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Stolt

STEEL & ALLOYS FZE

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"The Unyielding Element in Every Voyage.

""Built on Our Steel. Trusted by the Seas."

Technical Guide

Version 1.0.2

MILD STEEL, STAINLESS STEEL, NICKEL ALLOYS, ALLOY STEEL & ALL FERROUS AND NON FERROUS METALS

• PLATES • SHEET • PIPE • TUBES • HOLLOW SECTIONS • STRUCTURAL MATERIAL • SHIPBUILDING MATERIAL

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PROFILE

STOLT STEEL & ALLOYS FZE is a vital part of the Steel & Metal industry in United Arab Emirates Being Importer, Exporter, Mill Representative & Stockiest, we provide a wide range of Industrial Raw Material to a demanding National & international market.

STOLT STEEL & ALLOYS FZE is a sizeable and well-established company having the experience of over more than 1 decade in this industry. We have been serving customer in a wide range of industries, which includes Ship Building, Precision Engineering, Construction, Chemical, Fertilizer, Paper, Defense, Power Plants, and Oil & Gas etc. We value for a single piece of a requirement to large turnkey project & give "MAXIMUM" service to all.

We are approved suppliers to various government department & Public sectors all over the country & regularly supplying to them for a long time. We have got ready stock of the above items in various sizes as per National / International Standards & Specification & the same shall be supplied as per your requirements at very reasonable rates.

MISSION

To deliver continuous improvement in business and exceeding expectations by pioneering change and empowering all stakeholders

VISION

To build a sustainable future through innovation and partnerships

VALUES

Honorable
Synergistic
Transformational
Customer-Centric
Sustainable

2015
Year of Establishment

500
Satisfied Customers

2 + more
Branches & Warehouses

20 COUNTRIES
Our Global Footprint

MILD STEEL, STAINLESS STEEL, NICKEL ALLOYS, ALLOY STEEL & ALL FERROUS AND NON FERROUS METALS

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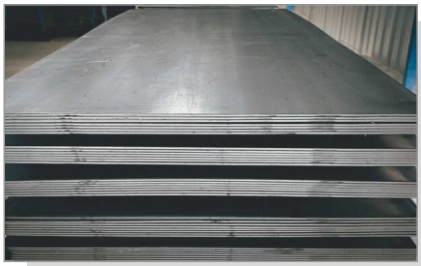
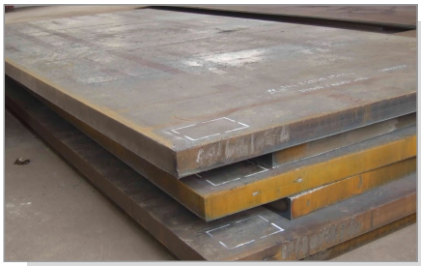
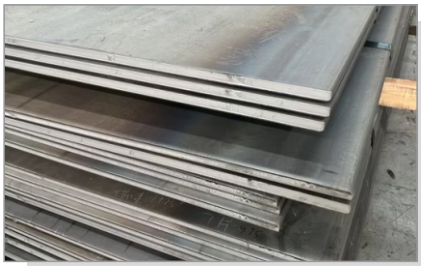
OUR PRODUCTS



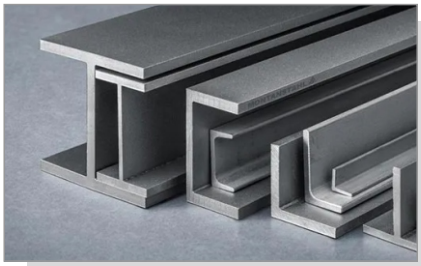
Sheets & Plates



Heat Resistant Steel Plates



Shipbuilding Plates



Structural Steel

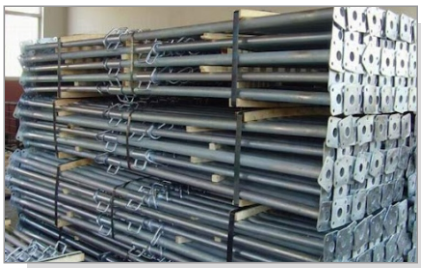
Pipe Fittings

Pipes & Tubes

Forged Fittings

Round Bars

Flanges



Scaffolding Products

Heat Exchanger

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PRODUCT RANGE

Ship Building Plates

Shipbuilding Plates Suppliers, Shipbuilding Plates Manufacturer, Shipbuilding Steel plates Exporter in United Arab Emirates.

ASTM A131 ABS Shipbuilding Steel Plates, ABS/AH32, 36 Plates, LR Shipbuilding Steel Plates Suppliers, LR/A, LR/B, LR/D and LR/E Plates Exporter.

We are one of the leading Manufacturers, Supplier and Exporter of high quality Shipbuilding Plates. They are used for platform superstructures or for special ships in the Shipbuilding industry. We offer higher strength shipbuilding steel plates as standard. High strength steels offer significant cost advantages by reducing the weight of structure in comparison to the steel used.

These high yield materials are commonly used in the construction of hulls and superstructures for large shipping vessels. The grades are exclusively for shipbuilding use as set out in the standard.

Types of Shipbuilding Steel Plates :

- **ABS Shipbuilding Steel Plates**
  - ABS/AH32 Shipbuilding Steel Plates
  - ABS/DH32 Shipbuilding Steel Plates
  - ABS/EH32 Shipbuilding Steel Plates
  - ABS/FH32 Shipbuilding Steel Plates
  - ABS/AH36 Shipbuilding Steel Plates
  - ABS/DH36 Shipbuilding Steel Plates
  - ABS/EH36 Shipbuilding Steel Plates
  - ABS/FH36 Shipbuilding Steel Plates
  - ABS/A Shipbuilding Steel Plates
  - ABS/B Shipbuilding Steel Plates
  - ABS/D Shipbuilding Steel Plates
  - ABS/E Shipbuilding Steel Plates
- **LR Shipbuilding Steel Plates**
  - LR/AH32 Shipbuilding Steel Plates
  - LR/DH32 Shipbuilding Steel Plates
  - LR/EH32 Shipbuilding Steel Plates
  - LR/FH32 Shipbuilding Steel Plates
  - LR/AH36 Shipbuilding Steel Plates
  - LR/DH36 Shipbuilding Steel Plates
  - LR/EH36 Shipbuilding Steel Plates
  - LR/FH36 Shipbuilding Steel Plates
  - LR/A Shipbuilding Steel Plates
  - LR/B Shipbuilding Steel Plates
  - LR/D Shipbuilding Steel Plates
  - LR/E Shipbuilding Steel Plates

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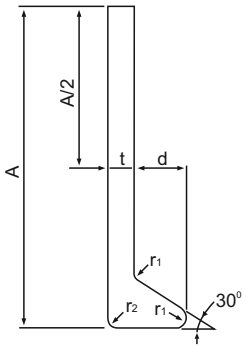
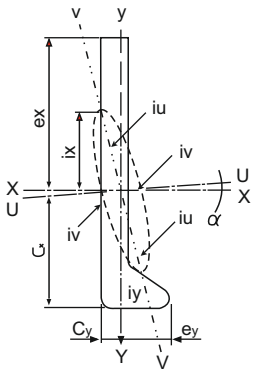
BULB PLATE

Geometrical moment of inertia	$I=ai^2$
Radius of gyration of area	$I=\sqrt{I/a}$
Modulus of section	$Z=I/e$
(a:sectional area)	



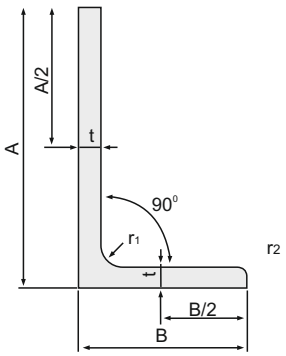


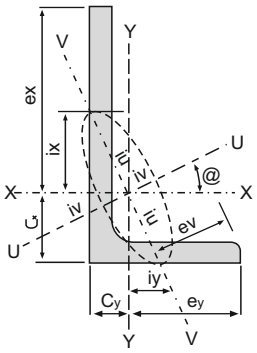
[Product shapes, dimensions and sectional properties]

Dimension (mm)					Sectional area (cm^2)	Unit mass (kg/m)	Position of center of gravity (cm)		Geometrical moment of inetia (cm4)				Radius of gyration of area (cm)				tan α	Modulus of section (cm3)	
A	t	d	r1	r2			Cx	Cy	Ix	Iy	max. Iu	min. Iv	ix	iy	max. iu	min. iv		Zx	Zy
180	9.5	23	7	2	21.06	16.5	7.49	0.746	671	9.48	673	7.34	5.64	0.671	5.65	0.591	0.0568	63.8	3.79
200	10	26.5	8	2	25.23	19.8	8.16	0.834	997	15.1	1.000	11.4	6.29	0.773	6.30	0.672	0.0611	84.2	5.35
230	11	30	9	2	31.98	25.1	9.36	0.927	1.680	24.2	1.680	18.3	7.24	0.870	7.25	0.755	0.0599	123	7.62
250	12	33	10	2	38.13	29.9	10.1	1.02	2.360	35.2	2.370	26.4	7.587	0.960	7.88	0.832	0.0612	159	10.1

Remark: Available length is 6m-18m, Please contact us for other lengths.

UNEQUAL LEG ANGLES





[Product shapes, dimensions and sectional properties]

Dimension (mm)				Sectional area (cm^2)	Unit mass (kg/m)	Position of center of gravity (cm)		Geometrical moment of inetia (cm4)				Radius of gyration of area (cm)				tan α	Modulus of section (cm3)	
A	t	r1	r2			Cx	Cy	Ix	Iy	max. Iu	min. Iv	ix	iy	max. iu	min. iv		Zx	Zy
100x75	7	10	5	11.87	9.32	3.06	1.83	118	56.9	144	30.8	3.15	2.19	3.49	1.61	0.548	17.0	10.0
	10	10	7	16.50	13.0	3.17	1.94	159	76.1	194	41.3	3.11	2.15	3.43	1.58	0.543	23.3	13.7
120x75	7	10	5	13.62	10.7	4.10	1.64	219	60.4	243	36.4	4.01	2.11	4.23	1.64	0.362	26.1	10.3
	10	10	7	19.00	14.9	4.22	1.75	299	80.8	330	49.0	3.96	2.06	4.17	1.61	0.357	36.1	14.1
150x90	9	12	6	20.94	16.4	4.95	1.99	485	133	537	80.4	4.81	2.52	5.06	1.96	0.361	48.2	19.0
	12	12	8.5	27.36	21.5	5.07	2.10	619	167	685	102	4.76	2.47	5.00	1.93	0.357	62.3	24.3

Remark: Length ranges from 5.5m to 18.5m at intervals of 0.5m.
Please contact us for other lengths.

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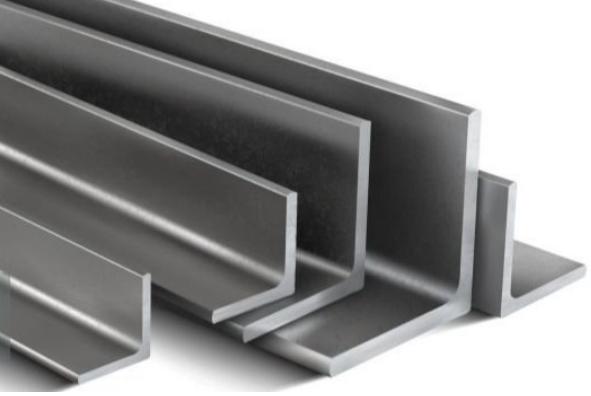

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LONG PRODUCTS

Channels

Type	JIS
Size range	Size : 50 mm x 25mm to 380 mm x 100 mm
Standard	EN10025 - S275 JR/S355 JR/S355 J0/ SS400
Type	UPN
Size range	Size :50 mm to 400 mm
Standard	EN10025 - S275 JR/S355 JR/S355 J0/SS400
Type	PFC
Size range	100 mm x 50 mm to 430 mm x 100 mm
Standard	Standard : EN 10025 - S275 JR/S355 JR / S355 J0/SS400

MS Angles

Type	Equal
Size range	20 mm x 20 mm to 200 mm x 200 mm
Standard	Standard : EN10025 - S275 JR/S355 JR/S355 J0/SS400
Type	Unequal
Size	75mm x 50 mm to 200 mm x 100 mm
Standard	EN10025 - S275 JR/S355 JR/S355 J0/SS400

MS Bars

Type	Round Bars
Size	6 mm to 100 mm
Type	Shafting / Bright Bars
Size	6 mm to 200 mm
Type	Square Bar
Size	10 mm to 60 mm
Standard	ASTM A36/SS400/S275 JR/S355 JR

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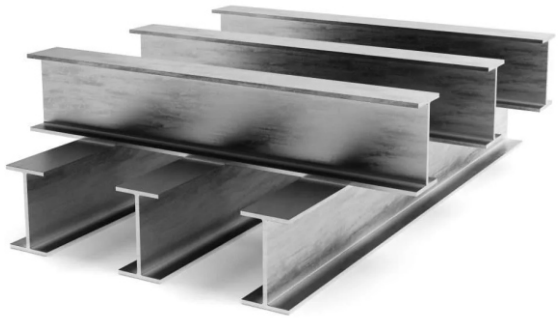

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LONG PRODUCTS

Beams

Type	**Universal Beams**
Size range	127 x 76 mm to 914 x 419 mm
Standard	EN10025 - S275JR / S355J0 / S355J2, ASTM A36 / A572 Gr. 50 / A992
Type	**Universal Columns**
Size range	152 x 152 mm top 356 x 406 mm
Standard	EN10025 - S275JR / S355J0 / S355J2, ASTM A36 / A572 Gr. 50 / A992
Type	**American Wide Flange Beams**
Size range	W 6'' X 4'' to W 36'' x 12''
Standard	EN10025 - S275JR / S355J0 / S355J2, ASTM A36 / A572 Gr. 50 / A992
Type	**European Beams**
Size range	IPE - 80 to 600 mm, IPE A - 100 to 200 mm, HE A/HE B - 100 mm to 600 mm
Standard	EN10025 - S275JR / S355J0 / S355J2, ASTM A36 / A572 Gr. 50
Type	**JIS Wide Flange Beams**
Size range	I Beam - 150 x 75 mm to 900 x 300 mm H Beam - 100 x 100 mm to 400 x 400 mm
Standard	Standard : EN10025 - S275JR / ASTM A36/ A572 Gr. 50/ SS400 / Q235B

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TUBES & PIPES

Black & Hot Dipped Galvanzed Steel Pipes

Type	Black & Hot Dipped Galvanized Steel Pipes
Size range	1/2" to 24"
Standard	EN10225 : 2004, ASTM A53 Gr. A SCH 40, ASTM A53 Gr. B SCH 40

Seamless Pipes

Type	Mild Steel Pipes
Size range	1/2" to 24"
Standard	ASTM A106, ASTM A53 Gr B, ASTM A 333 Gr. 6, ASTM A335 Gr. P5, P9, P11, P12, P22 & P91, API 5L, X 42, 46, 52, 56, 60, 70

MS Square Hollow Sections

Type	Cold Formed Welded Square Tubes
Size range	19 mm x 19mm to 400 mm x 400 mm
Standard	S235 JRH/S275 JOH/ S275 J2H / S355 JOH/ S335 J2H

MS Rectangular Hollow Sections

Type	Cold Formed Welded Square Tubes
Size range	40 mm x 20 mm to 500 mm x 300 mm
Standard	S235 JRH/ S275 JOH/ S275 J2H / S355 JOH/ S335 J2H

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SHEETS/PLATES & COILS DETAILS

We are Importer, Stockiest and supplier of a extensive range of Stainless Steel Plates to our clients. Various national as well as international clients are placing bulk orders for the Stainless Steel Coils due to the unmatched quality and unsurpassable performance. Stainless Steel Coils we supply ensures high durability, tensile strength and resistivity to adverse conditions Additionally, Customers are eased with the availability of the Cold Rolled Stainless Steel Coils in varied grades, sizes dimensions and finishes as pre the specifications provided.

User Industries

Shipbuilding, Marine, Offshore/Onshore Construction, Oil & Gas, Mining etc.

Range : 0.4 mm To 150 mm thickness in Sheets, Plates & Coils

Types : Coil, Foil, Roll, Plain Sheet, Shim Sheet, Perforated Sheet, Chequered Plate, Strip, Flat, Blank (Circle), Ring (Flange)

Material of Construction

High Nickel Alloys	Hastelloy C276 & C22, Nickel 200 & 201, Monel 400 & 500, Inconel 600 & 625, Incoloy 800 & Alloy-20 & Cupro Nickel
Duplex	ASTM A815 / UNS S31803 & S32205 (2205)
Super Duplex	ASTM A815 / UNS S32750 (2507 & S32760.
Titanum	ASTM B265 Gr. - 1, 2, 3, 5 (6AL - 4V), 7, 9, 11, 12, 23 (6AL - 4V ELI)
Stainless Steel	ASTM A240, TP304, 304L, 304H, 316, 316L, 316H, 316Ti, 309, 310, 317L, 321, 347, 409, 410, 420, 430, 446, 904L, 202
Carbon Steel	ASTM A36, S235 , S275JR, S335JR, IS-2062 GR. A / B, Fe 410WA, Fe 410WB, ASTM / ASME A516 / 517 GR. 60 / 70, IS 2062, IS 2002

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Material Grade Comparison Chart

Category based on Yield Strength and Tensile Strength	CVN Temp		ASTM	API 5L	API 2W / 2H	EN 10225 Seamless Hollow Sections	EN 10025-2	EN 10025-3 (Normalized)	EN 10025-4 (TMCP)	ABS / BV / LR	DNV	GL
	°C	°F										
Yield Strength: ≥ 235 N/mm² or MPa ≥ 36 ksi Tensile Strength: ≥ 360N/mm² or MPa ≥ 52 ksi	None	None	A36 A53, A106 Gr. B	L245 / Gr. B (PSL 1) L290 / X42 (PSL 1)								
	+ 20 °C	68 °F					S235 JR			Gr. A	NV A	Gr. A
	0 °C	32 °F		L245 / Gr. B (PSL 2) L290 / Gr. B (PSL 2)			S235 J0			Gr. B	NV B	Gr. B
	- 20 °C	- 4 °F					S235 J2			Gr. D	NV D	Gr. D
	- 40 °C	- 40 °F	A333 Gr. 6							Gr. E	NV E	Gr. E
Yield Strength: ≥ 275 N/mm² or MPa ≥ 40 ksi Tensile Strength: ≥ 430N/mm² or MPa ≥ 62 ksi	None	None		L320 / X46 (PSL 1)								
	+ 20 °C	68 °F					S235 JR					
	0 °C	32 °F		L320 / X46 (PSL 2)			S235 J0					
	- 20 °C	- 4 °F					S235 J2	S275 N	S275 M			
	- 40 °C	- 40 °F			Gr. 42 (2H only)							
	- 50 °C	- 58 °F						S275 NL	S275 ML			
Yield Strength: ≥ 355 N/mm² or MPa ≥ 50 ksi Tensile Strength: ≥ 460N/mm² or MPa ≥ 67 ksi	None	None	A572 Gr. 50	L360 / X52 (PSL 1)								
	+ 20 °C	68 °F					S355 JR					
	0 °C	32 °F		L360 / X52 (PSL 2)			S355 J0			AH 36	NV A36	A36
	- 20 °C	- 4 °F				S355G1 + N	S355 J2 or K2	S355 N	S355 M	DH 36	NV D36	D36
	- 40 °C	- 40 °F			Gr. 50	S355G14 + N / Q S355G15 + N / Q				EH 36	NV E36	E36
	- 50 °C	- 58 °F						S355 NL	S355 ML			
	- 60 °C	- 76 °F									NV F36	F36
Yield Strength: ≥ 420 N/mm² or MPa ≥ 60 ksi Tensile Strength: ≥ 520N/mm² or MPa ≥ 75 ksi	None	None	A572 Gr. 60	L415 / X60 (PSL 1)								
	0 °C	32 °F		L415 / X60 (PSL 2)						AH 40	NV A40	A40
	- 20 °C	- 4 °F						S420 N	S420 M	DH 40	NV D40	D40
	- 40 °C	- 40 °F			Gr. 60 (2w only)	S420G6 + Q				EH 40	NV E40	E40
	- 50 °C	- 58 °F						S420 NL	S420 ML			
	- 60 °C	- 76 °F								FH 40	NV F40	F40
Yield Strength: ≥ 450 N/mm² or MPa ≥ 65 ksi Tensile Strength: ≥ 550N/mm² or MPa ≥ 80 ksi	None	None		L450 / X65 (PSL 1)								
	0 °C	32 °F		L450 / X65 (PSL 2)			S450 J0					
	- 20 °C	- 4 °F						S460 N	S460 M			
	- 40 °C	- 40 °F				S460G6 + Q						
	- 50 °C	- 58 °F						S460 NL	S460 ML			

** The above chart is for comparison reference purposes only. User to use at own discretion.*

Specification category	Grade	Chemical composition (%) [1]								Type of deoxidation	Thickness (mm)	Heat treatment	Tensile test				Charpy impact test		
		C	Si	Mn	P	S	Al	C+Mn/6					Yield point or proof stress (N/mm^2)	Tensile strength (N/mm^2)	Elongation (L=200) Tensile (mm)	Elongation (L=200) Elongation (%)	Testing temperature (^oC)	Minimum mean absorbed energy (J) L	Minimum mean absorbed energy (J) T
NK	KA	0.23max.	0.50max.	2.5XCmin.	0.035max.	0.035max.		0.40max.		S.K	t≦50	AR.N.CR.TMCP.	235min.	400~520	5<t≦10	16min.	-	-	-
	KB	0.21 max	0.35max.	0.80 min (0.60min.)											10<t≦15	17min.	0	27	20
															15<t≦20	18min.			
	KD			0.60min.			0.015min.			K	t≦25				20<t≦25	19min.	-20		
	KE	0.18 max.		0.70min.						KS	t≦50	N.TMCP					-40		
ABS	AA	0.23max.	0.50max.	2.5XCmin	0.035max.	0.035max.		0.40max.		S.K	t≦50	AR.N.CR.TMCP.	235min.	400~550	5<t≦10	16min.	-	-	-
	AB	0.21max.	0.35max.	0.80min. (0.60min.)										400~520	10<t≦15	17min.	0 (Unnecessary when the formula t≦25 is applicable.)	27	20
															15<t≦20	18min.			
	AD		0.10~0.35	0.60min.						K	t≦25				20<t≦25	19min.	-20		
	AE	0.18max.		0.70min.			0.015min.			KS	t≦50	N.TMCP					-40		
LR	LA	0.23max.	0.50max.	2.5xCmin.	0.035max.	0.035max.		0.40max.		S.K	t≦50	AR.N.CR.TMCP.	235min.	400~520	5<t≦10	16min.	20	27	20
	LB	0.21max.	0.35max.	0.80min. (0.60min.)											10<t≦15	17min.	0		
															15<t≦20	18min.			
	LD		0.10~0.35	0.60min.			0.015min.			K	t≦25				20<t≦25	19min.	-20		
	LE	0.18max.		0.70min.						KS	t≦50	N.TMCP					-40		
DNV	NVA	0.23max.	0.50max.	2.5XCmin.	0.035max.	0.035max.		0.40max.		S.K	t≦50	AR.N.CR.TMCP.	235min.	400~520	5<t≦10	16min.	-	-	-
	NVB	0.21max.	0.35max.	0.80min. (0.60min.)											10<t≦15	17min.	0	27	20
															15<t≦20	18min.			
	NVD		0.10~0.35	0.60min.						K	t≦25				20<t≦25	19min.	-20		
	NVE	0.18max.		0.70min.			0.015min.			KS	t≦50	N.TMCP.CR					-40		
BV	BA	0.23max.	0.50max.	2.5XCmin.	0.035max.	0.035max.		0.40max.		S.K	t≦50	AR.N.CR.TMCP.	235min.	400~540	5<t≦10	16min.	-	-	-
	BB	0.21max.	0.35max.	0.80min. (0.60min.)										400~520	10<t≦15	17min.	0	27	20
															15<t≦20	18min.			
	BD			0.60min.						K	t≦25				20<t≦25	19min.	-20		
	BE	0.18max.		0.70min.			0.015min.			KS	t≦50	N.TMCP.CR					-40		
GL	GL-A	0.23max.	0.50max.	2.5XCmin.	0.035max.	0.035max.		0.40max.		S.K	t≦50	AR.N.CR.TMCP.	235min.	400~520	5<t≦10	16min.	-	-	-
	GL-B	0.21max.	0.35max.	0.80min. (0.60min.)											10<t≦15	17min.	0	27	20
															15<t≦20	18min.			
	GL-D			0.60min.						K	t≦25				20<t≦25	19min.	-20		
	GL-E	0.18max.	0.25max.	0.70min.			0.015min.			KS	t≦50	N.TMCP					-40		
KR	RA	0.23max.	0.50max.	2.5XCmin.	0.035max.	0.035max.		0.40max.		S.K	t≦50	AR.N.CR.TMCP.	235min.	400~520	5<t≦10	16min.	-	-	-
	RB	0.21max.	0.35max.	0.80min. (0.60min.)											10<t≦15	17min.	0	27	20
															15<t≦20	18min.			
	RD			0.60min.						K	t≦25				20<t≦25	19min.	-20		
	RE	0.18max.		0.70min.			0.015min.			KS	t≦50	N.TMCP.CR					-40		
CR	CA	0.23max.	0.50max.	2.5XCmin.	0.035max.	0.035max.		0.40max.		S.K	t≦50	AR.N.CR.TMCP.	235min.	400~550	5<t≦10	16min.	-	-	-
	CB	0.21max.	0.35max.	0.80min. (0.60min.)										400~520	10<t≦15	17min.	0	27	20
															15<t≦20	18min.			
	CD			0.60min.						K	t≦25				20<t≦25	19min.	-20		
	CE	0.18max.		0.70min.			0.015min.			KS	t≦50	N.TMCP					-40		
CCS	CSA	0.23max.	0.50max.	2.5XCmin.	0.035max.	0.035max.		0.40max.		S.K	t≦50	AR.N.CR.TMCP.	235min.	400~520	5<t≦10	16min.	-	-	-
	CSB	0.21max.	0.35max.	0.80min. (0.60min.)											10<t≦15	17min.	0	27	20
															15<t≦20	18min.			
	CSD			0.60min.						K	t≦25				20<t≦25	19min.	-20		
	CSE	0.18max.		0.70min.			0.015min.			KS	t≦50	N.TMCP					-40		

marks : Type of deoxidation S : Semi-killed steel
K : Killed steel
KS : Fine-grained, killed steel

Heat treatment AR: As-rolled
CR: Rolling under temperature control
N: Normalizing
TMCP : Controlling method of thermal processing
QT : Quenching and tempering Heat treatment

Charpy impact test L : Rolling direction
T : Perpendicular to rolling direction

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