40 20 < t ≤ 50	≥ 15 ≥ 16 ≥ 20	No. 1A No. 1A No. 4	≤ 80	— ≥ 25 (Ave. of 3 tests) ≥ 15 (Each value)	0	≥ 70	
630/750	780/930	12 ≤ t ≤ 16 16 < t ≤ 40 20 < t ≤ 40	≥ 16 ≥ 24 ≥ 16	No. 5 No. 5 No. 4	≤ 85	— ≥ 25 (Ave. of 3 tests) ≥ 15 (Each value)	0	≥ 47	

For Heat Treatment:
TMCP = Thermo-Mechanical Control Process

	Tensile Test					Yield Ratio (%)	Through Thickness Tensile Test Reduction of area (%)	Impact Test (2 mm V Charpy)	
	Yield Point or Proof Stress (N/mm ²)	Tensile Strength (N/mm ²)	Elongation		Test Specimen			Test Temperature (°C)	Absorbed Energy (J)
			Thickness (mm)	(%)					
440/540	590/740	t ≤ 50 40 < t	≥ 26 ≥ 20	No. 5 No. 4	≤ 80	— ≥ 25 (Ave. of 3 tests) ≥ 15 (Each value)	0	≥ 47	
440/540	590/740	t ≤ 50 40 < t	≥ 26 ≥ 20	No. 5 No. 4	≤ 80	— ≥ 25 (Ave. of 3 tests) ≥ 15 (Each value)	0	≥ 47	

For Heat Treatment:
QT = Quenching and Tempering

	Tensile Test					Yield Ratio (%)	Through Thickness Tensile Test Reduction of area (%)	Impact Test (2 mm V Charpy)	
	Yield Point or Proof Stress (N/mm ²)	Tensile Strength (N/mm ²)	Elongation		Test Specimen			Test Temperature (°C)	Absorbed Energy (J)
			Thickness (mm)	(%)					
630/750	780/930	t ≤ 50 t ≤ 100	≥ 24 ≥ 16	No. 5 No. 4	≤ 85	— ≥ 25 (Ave. of 3 tests) ≥ 15 (Each value)	0	≥ 47	

For Heat Treatment:
QT = Quenching and Tempering

Low Yield Strength Steel Plates for Frame of Building

Designation (Thickness, mm)	Tensile Test				Impact Test (2 mm V Charpy)			
	Lower Yield Point or Proof Stress (N/mm ²)	Tensile Strength (N/mm ²)	Yield Ratio (%)	Elongation (%)	Test Temperature		Absorbed Energy (J)	
					Test Specimen	Thickness (mm)		(°C)
JFE-LY100 (6 – 40)	80/120	200/300	≤ 60	≥ 50	No. 5	12 < t	0	≥ 27
JFE-LY225 (6 – 40)	205/245	300/400	≤ 80	≥ 40	No. 5	12 < t	0	≥ 27

Sea Water Corrosion Resistant Steel Plates

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)										
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V or Nb	Al
JFE-MARIN™400 (6 – 40)	AR or N	≤0.15	≤1.00	≤1.40	≤0.030	≤0.020	0.20/ 0.60	≤0.50	0.50/ 1.50	—	≤0.10	≤0.55
JFE-MARIN™490 (6 – 40)	AR, N or TMCP	≤0.15	≤1.00	≤1.50	≤0.030	≤0.020	0.20/ 0.60	≤0.50	0.50/ 1.50	—	≤0.10	≤0.55
JFE-MARIN™490Y (6 – 40)	AR, N or TMCP	≤0.15	≤1.00	≤1.50	≤0.030	≤0.020	0.20/ 0.60	≤0.50	0.50/ 1.50	—	≤0.10	≤0.55

Corrosion Resistant Steel Plates

Melted Zinc Corrosion Resistant Steel Plates

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)				
		C	Si	Mn	P	S
JFE-ZP (6 – 100)	AR	≤0.12	≤0.03	≤0.50	≤0.030	≤0.030

For Heat Treatment: AR = As Rolled

Sulfuric Acid Resistant Steel Plates

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)										
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Sb	Sn
JFE-ASA400D (6 – 50)	AR or N	≤0.14	≤0.55	0.30/ 0.70	≤0.030	≤0.020	0.25/ 0.50	≤0.50	—	—	0.05/ 0.20	≤0.10
JFE-ASA400H (6 – 50)	AR or N	≤0.14	≤0.55	0.30/ 0.70	≤0.030	≤0.020	0.25/ 0.50	≤0.50	0.50/ 1.00	≤0.10	—	—
JFE-ASA400W (6 – 50)	AR or N	≤0.14	≤0.55	0.30/ 0.70	≤0.030	≤0.020	0.25/ 0.50	≤0.50	0.50/ 1.00	≤0.10	0.05/ 0.20	≤0.10
JFE-ASA440D (6 – 25.4)	AR or N	≤0.17	≤0.55	0.30/ 0.70	≤0.030	≤0.020	0.25/ 0.50	≤0.50	—	—	0.05/ 0.20	≤0.10
JFE-ASA440H (6 – 25.4)	AR or N	≤0.17	≤0.55	0.30/ 0.70	≤0.030	≤0.020	0.25/ 0.50	≤0.50	0.50/ 1.00	≤0.10	—	—
JFE-ASA440W (6 – 25.4)	AR or N	≤0.17	≤0.55	0.30/ 0.70	≤0.030	≤0.020	0.25/ 0.50	≤0.50	0.50/ 1.00	≤0.10	0.05/ 0.20	≤0.10

Hydrogen Induced Crack Resistant Steel Plates

Designation (Thickness, mm)	Heat Treatment	Chemical Composition (%)							Tensile Test			Bending Test (180°)
		C	Si	Mn	P	S	Cu	others	Yield Point or Proof Stress (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Bending Radius (Test Specimen No. 1)
JFE-AH1 (6 – 200)	According to applicable standard	According to applicable standard				≤0.005	0.25/ 0.40	—	According to applicable standard			According to applicable standard
JFE-AH2 (6 – 200)	According to applicable standard	According to applicable standard				<0.001	—	Ca treatment	According to applicable standard			According to applicable standard

	Tensile Test					Bending Test (180°)	Impact Test (2 mm V Charpy)			
	Yield Point or Proof Stress		Tensile Strength (N/mm ²)	Elongation		Bending Radius (Test Specimen No. 1)	Test Temperature		Absorbed Energy	
	Thickness (mm)	(N/mm ²)		(%)	Test Specimen		Thickness (mm)	(°C)	Grade	(J)
	6 ≤ t ≤ 16 16 < t ≤ 40	≥245 ≥235	400/ 510	≥18 ≥22	No. 1A No. 1A	1.0t	12 < t	0	A B C	— ≥27 ≥47
	6 ≤ t ≤ 16 16 < t ≤ 40	≥325 ≥315	490/ 610	≥17 ≥21	No. 1A No. 1A	1.5t	12 < t	0	A B C	— ≥27 ≥47
	6 ≤ t ≤ 16 16 < t ≤ 40	≥365 ≥355	490/ 610	≥15 ≥19	No. 1A No. 1A	1.5t	12 < t	0	A B	— ≥27

For Heat Treatment: AR = As Rolled
N = Normalizing
TMCP = Thermo-Mechanical Control Process

	Tensile Test						Bending Test (180°)
	Yield Point or Proof Stress		Tensile Strength (N/mm ²)	Elongation			Bending Radius (Test Specimen No. 1)
	Thickness (mm)	(N/mm ²)		Thickness (mm)	(%)	Test Specimen	
	t ≤ 16 16 < t ≤ 40 40 < t	≥245 ≥235 ≥215	≥400	t ≤ 16 16 < t	≥18 ≥21	No. 1A No. 1A	1.5t
	t ≤ 16 16 < t ≤ 40 40 < t	≥245 ≥235 ≥215	≥400	t ≤ 16 16 < t	≥18 ≥21	No. 1A No. 1A	1.5t
	t ≤ 16 16 < t ≤ 40 40 < t	≥245 ≥235 ≥215	≥400	t ≤ 16 16 < t	≥18 ≥21	No. 1A No. 1A	1.5t
	—	≥265	≥440	t ≤ 16 16 < t	≥17 ≥21	No. 1A No. 1A	1.5t
	—	≥265	≥440	t ≤ 16 16 < t	≥17 ≥21	No. 1A No. 1A	1.5t
	—	≥265	≥440	t ≤ 16 16 < t	≥17 ≥21	No. 1A No. 1A	1.5t

For Heat Treatment: AR = As Rolled
N = Normalizing

Pure Iron Plates for Magnetic Shielding

Designation (Thickness, mm)	Chemical Composition (%)				
	C	Si	Mn	P	S
JFE-EFE (6 – 290)	≤0.010	≤0.05	≤0.20	≤0.015	≤0.015

Steel Plates for Mold

Designation (Thickness, mm)	Chemical Composition (%)							
	C	Si	Mn	P	S	Cr	Mo	V
JFE-MD1 (6 – 265)	0.52/ 0.58	0.15/ 0.35	0.60/ 0.90	≤0.030	≤0.035	—	—	—
JFE-MD3 (6 – 260)	0.37/ 0.44	0.15/ 0.35	0.55/ 0.90	≤0.030	≤0.035	0.85/ 1.25	0.15/ 0.35	—
JFE-MD5 (6 – 260)	0.28/ 0.33	0.15/ 0.35	0.40/ 0.90	≤0.030	≤0.035	0.80/ 1.50	0.15/ 0.40	0.05/ 0.07

Steel Plates for Hot-dip Zinc-coated Tower Structure

Designation (Thickness, mm)	Chemical Composition (%)										
	C	Si	Mn	P	S	Cu, Ni, Cr, Mo, V, Nb, Ti	Zr	B	Ceq	CEZ [*]	
JFE-HITEN 590AZ (6 – 25)	≤0.12	≤0.40	≤2.00	≤0.030	≤0.015	Added as required on condition that Nb+V+Ti≤0.15	≤0.040	≤0.0002	≤0.40	≤0.44	

Steel Plates for Rocket

Designation (Thickness, mm)	Chemical Composition (%)													
	C	Si	Mn	P	S	Ni	Cr	Co	Mo	Ti	Al	Zn	B	V
JFE-HT140NP (2 – 30)	0.14/ 0.18	≤0.35	0.60/ 0.90	≤0.010	≤0.010	3.90/ 4.30	1.60/ 2.00	—	0.45/ 0.65	—	—	—	—	0.07/ 0.13
JFE-HT210P (by agreement)	≤0.005	≤0.05	≤0.07	≤0.005	≤0.005	17.50/ 18.50	≤0.50	8.30/ 9.30	4.70/ 5.50	0.40/ 0.60	0.05/ 0.10	0.01/ 0.04	0.001/ 0.005	—



	Tensile Test					Impact Test (2 mm V Charpy)		
	Yield Point or Proof Stress (N/mm ²)	Tensile Strength (N/mm ²)	Elongation			Test Temperature		Absorbed Energy (J)
			Thickness (mm)	(%)	Test Specimen	Thickness (mm)	(°C)	
	≥440	590/ 740	t ≤16 16 < t	≥19 ≥26	No. 5 No. 5	12 < t	-5	≥47

*CEZ (Carbon Equivalent Zinc)=C+Si/17+Mn/7.5+Cu/13+Ni/17+Cr/4.5+Mo/3+V/1.5+Nb/2+Ti/4.5+420B

	Thickness (mm)	Tensile Test			Bending Test (180°)	Hardness Test
		0.2% Proof Stress (kgf/mm ²)	Tensile Strength (kgf/mm ²)	Elongation (%)	Bending Radius ($\left. \begin{matrix} \text{Test} \\ \text{Specimen} \\ \text{No. 1} \end{matrix} \right\}$)	HRC
	2.0 ≤ t ≤ 2.5	—	≤125	≥8	7.5t	≤39
	t = 4.0	≤90	≤105	≥13	2.0t	≤34
	6.5 ≤ t ≤ 15.0	≤90	≤105	≥13	3.0t	≤34
	t = 30.0	—	≤120	≥9	3.0t	≤37
	—	185/ 205	190/ 215	≥7	—	—

APPROVED OR AUTHORIZED PRODUCTS

Ship's Class Standards

Hull Structural Steel Plates

Society	Grade
ABS	A, B, D, E AH32, DH32, EH32, FH32 AH36, DH36, EH36, FH36 AH40, DH40, EH40, FH40 AH47, DH47, EH47
BV	A, B, D, E AH32, DH32, EH32, FH32 AH36, DH36, EH36, FH36 AH40, DH40, EH40, FH40 EH47
CCS	A, B, D, E A32, D32, E32, F32 A36, D36, E36, F36 A40, D40, E40, F40 AH47, DH47, EH47
CR	A, B, D, E AH32, DH32, EH32, FH32 AH36, DH36, EH36, FH36 AH40, DH40, EH40, FH40
DNV GL	VL A, VL B, VL D, VL E VL A27S, VL D27S, VL E27S VL A32, VL D32, VL E32, VL F32 VL A36, VL D36, VL E36, VL F36 VL A40, VL D40, VL E40, VL F40 VL A47, VL D47, VL E47 VL D420, VL E420, VL F420
KR	RA, RB, RD, RE RA32, RD32, RE32 RA36, RD36, RE36 RA40, RD40, RE40 RA47, RD47, RE47
LR	A, B, D, E AH27S, DH27S, EH27S AH32, DH32, EH32, FH32 AH36, DH36, EH36, FH36 AH40, DH40, EH40, FH40 AH47, DH47, EH47
RS	A, B, C, D AH32, DH32, EH32, FH32 AH36, DH36, EH36, FH36 AH40, DH40, EH40, FH40

Society	Grade
NK	KA, KB, KD, KE KA32, KD32, KE32, KF32 KA36, KD36, KE36, KF36 KA40, KD40, KE40, KF40 KE47
RINA	A, B, D, E A32, D32, E32, F32 A36, D36, E36, F36 A40, D40, E40, F40
ZC	A, B, D, E A32, D32, E32 A36, D36, E36

Steel Plates for Low Temperature Service

Society	Grade
ABS	V-OXX VH-OXX
BV	410LF, 460LF
DNV GL	VL2-2 VL2-3 VL2-4 VL2-4L VL4-2 VL4-3 VL4-4 VL4-4L
LR	LT-AH27S, DH27S, EH27S, FH27S LT-AH32, DH32, EH32, FH32 LT-AH36, DH36, EH36, FH36 LT-AH40, DH40, EH40, FH40
NK	KL24A, KL24B KL33 KL37 K5T-50Q KL9N60

■ Steel Plates for Boiler & Pressure Vessels

Society	Grade
ABS	MA, MB, MC, MD, ME, MF, MG H, I, J
BV	360, 410, 460, 510 0.3Mo 1Mn0.5Mo
CR	1-410, 1-450, 1-480 2-450, 2-480 0-235, 0-315, 0-355
DNV GL	VL360-0A, -0N, -1FN VL410-0A, -0N, -1FN VL490-0N, -1FN VL510-1FN VL 0.3Mo VL 1Cr0.5Mo VL 2.25Cr1Mo
KR	RSP42, 46, 49 RSP46A, 49A RPV24, 32, 36, 46, 50
LR	360AR, 410AR, 460AR 360, 410, 460, 490 360FG, 410FG, 460FG, 490FG
NK	KP42, KP46, KP49 KPA46, KPA49 KPV24, KPV32, KPV36, KPV46 KPV50

■ Stainless Steel Plates

Society	Grade
DNV GL	VL304L VL316L, VL316LN VL317L, VL317LN VL321 VL347
LR	304L, 304LN 316L, 316LN 317L, 317LN
NK	304, 304Mod, 304Mod1 304L, 304LMod 309S, 310S 316, 316Mod 316L, 316LMod, 316LN 317 317L, 317LN

■ High-Strength Quenched & Tempered Steel Plates

Society	Grade
ABS	AQ51, DQ51, EQ51, FQ51 AQ56, DQ56, EQ56, FQ56 AQ63, DQ63, EQ63 AQ70, DQ70, EQ70, FQ70
LR	AH42, DH42, EH42 DH46, EH46 DH50, EH50 DH55, EH55 DH62, EH62 DH69, EH69
NK	KA420, KD420, KE420 KA460, KD460, KE460 KA500, KD500, KE500 KA550, KD550, KA620, KD620, KE620 KA690, KD690, KE690
DNV GL	VLD420, VLE420 VLA500, VLD500, VLE500 VLA550, VLD550, VLE550 VLA620, VLD620, VLE620 VLA690, VLD690, VLE690, VLF690 VLDW420, VLEW420

Japan Welding Engineering Society (WES)

JFE BRAND	WES3001	
	Grade	Thickness (mm)
JFE-HITEN540S	HW355RA	≤30
JFE-HITEN590SB	HW450NA	≤26
JFE-HITEN590	HW450QB	≤100
JFE-HITEN590L	HW450QB	≤50
JFE-HITEN590U2	HW450QB	≤75
JFE-HITEN590E	HW450QB	≤75
JFE-HITEN590U2L	HW450QB	≤75
JFE-HITEN610	HW450QB	≤100
JFE-HITEN610U2	HW490QB	≤75
JFE-HITEN610E	HW490QB	≤75
JFE-HITEN610U2L	HW490QB	≤75
JFE-HITEN610L	HW450QB	≤50
JFE-HITEN690	HW550QB	≤50
JFE-HITEN690L	HW550QB	≤40
JFE-HITEN710	HW620QB	≤50
JFE-HITEN780F	HW685QB	≤50
JFE-HITEN780M	HW685QB	≤100
JFE-HITEN980	HW885QB	≤100

JFE BRAND	WES3009	
	Grade	Thickness (mm)
JFE-HITEN590U2	HW450QCF	≤75
JFE-HITEN610U2	HW490QCF	≤75
JFE-HITEN590E	HW450QCF	≤75
JFE-HITEN610E	HW490QCF	≤75
JFE-HITEN590U2L	HW450QCF	≤75
JFE-HITEN610U2L	HW490QCF	≤75

JFE Brands Compliant with Structural Standards for Cranes and Mobile Cranes

Class	Min. Tensile Strength (N/mm ²)	JFE BRAND	Thickness (mm)
PS-2	450 ≤ TS < 550	JFE-MARIN™490YA	6 ≤ t ≤ 40
		JFE-MARIN™490B	6 ≤ t ≤ 40
		JFE-HITEN540SB	6 ≤ t ≤ 30
PS-3	550 ≤ TS < 650	JFE-HITEN590	6 ≤ t ≤ 150
		JFE-HITEN590SA	6 ≤ t ≤ 40
		JFE-HITEN590SB	6 ≤ t ≤ 40
		JFE-HITEN590SL	6 ≤ t ≤ 50
PS-4	650 ≤ TS < 750	JFE-HITEN690S	6 ≤ t ≤ 25
		JFE-HITEN690M	6 ≤ t ≤ 100
		JFE-HITEN710	6 ≤ t ≤ 100
		JFE-HITEN710M	6 ≤ t ≤ 100
PS-5	750 ≤ TS < 850	JFE-HITEN780S	6 ≤ t ≤ 50
		JFE-HITEN780F	6 ≤ t ≤ 100
		JFE-HITEN780M	6 ≤ t ≤ 100
		JFE-HITEN780LE	6 ≤ t ≤ 32
PS-7	950 ≤ TS < 1050	JFE-HITEN980S	6 ≤ t ≤ 50
		JFE-HYD960LE	6 ≤ t ≤ 63.5

JFE BRAND	WES3003
JFE-HITEN590L	LT450-VI-65G-25A
JFE-HITEN590U2L	LT450-75-50G
JFE-HITEN610L	LT490-III-80G-50A
	LT490-IV-70G-40A
	LT490-V-60G-20A
	LT490-VI-60G-20A
JFE-HITEN610L	LT490-75-50G
JFE-HITEN690L	LT550-I-120G-90A
	LT550-II-120G-80A
	LT550-IV-80G-40A
JFE-HITEN710L	LT63-I-90G-60A
	LT63-III-80G-50A
	LT63-V-70G-40A
JFE-HITEN780L	LT70-II-60G-40A
	LT70-IV-50G-30A
	LT70-VI-50G-30A
JFE-HITEN780FL	LT685-V-90G-40A
JFE-LT1.5Ni-TM	LT370-V-140G-120A

Ministerial Certifications

JFE BRAND	MLIT* Minister's Certification No.
HBL™325B	(Kurashiki District) MSTL-0128
HBL™325C	(Keihin District)
HBL™355B	MSTL-0129
HBL™355C	(Fukuyama District) MSTL-0135
HBL™385B-L	MSTL-0303
HBL™385B	(Keihin District) MSTL-0131
HBL™385C	(Fukuyama District) MSTL-0130
HBL™440B	MSTL-0410
HBL™440C	
SA440B	(Keihin/ Fukuyama District)
SA440C	MSTL-9005
SA440B-U	(Kurashiki District)
SA440C-U	MSTL-9004
HBL™630B-L	MSTL-0243
HBL™630C-L	
JFE-HITEN780TB	MSTL-0205
JFE-HITEN780TC	
JFE-LY100	(Keihin District) MSTL-0132
JFE-LY225	(Fukuyama District) MSTL-0133

*MLIT: Ministry of Land, Infrastructure, Transport and Tourism

MAXIMUM AVAILABLE SIZES

Non-Heat Treated Products

Product Length: m

Thickness (mm)	Width (mm)																																				
	1000 to 1400	1401 to 1600	1601 to 1800	1801 to 2000	2001 to 2200	2201 to 2400	2401 to 2600	2601 to 2800	2801 to 3000	3001 to 3200	3201 to 3400	3401 to 3600	3601 to 3800	3801 to 4000	4001 to 4200	4201 to 4400	4401 to 4600	4601 to 4800	4801 to 5000	5001 to 5200	5201 to 5300	5301 to 5350															
6.0 – 6.9																	22	22	19	16	13.5	13.5															
7.0 – 9.0																	25		22	20	16	13.5	13.5														
9.1 – 11.9																			20	20	20	16															
12.0 – 13.9																					25	22	16														
14.0 – 25.0																							25	16													
25.1 – 28.0																	27				25	16															
28.1 – 32.0																					25		24	23	20	16	16										
32.1 – 38.0																					25		24	23	22	21	20	19	18	16	16						
38.1 – 45.0																							24	23	23	20	19	19	18	17	16	16	16				
45.1 – 50.0																	25						23	22	21	20	20	18	17	16	16	15	14	14	14		
50.1 – 55.0																					24		24	21	21	20	19	18	18	16	16	15	14	14	13	13	13
55.1 – 60.0																					24		22	21	19	19	17	16	16	15	14	13	13	12	12	12	11
60.1 – 65.0																			24		23	21	20	18	18	17	16	15	15	14	13	12	12	11	11	10	9.5
65.1 – 70.0																	24		24	22	21	19	18	17	16	15	14	14	13	12	12	11	11	10	10	9.5	9.5
70.1 – 75.0	24	23	24	23	21	20	18	17	15	15	15	14	13	13	12	11	11	10	10	9.2	9	8.5	8.5														
75.1 – 80.0	23	23	22	21	21	19	18	17	15	14	14	13	12	12	11	11	10	10	9.6	9.2	9	8.5	8.5														
80.1 – 90.0	20	20	20	19	19	17	16	15	14	13	12	11	11	10	10	9.7	9.2	8.8	8.5	8.2	8	7.5	7.5														
90.1 – 100.0	18	18	18	17	17	15	14	13	12	11	11	10	10	9.6	9.1	8.7	8.3	8	7.6	7.3	Not available																
100.1 – 110.0	16	16	16	16	15	14	13	12	11	10	10	9.7	9.1	9	8.3	8	7.6	7.2	7	6.7				5.8													
110.1 – 120.0	15	15	15	14	14	13	12	11	10	10	9.4	8.8	8.4	8	7.6	7.2	6.9	6.6	6	6	Not available																
120.1 – 130.0	14	14	14	13	13	12	11	10	9.8	9.2	8.6	8.2	7.7	7.3	7.0	6.7	6.0	6	6	5.1				5.3													
130.1 – 140.0	13	13	13	12	12	11	10	9.7	9	8.5	8	7.5	7.1	7	6	6	5.1	5.1	5.1	5.1	Not available																
140.1 – 150.0	12	12	12	11	11	10	9.7	9.1	8.4	7.9	7.4	7	6.7	6	6	5	5	5	5	Not available																	
150.1 – 160.0	11	11	11	10	10	9.9	9.1	8.5	7.9	7.4	7.0	6.6	6.2	6	6	5	5	Not available																			
160.1 – 170.0	10	10	10	10	10	9.3	8.6	8	7.4	6.7	6.6	6.0	5.7	6	5.1	5	5				4.4	Not available															
170.1 – 180.0	10	10	10	9	9.4	8.8	8.1	7.6	7.1	6.6	6.2	5.1	5	5	4.4	Not available																					
180.1 – 190.0	9	9	9	9	8.9	8.3	7.7	7.1	6.7	6.7	5.8	5.4	5.1	4.8	4.5				4.3	Not available																	
190.1 – 200.0	9	8.2	8.2	8	8.5	7.9	7.3	6.8	6.8	5.9	5.5	5.1	4.8	4.6	4.3	4.1	Not available																				

- (Notes) 1. In case of the diagonal-lined column "A-B", "A" shows the maximum product length. And, the product length between "B" and 6.1 m can not be provided.
 2. The minimum product size is as follows: 1 m wide and 3 m long.
 3. Please consult with us prior to ordering the product width between 5,201 and 5,350 mm.
 4. Product with 30 m in length for limited thickness and width is available. Please consult with us.
 5. For carbon steel plates for machine structural use, and for chromium-molybdenum steel plates, the minimum width is 1,500 mm.

MAXIMUM AVAILABLE SIZES

Heat Treated Products

Product Length: m

Width (mm) \ Thickness (mm)	1000 to 1600	1601 to 1800	1801 to 2000	2001 to 2200	2201 to 2400	2401 to 2600	2601 to 2800	2801 to 3000	3001 to 3200	3201 to 3400	3401 to 3600	3601 to 3800	3801 to 4000	4001 to 4200	4201 to 4400	4401 to 4600	4601 to 4800	4801 to 5000	5001 to 5200	5201 to 5300	5301 to 5350				
6.0 – 6.9										22	20	15	13	Not available											
7.0 – 7.9											24	22	20	15	Not available										
8.0 – 8.9												22	18	16	13	11	Not available								
9.0 – 9.9														22	20	16	12	Not available							
10.0 – 11.9																	22	20	18	Not available					
12.0 – 13.9																			22	Not available					
14.0 – 26.0										25	Not available														
26.1 – 28.0																									
28.1 – 30.0																		24	24	22	Not available				
30.1 – 35.0														24	24	23	22	21	21	20	Not available				
35.1 – 40.0														24	23	22	21	20	19	18	17	Not available			
40.1 – 45.0														23	22	20	19	19	18	17	16	16	15		
45.1 – 50.0														23	22	20	19	18	17	17	16	15	15	14	14
50.1 – 60.0															24	24	22	20	19	18	17	16	14	11	
60.1 – 70.0		23	20	24	22	20	19	17	16	15	14	14	13	12	12	11	11	10	10	10	10	10			
70.1 – 80.0	22	20	18	21	19	18	16	15	14	13	13	12	11	11	10	10	9.7	9.3	8.9	8.7	Not available				
80.1 – 90.0	20	18	16	19	17	16	14	13	13	12	11	10	10	9.8	9.4	8.9	8.5	8.3	7.9	Not available					
90.1 – 100.0	18	16	14	17	15	14	13	12	11	10	10	9.8	9.3	8.8	8.4	8.0	7.7	7.3	7.0	Not available					
100.1 – 110.0	16	14	13	15	14	13	12	11	10	9.9	9.4	8.8	8.4	8.0	7.6	7.3	6.9 / 6.0	6.6 / 5.7	6.4 / 5.5	Not available					
110.1 – 120.0	15	13	12	14	13	11	11	10	9.7	9.1	8.5	8.1	7.7	7.3	6.9 / 6.0	6.6 / 5.7	6.3 / 5.8	5.2	Not available						
120.1 – 130.0	13	12	11	13	11	11	10	9.5	8.9	8.3	7.9	7.3	7.0	6.7	6.4 / 5.5	5.2	5.0	Not available							
130.1 – 140.0	11	10	9.7	11	10	9.7	9.4	8.7	8.2	7.7	7.2	6.8	6.5 / 5.6	5.3	4.8	Not available									
140.1 – 150.0	10	10	9.6	10	9.7	9.4	8.7	8.1	7.6	7.1	6.7	6.4 / 5.5	5.2	4.9	Not available										
150.1 – 160.0	9.7	9.7	9.0	9.7	9.6	8.8	8.2	7.6	7.1	6.7 / 5.7	6.3 / 5.3	5.1	4.8	Not available											
160.1 – 170.0	9.4	9.4	8.4	9.7	9.0	8.3	7.7	7.1	6.7 / 5.7	6.3 / 5.4	5.1	Not available													
170.1 – 180.0	8.9	8.9	7.9	9.1	8.5	7.8	7.3	6.8	6.3 / 5.5	5.9	Not available														
180.1 – 190.0	8.4	8.4	7.5	8.6	8.0	7.4	6.8	6.3 / 5.5	5.1	Not available															
190.1 – 200.0	7.9	7.9	7.1	8.2	7.6	7.0	6.5 / 5.6	5.2	4.8	Not available															

Negotiable range

- (Notes)
- In case of the diagonal-lined column $\begin{matrix} A \\ \diagdown \\ B \end{matrix}$, "A" shows the maximum product length. And, the product length between "B" and 6.1m can not be provided.
 - The minimum product size is as follows: 1 m wide and 3 m long.
 - Please consult with us prior to ordering the product width between 5,201 and 5,350 mm.
 - For carbon steel plates for machine structural use, and for chromium-molybdenum steel plates, the minimum width is 1,500 mm.

Abrasion-Resistant Steel Plates

Product Length: m

Width (mm) \ Thickness (mm)	1501 to 1800	1801 to 2000	2001 to 2200	2201 to 2400	2401 to 2500	2501 to 2800	2801 to 3048	3049 to 3200	3201 to 3400	3401 to 3600	3601 to 3800	3801 to 4000	4001 to 4200	4201 to 4400	4401 to 4600	4601 to 4800	4801 to 5000	5001 to 5200	5201 to 5300
5.0 – 5.9	9	9	9	9	9														
6.0 – 6.9		16	14	12	12	10													
7.0 – 7.9		16	14	12	12	10													
8.0 – 8.9		16	14	12	12	10													
9.0 – 9.9		16	14	12	12	10													
10.0 – 11.9				16	14	14	12												
12.0 – 12.9				16	14	14	12												
13.0 – 13.9				16	14	14	12												
14.0 – 22.0				16	14	14	12												
22.1 – 24.0						16	14	12											
24.1 – 26.0							16	14	12										
26.1 – 28.0									16	14	12								
28.1 – 30.0												16	16						
30.1 – 35.0																			
35.1 – 40.0						18													
40.1 – 45.0																	17	16	16
45.1 – 50.8													17	17	16	15	15	14	
50.9 – 60.0										17	16	15	14	14	13	13	12	11	
60.1 – 70.0							17	16	15	14	14	13	12	12	11	11	10	10	
70.1 – 80.0		17	17	16		16	15	14	13	13	12	11	11	10	10	9.7	9.3	8.9	
80.1 – 90.0	17	15	15	14	16	14	13	13	12	11	11	10	9.8	9.4	8.9	8.6	8.2	7.9	
90.1 – 100.0	15	13	14	12	14	13	12	11	10	10	10	9.3	8.8	8.4	8.0	7.7	7.4	7.1	
100.1 – 110.0	14	13	15																
110.1 – 120.0	13	12	14																
120.1 – 130.0	12	11	13																
130.1 – 140.0	10	9.7	11																
140.1 – 150.0	10	9.6	10																
150.1 – 160.0	9.7	9.0	9.7																

Not available: Please consult with us for max. product width.

MAXIMUM AVAILABLE SIZES

Extra-Heavy Steel Plates

Non-Heat Treated Products

		Product Length: m					
Width (mm) \ Thickness (mm)	1000 – 2500	2501 – 3000	3001 – 3500	3501 – 4000	4001 – 4500	4501 – 5000	5001 – 5300
– 100							
101 – 125						14.3	13.5
126 – 150		15.0		14.9	13.2	11.9	11.2
151 – 175			14.6	12.7	11.3	10.2	9.6
176 – 200		14.9	12.7	11.1	9.9	8.9	8.4
201 – 225		13.2	11.3	9.9	8.8	7.9	7.5
226 – 250	14.3	11.9	10.2	8.9	7.9	7.1	6.7
251 – 275	13.0	10.8	9.3	8.1	7.2	6.5	6.1
276 – 300	11.9	9.9	8.5	7.4	6.6	5.9	5.6
301 – 325	11.0	9.1	7.8	6.8	6.1	5.5	Not available
326 – 360	10.2	8.5	7.3	6.4	5.7	5.1	

(Note) 1. Maximum weight of product is 70 t.

Heat Treated Products

		Product Length: m					
Width (mm) \ Thickness (mm)	1000 – 2500	2501 – 3000	3001 – 3500	3501 – 4000	4001 – 4500	4501 – 5000	5001 – 5300
– 100							
101 – 125							
126 – 150		13.5			13.2	11.9	11.2
151 – 175				12.7	11.3	10.2	9.6
176 – 200			12.7	11.1	9.9	8.9	8.4
201 – 225		13.2	11.3	9.9	8.8	7.9	7.5
226 – 250		11.9	10.2	8.9	7.9	7.1	6.7
251 – 275	13.0	10.8	9.3	8.1	7.2	6.5	6.1
276 – 300	11.9	9.9	8.5	7.4	6.6	5.9	5.6
301 – 325	11.0	9.1	7.8	6.8	6.1	5.5	Not available
326 – 360	10.2	8.5	7.3	6.4	5.7	5.1	

(Note) 1. Please consult with us for the width over 5,000 mm prior to ordering.

Please consult with us about applicable specification or designation prior to ordering.

Stainless Steel Plates

Austenitic Stainless Steel Plates-I (SUS304, 304L)

		Product Length: m													
Width (mm)	Thickness (mm)	1000 - 1199	1200 - 1600	1601 - 1800	1801 - 2000	2001 - 2200	2201 - 2400	2401 - 2600	2601 - 2800	2801 - 3000	3001 - 3200	3201 - 3400	3401 - 3600	3601 - 3800	3801 - 4000
6.0 - 6.9															
7.0 - 7.9															
8.0 - 8.9															
9.0 - 9.9						13.5									
10.0 - 14.9															
15.0 - 19.9															
20.0 - 24.9												12.5	12.0	11.0	10.5
25.0 - 29.9									12.5	11.5	11.0	10.5	9.5	9.0	8.5
30.0 - 34.9			13.0			12.5	11.5	11.0	10.0	9.5	9.0	8.5	7.5	7.0	
35.0 - 39.9					12.0	11.0	10.0	9.5	9.0	8.0	7.5	7.0	6.5	6.0	
40.0 - 49.9			11.5	10.5	9.5	8.5	8.0	7.5	7.0	6.5	6.0	5.0	5.0	5.0	
50.0 - 59.9	12.0	11.0	10.0	9.0	8.0	7.0	6.5	6.0	5.5	4.5	4.5	4.0	4.0	4.0	
60.0 - 69.9	10.5	9.5	8.5	7.5	7.0	6.0	5.5	5.5	3.5	3.5	3.5				
70.0 - 79.9	9.5	8.0	7.0	6.5	6.0	5.5	3.0	3.0	3.0						
80.0 - 89.9	11.5	8.0	7.0	5.5	5.0	4.5	4.5	4.0	4.0						
90.0 - 99.9	10.0	7.0	6.0	5.0	5.0	4.5	4.0	3.5							
100.0 - 130.0	7.0	5.5	4.5												

(Notes) 1. Minimum size is 1 m wide and 3 m long.
2. The maximum product thickness for Ship's class standard product is listed on the right table.

◆Max. thickness for Ship's class standard product (mm)

NK	LR	NV
55	55	50

Austenitic Stainless Steel Plates-II (SUS316, 316L)

		Product Length: m													
Width (mm)	Thickness (mm)	1000 - 1199	1200 - 1600	1601 - 1800	1801 - 2000	2001 - 2200	2201 - 2400	2401 - 2600	2601 - 2800	2801 - 3000	3001 - 3200	3201 - 3400	3401 - 3600	3601 - 3800	3801 - 4000
6.0 - 6.9															
7.0 - 7.9															
8.0 - 8.9															
9.0 - 9.9						13.5									
10.0 - 14.9															
15.0 - 19.9															
20.0 - 24.9												12.5	12.0	11.0	10.0
25.0 - 29.9									12.5	11.5	11.0	10.5	9.5	9.0	8.5
30.0 - 34.9			13.0			12.5	11.5	11.0	10.0	9.5	9.0	8.5	7.5	7.0	
35.0 - 39.9					12.0	11.0	10.0	9.5	9.0	8.0	7.5	7.0	6.5	6.0	
40.0 - 49.9			11.5	10.5	9.5	8.5	8.0	7.5	7.0	6.5	6.0	5.0	5.0	5.0	
50.0 - 59.9	12.0	11.0	10.0	9.0	8.0	7.0	6.5	6.0	5.5	4.5	4.5	4.0	4.0	4.0	
60.0 - 69.9	10.5	9.5	8.5	7.5	7.0	6.0	5.5	5.5	3.5	3.5	3.5				
70.0 - 80.0	9.0	8.0	7.0	6.5	6.0	5.5	3.0	3.0	3.0						

(Notes) 1. Minimum size is 1 m wide and 3 m long.
2. The maximum product thickness for Ship's class standard product is listed on the right table.

◆Max. thickness for Ship's class standard product (mm)

NK	LR	NV
55	55	50

MAXIMUM AVAILABLE SIZES

Ferritic and Martensitic Stainless Steel Plates

		Product Length: m												
Width (mm) Thickness (mm)	1000 - 1199	1200 - 1600	1601 - 1800	1801 - 2000	2001 - 2200	2201 - 2400	2401 - 2600	2601 - 2800	2801 - 3000	3001 - 3200	3201 - 3400	3401 - 3600	3601 - 3800	3801 - 4000
6.0 - 6.9														
7.0 - 7.9														
8.0 - 8.9														
9.0 - 9.9	13.5													
10.0 - 14.9													13.0	12.5
15.0 - 19.9									12.5	11.5	11.0	10.5	10.0	9.5
20.0 - 24.9						12.5	11.5	10.5	10.0	9.5	8.5	8.5	8.0	7.5
25.0 - 29.9	12.5	12.5	12.5	12.5	11.5	10.5	9.5	9.0	8.0	7.5	7.0	7.0	6.5	6.0
30.0 - 34.9	12.5	12.5	12.0	10.5	9.5	9.0	8.0	7.5	7.0	6.5	6.0	6.0	5.5	5.0
35.0 - 39.9	12.5	11.5	10.5	9.0	8.5	7.5	7.0	6.5	6.0	5.5	5.0	5.0	4.5	4.5
40.0 - 50.0	12.5	11.0	8.0	7.0	6.5	6.0	5.5	5.0	4.0	4.0	4.0	4.0		
50.1 - 60.0	12.0	10.0	9.0	8.0	7.0	6.5	4.5	3.5						
60.1 - 70.0	11.5	8.5	7.5	6.5	6.0	5.5								
70.1 - 80.0	10.0	7.0	6.5	5.5	5.0									
80.1 - 90.0	8.5	6.5	5.5											
90.1 - 100.0	7.5	5.5	5.0											

(Notes) 1. Minimum size is 1 m wide and 3 m long.

Clad Steel Plates

■ One-Side Stainless Clad Steel Plates (Non-Heat Treated Austenitic, Ferritic Stainless, and One-Side Clad Steel)

Product Length: m

Width (mm) Thickness (mm)	1000 - 1500	1501 - 1800	1801 - 2000	2001 - 2200	2201 - 2400	2401 - 2600	2601 - 2800	2801 - 3000	3001 - 3200	3201 - 3400	3401 - 3600	3601 - 3800	3801 - 4000	4001 - 4200	4201 - 5000
6.0 – 8.0	13														
8.1 – 10.0	15														
10.1 – 12.0	17												16	15	
12.1 – 16.0	17												16	15	
16.1 – 18.0	17										16	15	14		
18.1 – 20.0	17								16	15	14				
20.1 – 22.0	17							16	15	14					
22.1 – 24.0	17					16	15	14							
24.1 – 26.0	17				16	15	14								
26.1 – 28.0	17				15	14									
28.1 – 30.0	17			16	14										
30.1 – 32.0	16			15	14				13						
32.1 – 34.0	15			14				12.5							
34.1 – 36.0	14										12				
36.1 – 38.0	14										13	11			
38.1 – 40.0	14								13	12	10.5				
40.1 – 50.0	14				13	12	11	10.5	10	8					
50.1 – 60.0	14				13	12	11	10	9.5	9	8	7			
60.1 – 70.0	14	13	12	11	10	9.5	8.5	8	7.5	7	5.5				
70.1 – 80.0	13	11	10.5	9.5	9	8	7.5	7	6.5	6	5				
80.1 – 90.0	11.5	9.5		8.5	7.5	7	6.5	6	5.5		4.5				
90.1 – 100.0	10.5	8.5		7.5	7	6.5	6	5.5	5	4.5	4				
100.1 – 119.0	9	7		6.5	6	5.5	5	4.5							
119.1 – 150.0	Negotiable range														

Negotiable range

- (Notes) 1. Thickness is a total of base metal and cladding metal.
 2. Minimum cladding metal thickness is 1.5 mm. For less than 2 mm in thickness, please consult with us.
 3. Thickness of cladding metal depends on total thickness of clad plate. Please consult with us for more detail.
 4. Minimum size is 1 m wide and 3 m long.
 5. Above size is restricted in case of some heat treated products and standards.
 6. For dimensions other than above, please consult with us.

■ Titanium Clad Steel Plates

Product Length: m

Width (mm) Thickness (mm)	1000 - 2000	2001 - 2500	2501 - 3000	3001 - 3200	3201 - 3400	3401 - 3600	3601 - 3800	3801 - 3900
6.0 – 8.0	10							
8.1 – 10.0	11		10	9				
10.1 – 12.0	11			10			9	
12.1 – 16.0	11			10			9	
16.1 – 20.0	10							9
20.1 – 24.0	10					9	7	
24.1 – 28.0	10			9		8	6	
28.1 – 30.0	10			8		7.5	6	
30.1 – 32.0	10			8		7.5	6	
32.1 – 34.0	10		9	8		6	5.5	
34.1 – 36.0	10		9	8		6	5.5	
36.1 – 38.0	10		8			5.5		
38.1 – 40.0	10		8		7.5	5.5		
40.1 – 46.0	Negotiable range							

Negotiable range

- (Notes) 1. Minimum size is 1 m wide and 3 m long.
 2. Maximum dimension of product varies according to its application. Please consult with us for each case.

MAXIMUM AVAILABLE SIZES

When placing an order for steel plates with JFE Steel, please specify the following items;

- | | |
|----------|--|
| 1 | Standard and Grade or Brand name |
| 2 | Dimensions |
| 3 | Quantity |
| 4 | Terms of Delivery |
| 5 | Specific requirements;
Chemical composition, Mechanical property,
Ultra-sonic inspection, Heat treatment, Marking,
Packaging, etc. |
| 6 | Further intended processing
(Forming and/or Welding);
Cold, and/or Hot working, Heat treatment,
Welding method, etc. |
| 7 | Witness inspection, if required;
Mill certificate, Third party's certificate, Necessity
of witness and its details |
| 8 | Delivery requirements;
First and final delivery date, Starting date of work,
Date of receiving inspection, Final planning date
of work, Destination, etc. |
| 9 | Other information that may be relevant to the
manufacture of the ordered product |

If you have any question upon placing an order, please contact JFE Steel's head office or other JFE Steel offices.



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