

## **Henan AnSon Steel Co.,Ltd**

Address: Suite F,8/F Jinhao Business Bld.,Renmin  
Rd.,Anyang,Henan,P.R.C

Post Code:455000

Tel: (86) 372 5065801 (86) 372 5065802  
(86) 372 5065803

Fax: (86) 372 5065801-614

Email: [info@ansonsteels.com](mailto:info@ansonsteels.com)

Website: <http://www.ansonsteels.com>





**ANSON**

# **Henan Anson Steel Co., Ltd**



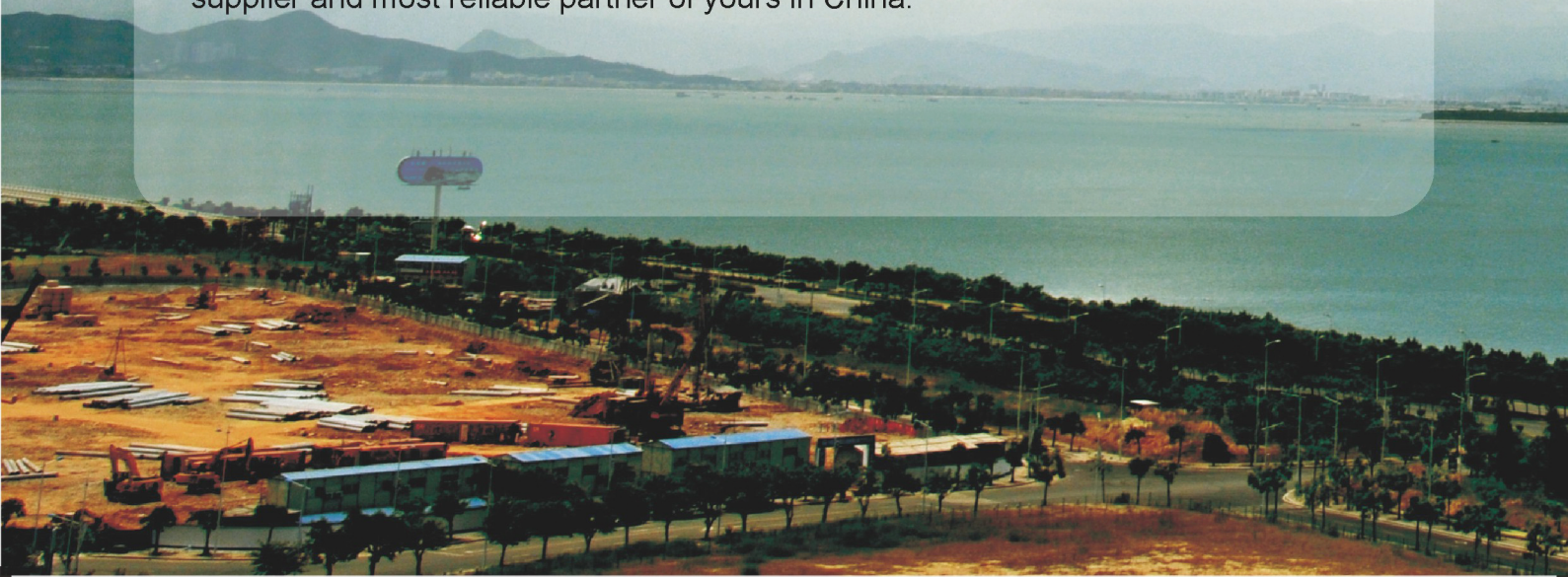
*Welcome to Anson!*

## **About Anson**

Henan Anson Steel Co., Ltd(ASSC), a subsidiary of Anyang General International Group, which has 20 years' export experience. It is one of the professional steel products exporters and service providers in China, and also a professional supplier for the special steels including shipbuilding steels, boilers, containers and wind turbines, etc.

For a long time, our products have been exported to more than 30 countries and regions, including USA, Europe, Saudi Arabia, Egypt, Bangladesh, Sri Lanka, Korea, Vietnam, Myanmar and so on.

In order to meet the customer's fully requirements for different steel products, materials and specifications, we build up a unique "one-stop" service mode. We have set up a stable relationships with the major steel mills in China. More over, We have many professional technicians all over these factories, they are very good at equipment characteristics, technical conditions and production status of each major steel factory in China. With our highly efficient management system, long-term career experience we can provide efficient, thoughtful "one-stop" export services to customers from all over the world. We sincerely hope to be the most trustful steel supplier and most reliable partner of yours in China.



# *Enterprise Mission:*

From success to excellent  
To be the professional worldwide steel products supplier.

## **MENU**

### ■ Steel Products For Special Purpose

- 01、Steel Products for Shipbuilding
- 02、Structure Steel Plate for Wind Power Tower
- 03、Steel Products for Boiler in Power Station
- 04、Steel Plate for Boilers and Pressure Vessels

### ■ General Steel Products

- 01、Hot Rolled Steel Plate
- 02、Prepainted Steel Sheets
- 03、Tool Steel
- 04、Seamless Steel Pipe
- 05、Section Steel



## ■ STEEL PRODUCTS FOR SPECIAL PURPOSE

### 01、Steel Products for Shipbuilding

#### 1.1、Shipbuilding Steel Plate

We can supply you with shipbuilding plates in the following specifications :

Thickness: 3~200 mm

Width: 1500~4000 mm

Length: 5000~18000 mm

1, Hot rolled medium steel shipbuilding plate

With Classification Society Quality

Authentication from LR, ABS, NK, GL, DNV, BV, KR, RINA, CCS

2, Hot rolled High Strength shipbuilding plate

AH32, AH36, DH32, DH36, EH32, EH36, AH40, DH40





## I . Grade and Chemical Composition (%)

Grade	C %≤	Mn %≤	Si %≤	p %≤	S %≤	Al %≤	Nb %≤	V %≤
A	0.22	≥2.5C	0.10~0.35	0.04	0.04	—	—	—
B	0.21	0.60~1.00	0.10~0.35	0.04	0.04	—	—	—
D	0.21	0.60~1.00	0.10~0.35	0.04	0.04	≥0.015	—	—
E	0.18	0.60~1.20	0.10~0.35	0.04	0.04	≥0.015	—	—
A32	0.18	0.70~1.60	0.10~0.50	0.04	0.04	≥0.015	—	—
D32		0.90~1.60						
E32		0.90~1.60						
A36	0.18	0.70~1.60	0.10~0.50	0.04	0.04	≥0.015	0.015~0.050	0.030~0.10
D36		0.90~1.60						
E36		0.90~1.60						

## Mechanical Properties :

Grade	Thickness (mm)	Yieldpoint (Mpa)≥	Tensile Strength (Mpa)	Elongation (%)≤	V-impact test			Cold Bend Test	
					Temperature (°C)	Average AKV A kv /J		b=2a 180°	b=5a 120°
						lengthways	crosswise		
A	≤50	235	400~490	22	—	—	—	d=2a	—
B					0	27	20	—	d=3a
D					-10				
E					-40				
A32	≤50	315	440~590	22	0	31	22		
D32					-20				
E32					-40				
A36	≤50	355	490~620	21	0	34	24	—	d=3a
D36					-20				
E36					-40				



## II. Available Specification

variety		Thickness (mm)	Width (mm)	Length/ Inner Diameter (mm)
Shipbuilding plate	Cutting Edges	6~50	1500~3000	3000~15000
	Non- cutting Edges		1300~3000	
Shipbuilding coil	Cutting Edges	6~20	1500~2000	760+20~760-70
	Non-cutting Edges		1510~2010	

## Theoretical Weight

Thickness (mm)	Theoretical Weight		Thickness (mm)	Theoretical Weight	
	Kg/ft2	Kg/m2		Kg/ft2	Kg/m2
6	4.376	47.10	25	18.962	196.25
7	5.105	54.95	26	20.420	204.10
8	5.834	62.80	28	21.879	219.80
10	7.293	78.50	30	23.337	235.50
11	8.751	86.35	32	25.525	251.20
12	10.21	94.20	34	26.254	266.90
14	10.939	109.90	35	27.713	274.75
16	11.669	125.60	40	29.172	314.00
18	13.127	141.30	45	32.818	353.25
20	14.586	157.00	48	35.006	376.80
22	16.044	172.70	50	36.464	392.50
24	18.232	188.40			

## III. Dimensional Deviation

Nominal Thickness (mm)		Thickness deviation with the following width (mm)			
		≤1200	>1200~1500	>1500~1800	>1800
>6.0~8.0		±0.29	±0.30	±0.31	±0.35
>8.0~10.0		±0.32	±0.33	±0.34	±0.35
>10.0~12.0		±0.35	±0.36	±0.37	±0.43

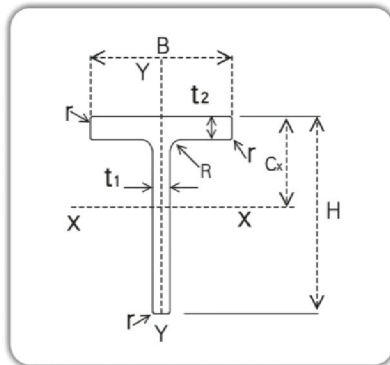
Nominal Thickness (mm)	Minus Deviation (mm)	Thickness deviation with the following width (mm)									
		>1000~1200	>1200~1500	>1500~1700	>1700~1800	>1800~2000	>2000~2300	>2300~2500	>2500~2600	>2600~2800	>2800~3000
>12~25	-0.8	+0.2	+0.2	+0.3	+0.4	+0.6	+0.8	+0.8	+1.0	+1.1	+1.2
>25~30	-0.9	+0.2	+0.2	+0.3	+0.4	+0.6	+0.8	+0.9	+1.0	+1.1	+1.2
>30~34	-1.0	+0.2	+0.3	+0.3	+0.4	+0.6	+0.8	+0.9	+1.0	+1.2	+1.3
>34~40	-1.1	+0.3	+0.4	+0.5	+0.6	+0.7	+0.9	+1.0	+1.1	+1.3	+1.4
>40~45	-1.2	+0.4	+0.5	+0.6	+0.7	+0.8	+1.0	+1.1	+1.2	+1.4	+1.5



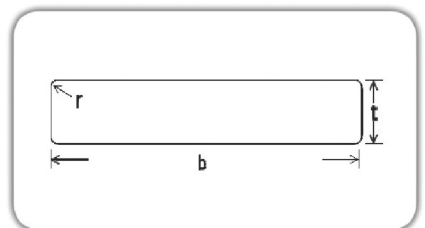
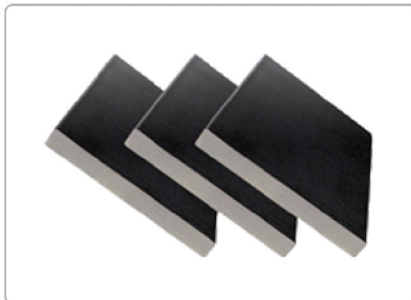
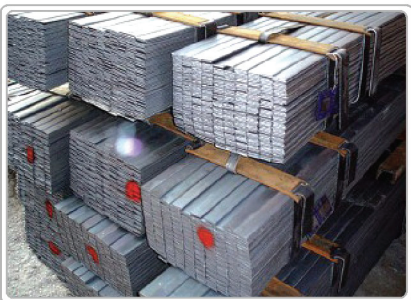
### 1.2. Pipe for Ship-building



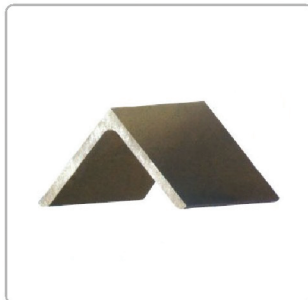
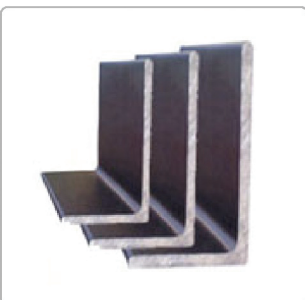
### 1.3. T-shaped Steel For Ship-building



### 1.4. Steel Flat Bar For Ship-building



### 1.5. Angle Steel for Shipbuilding







## 02、 Structure Steel Plate for Wind Power Tower



### 1、 Material:

Q345C/D/E--Z15/Z25/Z35 、 S355-J0/J2/K2/NL

### 2、 Table of Standard comparisons:

GB/T	ISO	ROCT	ASTM	JIS	EN10025
Q345C	E335DD(4951)	345	Gr50(345)A572M	SPFC590	S355J0
Q345D	E335DD(4951)	345	Gr50(345)A572M	SPFC590	S355J2
Q345E	E335DD(4951)	\	Gr50(345)A572M	SPFC590	S355NL

### 3、 technical requirements:

A: Good weld ability    B: High liquid steel clarity    C: Good material homogenizing  
D: High toughness    E: specified organizational structure

### 4.1、 Chemical Composition:

Grade	Chemical Composition %								
	C	Si	Mn	P	S	Nb	Al	carbon equivalent	
Q345	C	≤0.20	≤0.50	≤1.70	≤0.030	≤0.030	≤0.07	≥0.015	≤0.44
	D	≤0.18			≤0.030	≤0.025			
	E				≤0.025	≤0.020			

### 4.2、 Mechanical property:

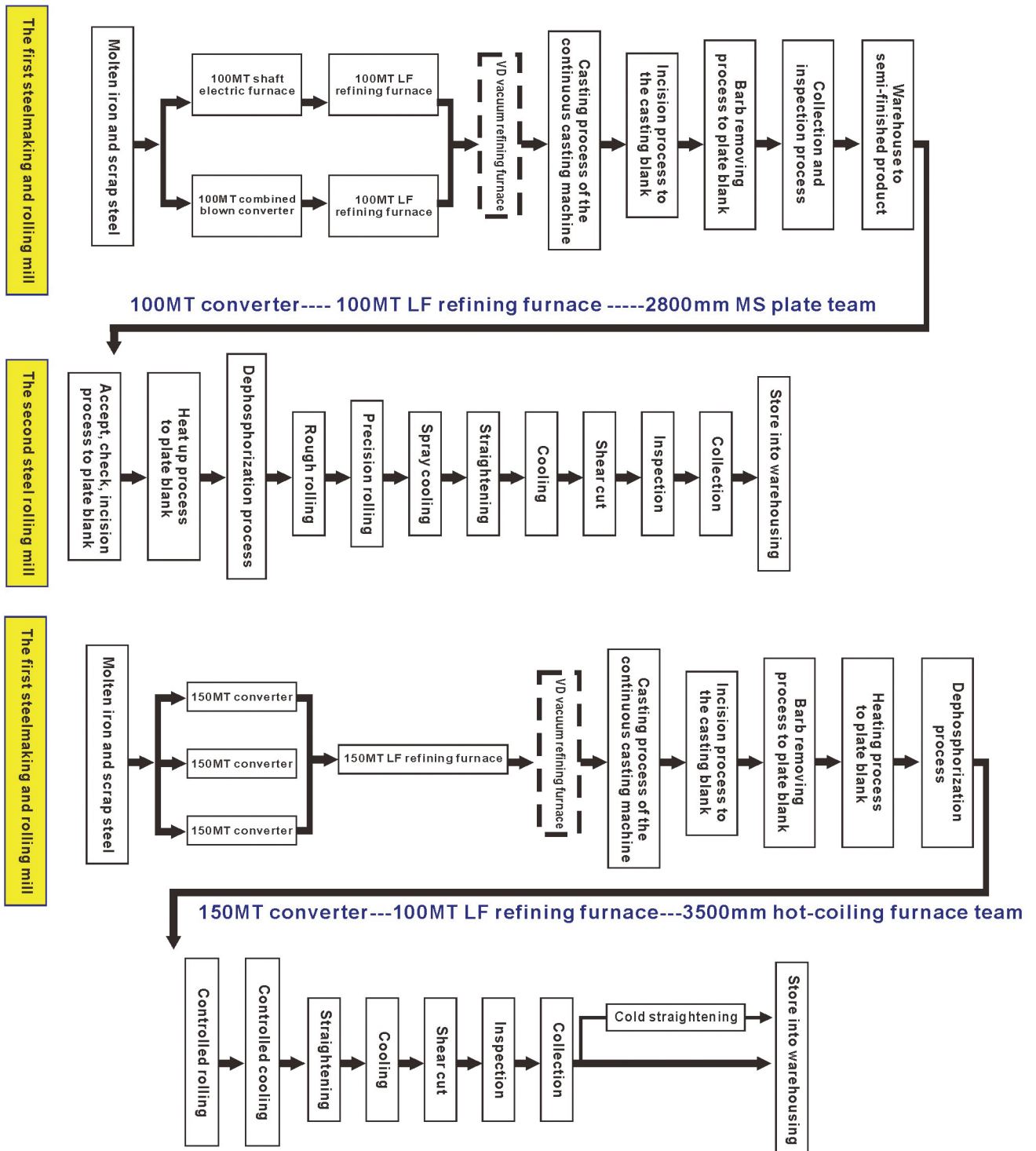
GRADE	ReH (MPa) YIELD STRENGTH			Rm MPa TENSILE STRENGTH	A5(%)ELONGATION		LONGI.V-NOTCH IMPACT(KV2)		
	≤16mm	>16~40mm	>40~60mm		≤40mm	>40~60mm	°C	J	
Q345	C			470~630	≥21	≥20	0	≥34	
	D	≥345	≥335				≥325		-20
	E								-40



- Quality, Strength and toughness can meet with all Standard and using requirements.
- As ferrite and pearlite steel, the material has the good tenacity matching, Impact energy more than 100J under -40°C temperature without hot treatment.
- Grain refining control technology in the whole process.
- Ferrite and pearlite steel high tenacity matching technology.

## 5、 technological process:

According to Metallic recrystallization area and Metal end recrystallization area control process, then cold control after rolling process.





## 03、 Steel Products for Boiler in Power Station

Boiler steel in power station:

Our business scope: Boiler steel used in power station, including all kinds of boiler steel pipes from Baoshan Iron & Steel Co., Ltd, High-pressure hot rolled boiler steel pipes and alloy pipes from Tianjin Pipe Group Co., Ltd.;Our size scope:  $\Phi 16$ - $\Phi 825$ . steel standard covers GB Series,ASME series, EN10216-2 (or DIN17175) and the corresponding JIS boiler tubes and other international standards of production.

As a professional supplier of boiler steel,our products are mainly used in power plant boiler manufacturer, power pipe installation,pipe fittings manufacturing and the reformation of the power station.These high pressure carbon boiler pipe in standards (20G, SA106B, SA192, SA106B, SA106C, SA210A1, SA210C, P235GH , P265GH, etc.),high-pressure boiler steel pipe in standards (15CrMoG, 12Cr1MoVG, T91, T92, T23, T22, T11, T2, P91, P92, P11, P12, WB36, 16Mo3, 13CrMo4-5, 10CrMo9-10, etc.), high-pressure boiler stainless steel tube in standards (TP304H, TP321H, TP347H, etc.)



### 1. Application :

Power Station, Boiler plant, coal mine industry ,chemical engineering industry .

### 2. Advantage:

the length of certain pipes we supply can reach up to 25 meter

### 3. Product :



Standard	Steel grade	Size	Application	Remark	
ASME	ASME SA-106	SA-106A	Φ16~Φ114×2.5~16 (cold drawing)	Carbon Steel Pipe for High Temperature Service	
		SA-106B	Φ48~Φ650×3.5~70 (hot rolling)		
		SA-106C			
	ASME SA-179M	SA-179	Φ16~Φ168×2~10	Seamless Cold-Drawn Low -Carbon Steel Heat Exchanger and Condenser Tubes	Max length: 25 meter/pcs
	ASME SA-192M	SA-192	Φ16~Φ177×2.2~25	Seamless Carbon Steel Boiler Tubes for High Pressure / Service	Max length: 25 meter/pcs
	ASME SA-210M	SA-210A, SA210-C	Φ16~Φ168×2~12	Seamless Medium Carbon Steel Boiler and Superheater Tubes	Max length: 25 meter/pcs
	ASME SA-213M	T2,T5,T9,T11, T12, T22, T23, T91	Φ16~Φ168×2~12.7	Seamless- Ferritic and, Austenitic, AlloySteel- BoilerSuperheater /and HeatExchanger Tubes	Max length: 25 meter/pcs
	ASME SA-213M	TP304H, TP347H, TP309H	Φ16~Φ127×2~12.7	Austenitic Stainless Steel Tubes for Boiler	
ASME SA-335M	P1,P2,P5,P11,P12,P22,P91	Φ219~Φ865×10~120	AlloySteel- BoilerSuperheater /and HeatExchanger Tubes		
EN	EN10216-2	P195GH, P235GH, P265GH,	Φ16~Φ114×2.5~16 (cold drawing)	Seamless Steel Tubes for Pressure Purposes	
		16Mo3, 13CrMo4-5, 10CrMo9-10	Φ48~Φ650×3.5~70 (hot rolling)		
JIS	JIS G3461-2005	STB 510	Φ16~Φ427×2~30	Carbon steel boiler and heat exchanger tubes	
	JIS G3462-2004	STBA 12, STBA 13, STBA 20, STBA 22, STBA 23, STBA 24, STBA 28	Φ16~Φ427×2~30	Alloy Steel Boiler and Heat Exchanger Tubes	
	JIS G3463-2006	SUS304HTB, SUS316HTB, SUS321HTB, SUS347HTB	Φ16~Φ427×2~30	Stainless Steel Boiler and Heat Exchanger Tubes	
DIN	DIN 17175	ST35.8, ST45.8	Φ16~Φ177×2~25	Seamless Cold-Drawn Low -Carbon Steel Heat Exchanger and Condenser Tubes, Boiler Tubes for High Pressure / Service	
GB	GB5310-1995	20G,15CrMoG,12CrMoVG,	Φ16~Φ114×2.5~16 (cold drawing)	High Pressure Boiler Steel Tube	
		12Cr2MoWVTiB (R102)	Φ48~Φ650×3.5~70 (hot rolling)		
	GB3087-1999	10, 20	Φ16~Φ114×2.5~16 (cold drawing)	Seamless Steel Pipe for Low/Mid-Pressure Boiler	
			Φ48~Φ650×3.5~70 (hot rolling)		
GB5310-1995	1Cr18Ni9, 1Cr19Ni11Nb, 1Cr18Ni9Ti, 1Cr19Ni9	Φ16~Φ159×2~13	Boilers, heat exchangers, stainless steel seamless steel pipe		
GB13296-91					



## 04. Steel Plate for Boilers and Pressure Vessels



Application: Widely used in petroleum, chemical industry, power plants, boilers and other fields, such as to produce reactors, heat exchangers, separators, spherical tank, oil tank, LPG tanks, nuclear reactor pressure shell, boiler drum, liquefied petroleum gas cylinders, hydropower high-pressure pipes, Turbine vortex shells and other equipment and components, etc.

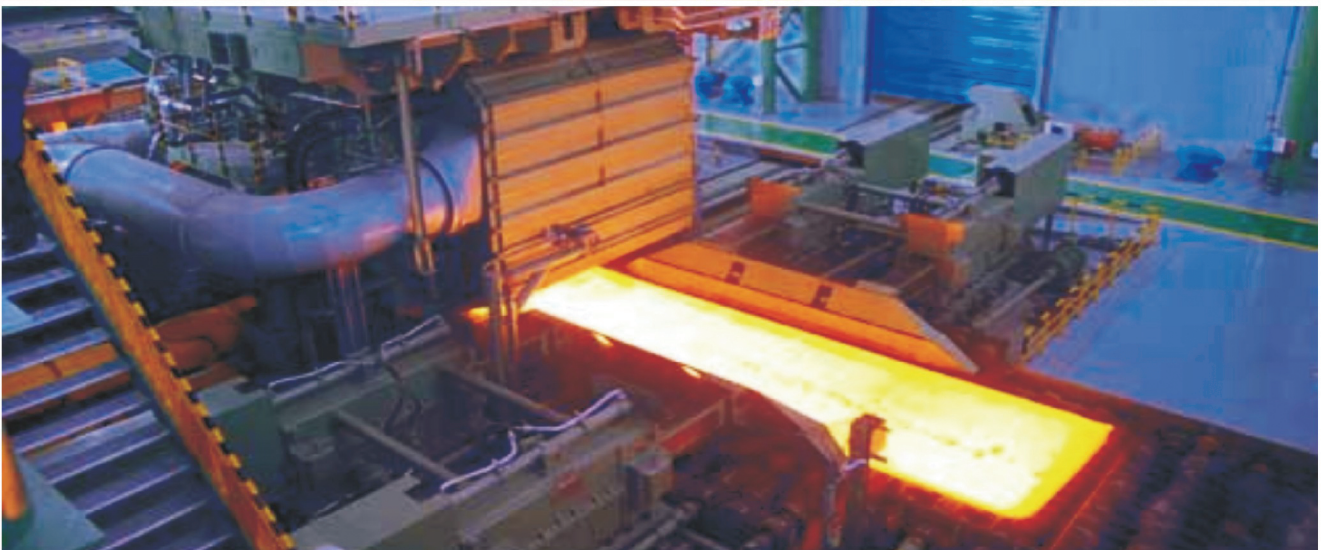


Steel Grade	Executive Standard
20g, 16Mng, 15CrMog, 12Cr1MoVg, 19Mng, 22Mng, 13MnNiCrMoNbg	GB713-97
20g, 16Mng, 15CrMog, 15CrMoR, 13MnNiMoNbR, 15MnNbR, 15MnVNR	GB6654-96
16MnDR, 09MnNiDR, 15MnNiDR	Gb3531
12Cr2Mo1R, 14Cr1MoR, 07MnCrMoVR, 07MnNiCrMoVDR	Gb150
SB410, SB450, SB480	JIS G 3103
SPV235, SPV315, SPV355, SPV410, SPV450, SPV490	JIS G 3115
SGV410, SGV450, SGV480	JIS G 3118
SBV1A, SBV1B, SBV2, SBV3	JIS G 3119
SEV245, SEV295, SEV345	JIS G 3124
SPV235, SPV315, SPV355, SPV410, SPV450, SPV490	DIN17155
HI, HII, 10CrMo910, 15Mo3, 13CrMo44, 19Mn6	DIN17155
BHW35	Thyssen
13MnNiMo54	Dillingen
1Cr0.5Mo, 2.25Cr1Mo, 1.25Cr0.5Mo	special purpose & condition
(S)A299M (S)A662M(Gr.A, B, C) (S)A515M(Gr.60, 65, 70) (S)A302M(Gr.A, B, C, D) (S)A516M(Gr.55, 60, 65, 70) (S)A737M(Gr.B, C) (S)A204M(Gr.A, B, C) (S)A738M(Gr.A, B, C) (S)A387M(Gr.11, 12, 22) (S)A533M(I, II) (S)A537M(CL.1, CL.2)	ASTM、ASME
P235GH, P265GH, P295GH, P355GH, 16Mo3, 13CrMo4-5, 10CrMo9-10, 11CrMo9-10	EN10028-2
A42, A52, A48	NF A36-205
20MnHR, 20HR, 16MnHR	special purpose & condition
161G430	Bs1501



## ■ GENERAL STEEL PRODUCTS

### 01、 Hot Rolled Steel Plate



#### 1、 Specification Range

Thickness : 8mm-300mm

Width : 1500mm-4020mm

Length : 3000mm-18000mm

Maximum Weight for Single Order : 25 Ton

2、 Status on Delivery: According to the performance and the requirements from clients, the status on delivery of steel plate can be hot rolled ,controlled rolling, normalizing,annealed tempering, normalizing + tempering, hardening + tempering , etc.

#### 3、 flaw detection & Through-Thickness Property

We are capable of manufacturing the steel plate with additional flaw detection and Z15-Z35 tear resistance ( Through-Thickness Property ), also can supply you with Z-Direction Steel Plate according to ASTM、 A770 standard.



## High Strength Low Alloy Steel Sheet



Application: To manufacture factory building, civil building and all kinds of engineering machinery in mine industry and various types of civil construction, such as drilling rig, electric shovel, powered wheel tipper, mining vehicles, excavators, loaders, bulldozers, industrial blowers, various types of cranes, mining machinery and equipment, (such as hydraulic support and other structural parts).

Steel Grade	Executive Standard
12Mn, 16Mn 15MnV, 15MnVN, 14MnNb	GB3274-88
Q295(A, B)	GB/T1591-94
Q345(A, B, C, D, E) ≤ 100mm	GB/T1591-94
Q345(A, B, C, D, E) ≥ 102mm	Q/WTB8 - 2000
Q390(A, B, C, D, E), Q420(A, B, C, D, E), Q460(C, D, E)	GB/T1591-94
Q500(D, E), Q550(D, E), Q620(D, E), Q690(D, E)	GB/T16270
SM490(A, B, C), SM490Y(A, B), SM520(B, C), SM570	JIS G3106
SS490, SS540	JIS G3101
St44-3, St52-3, St50-2, St60-2, St70-2	DIN17100
StE315, StE355, StE380, StE420, StE460, StE500	DIN17102
A572M(Gr42, 50, 60, 65), A633M(A, C, D, E)	ASTM
S275(JR, J0, J2G3, J2G4), S355(JR, J0, J2G3, J2G4), K2G3, K2G4, E295, E335, E360	En10025
S275N, S275NL, S355N, S355NL, S420N, S420NL, S460N, S460NL	En10113
50(A, B, C, D, DD, EE, F), 43(A, B, C, D, EE), 55(C, EE, F)	Bs4360
WH60 (A、B、C、D、E)	WJX013-2001
Wh70	WYJ060-2000
Wh80	WYJ002-2002
WH410LK(BB41BF), WH490LK(BB503)	Special Purpose & Condition
E355(DD, E), E460(CC, DD, E)	ISO4950-2
E420(DD, E), E460(DD, E), E550(DD, E), E690(DD, E)	ISO4950-3
Fe430(A, B, C, D), Fe510(B, C, D)	ISO630





## Steel Plate for High Rise Building Structure

To manufacture pillar and the load-bearing beam for industrial & civil buildings, other steel structure, etc.



Steel Grade	Executive Standard
HBS235(2), HBS345(2)	special purpose & condition
SN400, (A, B, C), SN490, (B, C)	JIS G 3136
275(D, E, EZ), 355(D, E, EM), 355EMZ, 450(EM, EMZ)	Bs7191
Q235GJC, D, E; Q345GJC, D, E;	GB19879
Q390GJC, D, E; Q420GJC, D, E; Q460GJC, D, E	



## Chequered Steel Plate



Standard	Steel Grade	Executive Standard
ASTM	1010,1017,1020	ASTM A29M
DIN	S185,S235JR	DIN EN 10025
JIS	SS330,SS400	JIS G3101-2004
GB	Q195,Q215,Q235	GB/T 700-2006

Product Name	Thickness(mm)	Width(mm)	Length(inner diameter of coil)(mm)
Steel Plate	2.5-10	1010-1500	2000-12000
Steel Coil	2.5-10	1000-1500	760+20-760-70

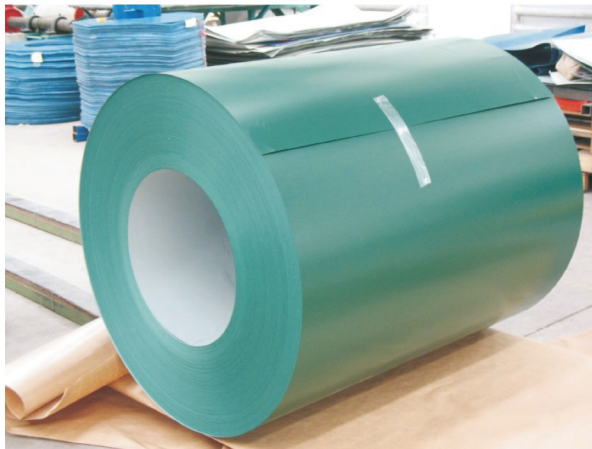
### Theoretical Weight

Thickness (mm)	theoretical weight		Thickness (mm)	theoretical weight	
	Kg/ft <sup>2</sup>	Kg/m <sup>2</sup>		Kg/ft <sup>2</sup>	Kg/m <sup>2</sup>
2.5	1.979	21.3	6.0	4.497	48.4
3.0	2.267	24.4	7.0	4.887	52.6
3.5	2.638	28.4	7.5	5.064	54.5
4.0	3.01	32.4	8.0	5.240	56.4
4.5	3.382	36.4	9.0	5.630	60.6
5.0	3.763	40.5	9.5	5.807	62.5
5.5	4.116	44.3	10.0	5.983	64.4

Thickness (mm)	Tolerance (mm)
2.5-3.5	±0.3
4.0-4.5	±0.4
5.0-5.5	-0.5,+0.4
6.0-7.0	-0.7,+0.6
8.0-10.0	-0.8,+0.6



## 02、 Prepainted Steel Sheets



### Application

Building roof, component of roof structure, mask plate of balcony, windowsill, newspaper booth, garage, roller shutter door, heater, drainage pipe, etc.

Appliance fridge, washer machine, switch board, air conditioning, microwave, bread machine, copier machine, automatic merchandising machines, electrical fan, dust collector, etc Furniture lighting hood, cabinet, desk, shelf, counter table, billboard, medical facility, etc

Transportation auto ceiling, outer shell, internal plate, tractor, electrical car, container, express way bounding wall, ship cell plate, etc.

Others musical instrument shell, dust bin, billboard, clock, camera, gauge etc.

Product name:	Prepainted galvanized Coil
Zinc Coating	60-275g/m <sup>2</sup>
Grade	TSGCC
Thickness	0.25mm – 0.8mm
Width	914mm – 1250mm
Coating	Top coat 5 + 15um , 5+ 20um, Back coat: 5-15um
Colour	RAL No. or Sample
Standard	JIS G3302

### 03、 Tool Steel

#### P20 Plastic Mould Steel

##### A:Specification



Product	Material	Spec.(mm)	Length(mm)	Remark
Plastic Mould Steels	1.2311(Plate)	20-75*2000	3000-10000	Hot Rolled,Black Skin,Pre-hardened
Product	Material	Spec.(mm)	Length(mm)	Remark
Plastic Mould Steels	P20(Sheet)	30-80*1800-2300	3000-10000	Hot Rolled,Black Skin,Pre-hardened
Plastic Mould Steels	P20(Flat)	20-45*255	3000-5800	Hot Rolled,Black Skin,Annealed

##### B:Performance Table

General Information	Pre-hardened grade specially designed for the plastic mold industry deliver in hardened and tempered condition (300HB),subsequent heat treatment is not necessary. Specially employed for the plastic mold industry and adapted ford polishing and chemical(low sulphur content)						
Comparable Standards	AISI/SAE	DIN	W.N	AFNOR	BS	SIAU	
	-	40CrMnMo7	1.2311	35CMD7	-	2311	
Chemical Analysis (%)	C	Mn	Si	Cr	Mo	P	S
	0.35-0.45	1.30-1.60	0.20-0.40	1.80-2.10	0.15-0.25	≤0.03	≤0.03



## D2 Tool Steel



### A: Specification

Product	Material	Spec.(mm)	Length(mm)	Remark
Cold Work Steels	D2	Φ12-130	3000-5800	Hot Rolled、Annealed
Cold Work Steels		Φ65-420	3000-5800	Forging、Annealed、Polished
Cold Work Steels		Φ114-305	3000-5800	Forging、Annealed、Smooth Machined
Cold Work Steels	D2(Flat)	25-60*255-405	3000-5800	Forging、Black Skin
Cold Work Steels		100-150*610	3000-5800	Forging, Black Skin, Electro-slag
Cold Work Steels		180-350*620	3000-5800	

### B: Performance Table

General Information	Steel with hardening air, oil and salts bath. It features good resistance and toughness for hot and treatments. Normally used for mould carrier frames, containers for pressure casting, sub-dies for extrusion of aluminum, plastic moulds.							
Comparable Standards	AISI/SAE	DIN	W.N	AFNOR	BS	SIAU		
	D2	X155CrVMo12_1	1.2379	Z160CDV12	BD2	KORV		
Chemical Analysis (%)	C	Mn	Si	Cr	Mo	V	P	S
	1.50-1.60	0.15-0.45	0.10.40	11.0-12.0	0.60-0.80	0.90-1.10	≤0.03	≤0.03

## SKD11 Cold Work Tool Steel



### A: Specification

Product	Material	Spec.(mm)	Length(mm)	Remark
Cold Work Steels	SKD11 Round	Φ 16-50	3000-5800	Hot Rolled, Annealed

### B: Performance Table

General Information	Steel with hardening air, oil and salts bath. It features good resistance and toughness for hot and treatments. Normally used for mould carrier frames, containers for pressure casting, sub-dies for extrusion of aluminum, plastic moulds.							
Comparable Standards	AISI/SAE	DIN		W.N	AFNOR	BS	SIAU	
	D2	X155CrVMo12_1		1.2379	Z160CDV12	BD2	KORV	
Chemical Analysis (%)	C	Mn	Si	Cr	Mo	V	P	S
	1.50-1.60	0.15-0.45	0.10-0.40	11.0-12.0	0.60-0.80	0.90-1.10	≤0.03	≤0.03



## 04. Seamless Steel Pipe



ASTM SA335 Boiler Pipe

Product	Steel Code	Tensile Strength(MPa)	Yield Strength(MPa)	Elongation Percent(%)	Impact Power(J)	Rigidity
ASME SA335	SA335 P11	≥415	≥205	≥22	≥35	≤163HB
	SA335 P12	≥415	≥200	≥22	≥35	≤163HB
	SA335 P22	≥415	≥205	≥22	≥35	≤163HB
	SA335 P5	≥415	≥205	≥22	≥35	≤187HB
	SA335 P91	585 ~ 760	≥415	≥20	≥35	≤250HB
	SA335 P92	≥620	≥440	≥20	≥35	≤250HB

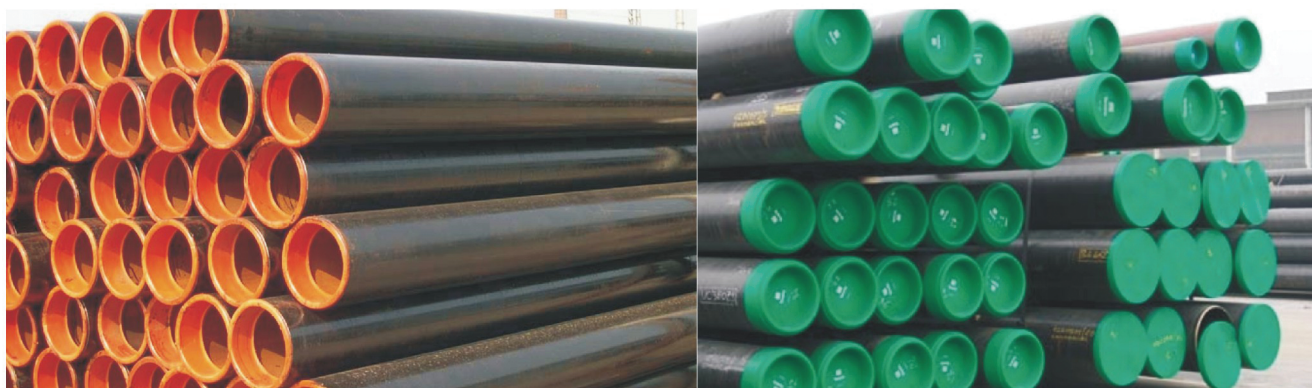
Chemical Composition

Product	Steel Code	Chemical Composition (%)													
		C	Si	Mn	P	S	Cr	Mo	Cu	Ni	V	Al	W	Nb	N
ASME SA335	SA335 P11	0.05 ~ 0.15	0.05 ~ 1.0	0.30 ~ 0.60	≤0.030	≤0.030	1.00 ~ 1.50	0.50 ~ 1.00							
	SA335 P12	0.05 ~ 0.15	≤0.50	0.30 ~ 0.61	≤0.030	≤0.030	0.80 ~ 1.25	0.44 ~ 0.65							
	SA335 P22	0.05 ~ 0.15	≤0.50	0.30 ~ 0.60	≤0.030	≤0.030	1.90 ~ 2.60	0.87 ~ 1.13							
	SA335 P5	≤0.15	≤0.50	0.30 ~ 0.60	≤0.030	≤0.030	4.00 ~ 6.00	0.45 ~ 0.65							
	SA335 P91	0.08 ~ 0.12	0.20 ~ 0.50	0.30 ~ 0.60	≤0.020	≤0.010	8.00 ~ 9.50	0.85 ~ 1.05		≤0.40	0.18 ~ 0.25	≤0.015		0.06 ~ 0.10	0.03 ~ 0.07
	SA335 P92	0.07 ~ 0.13	≤0.50	0.30 ~ 0.60	≤0.020	≤0.010	8.50 ~ 9.50	0.30 ~ 0.60	B0.001 ~ 0.006	≤0.40	0.15 ~ 0.25	≤0.015	1.50 ~ 2.00	0.04 ~ 0.09	0.03 ~ 0.07

Type of Steel Pipes	OD(D)		WT(S)	
	OD(mm)	Tolerance (mm)	Wall Thickness(mm)	Tolerance (mm)
Cold Drawn Steel Pipe	>30 ~ 50	±0.3	>3 ~ 20	±10%
	>114 ~ 159	±0.8%	≤30	±10%
	>159 ~ 219	±1.0%		
Hot Rolled Steel Pipe	>219 ~ 457	±1.0%	≤20	+10%, -12.5%
			>20 ~ 40	+10%, -10%



## API SPEC 5L Steel Pipe Line



### Specification for Line Pipe

GB/T 3639 Cold drawn or cold rolled precision seamless steel tubes

GB/T 8713 inside precision seamless tubes for hydraulic pressure and pneumatic services

Application: for auto use; for machinery use; /Oil cylinder tube; /Motorcycle shock reducer steel tubes; /Auto shock reducer inner cylinder

Size(mm) : O. D. :  $\Phi 10.3 \sim 609.6$ mm

W.T: 1.7~36mm L: max 12000mm

### Features Specifications:

Line Pipe	
Application:	It is used for conveying gas, water, and petroleum of both the oil and natural gas industries.

### Grade and Chemical Composition(%)

Standard	Grade	Chemical Composition(%)			
		C	Mn	P	S
	B	$\leq 0.28$	$\leq 1.20$	$\leq 0.030$	$\leq 0.030$
	X42	$\leq 0.28$	$\leq 1.30$	$\leq 0.030$	$\leq 0.030$
	X46, X52	$\leq 0.28$	$\leq 1.40$	$\leq 0.030$	$\leq 0.030$

### Mechanical Properties (MPa) (PSL1) : Grade and Chemical Composition(%)

Standard	Grade	(MPa)	(MPa)	A%	Standard	Grade	(MPa)	(MPa)	A%	(J)				
API SPEC 5L	PSL1					API SPEC 5L	PSL2							
	$\geq$													
		psi	MPa	psi	MPa		MIN(%)		Min	Max	Min	Max		
	B	35,000	241	60,000	414		21~27	B	241	448	414	758	21~27	41(27)
	X42	42,000	290	60,000	414		21~27	X42	290	496	414	758	21~27	41(27)
	X46	46,000	317	63,000	434		20~26	X46	317	524	434	758	20~26	41(27)
X52	52,000	359	66,000	455	20~24	X52	359	531	455	758	20~24	41(27)		

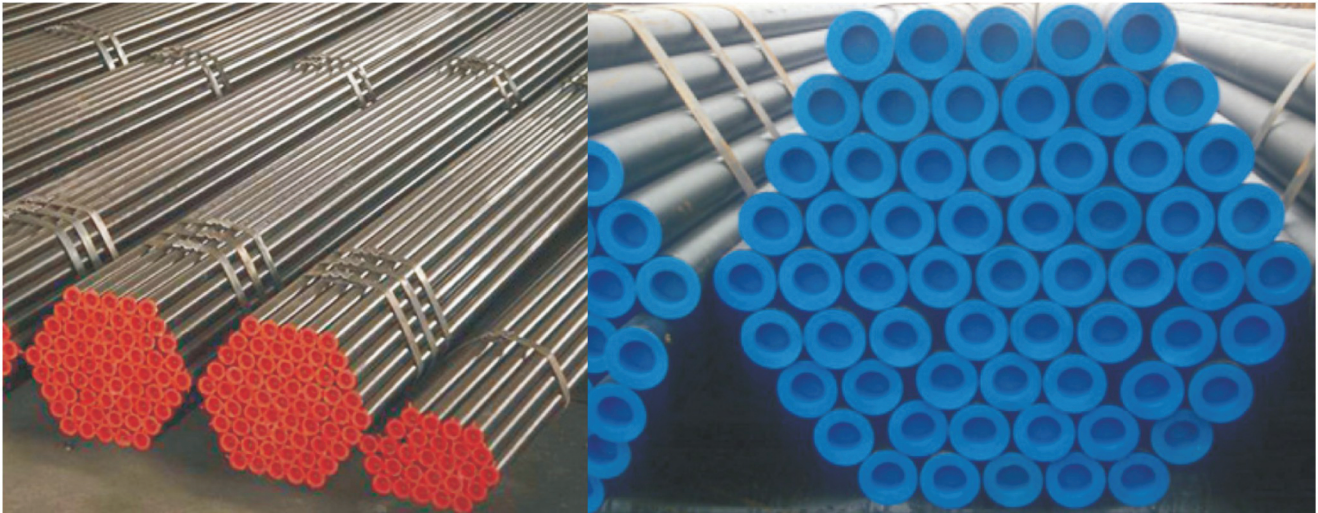
### Mechanical Properties (MPa) (PSL2) :

Standard	Grade	Chemical Composition(%)				
		C	Mn	TI	P	S
	B	$\leq 0.24$	$\leq 1.20$	$\leq 0.04$	$\leq 0.025$	$\leq 0.015$
	X42	$\leq 0.24$	$\leq 1.30$	$\leq 0.04$	$\leq 0.025$	$\leq 0.015$
	X46, X52	$\leq 0.24$	$\leq 1.40$	$\leq 0.04$	$\leq 0.025$	$\leq 0.015$





## ASTM SA213 Alloy Steel Tubes



Seamless Ferritic and Austenitic Alloy Steel Tubes for Boiler, Superheater and Heat Exchanger

Size(mm): O.D.: 28-168

W.T.: 2~30 L: max 12000

Description:

- 1、 Specification: ASTM A213(ASME SA213)
- 2、 The major products use: apply to the overheated boiler and used in the minimum thickness of ferrite and seamless steel pipes and heat exchangers used in austenitic pipe
- 3、 The main products of steel / steel-class:T11;T22
- 4、 Specifications: diameter: 320 to 127 mm thickness: 0.4 to 12.7 mm Length: 6m above, and, in accordance with customer demand, we can supply other specifications of steel pipe
- 5、 Chemical and mechanical properties

Alloy Steel Pipe Pipes Tubing Features Specifications:

Standard Specification for Seamless Ferritic and Austenitic Alloy-Steel oiler, Superheater,and Heat-Exchanger Tubes	
Application:	For manufacturing wall panel,economizer,superheater and steam pipeline of boilers

Grade and Chemical Composition(%)

Grade	C	Mn	P≤	S≤	Si	Cr	Mo
T11	0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	0.50-1.00	1.00-1.50
T12	0.05-0.15	0.30-0.61	0.025	0.025	≤0.50	0.80-1.25	0.44-0.65
T13	0.05-0.15	0.30-0.60	0.025	0.025	≤0.50	1.90-2.60	0.87-1.13

Mechanical Properties(MPa):

Grade	Tensile Point	Yield Point
T11	≥415	≥205
T12	≥415	≥220
T13	≥415	≥205



## Stainless Steel Pipe



Item: 304/304L(1. 4301/1. 4307)316/316L(1. 4401/1. 4404); 316Ti(1. 4571); 321(1. 4541); 310S(1. 4845); 317L(1. 1138); 321H(1. 4878); 304H(1. 4948); 347H(1. 4551); 2205(1. 4462)

Standard: GB/T 14976 ; GB 13296 ; GB5310 ; GB9948 ASTM : A213 ; A269 ; A312 ; A511 ; A789 ; A790 DIN : 17456 ; 17458

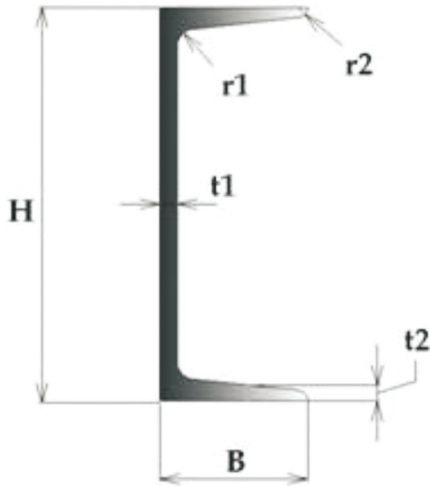
JIS: G3459 ; G3463 GOST 9940;GOST 9941;

(WT)mm (OD)mm	0.6-0.8	0.9-1.2	1.3-1.6	1.7-2.2	2.3-2.9	3-4.5	4.6-5.5	5.6-7.5	7.6-9	9.1-12	12.1-16	16.1-24	24.1-32
5-7	●	●	●	●	●								
8-10	●	●	●	●	●	●							
11-16	●	●	●	●	●	●							
17-25	●	●	●	●	●	●	●						
26-35		●	●	●	●	●	●						
36-45			●	●	●	●	●						
46-56			●	●	●	●	●	●	●				
57-65				●	●	●	●	●	●				
66-76					●	●	●	●	●	●			
77-100					●	●	●	●	●	●			
101-114						●	●	●	●	●			
115-133						●	●	●	●	●	●	●	●
134-159						●	●	●	●	●	●	●	●
160-219						●	●	●	●	●	●	●	●
220-273							●	●	●	●	●	●	●
274-325								●	●	●	●	●	●



05、Section Steel

Channel Bar



Section Dimension (mm)			Unit Weight (kg/m)
H×B	t1	t2	
75×40	5	7	6.92
100×50	5	7.5	9.36
125×65	6	8	13.4
150×75	6.5	10	18.6
150×75	9	12.5	24.0

Steel Grade	Yield Strength		Tensile Strength (Mpa)	Elongation		180° Cold-bend Test "r"-Inside Radius "a"-Thickness	A <sub>KV</sub> (°C) /J	
	Thickness (mm)	$\sigma_b \geq$ (Mpa)		Thickness or Diameter (mm)	$\delta \geq$ (%)			
SS330	≤16	205	330-430	Plate, Strip, Flat Bar		r=0.5a	-	
				≤5	26			
	5-16	21						
	16-50	26						
	>16-≤40	195		>40	28	Steel Bar, Angle		
	>40	175		≤25	25	>25		30
SS400	≤16	245	400-510	Plate, Strip, Flat Bar		r=1.5a	-	
				≤5	21			
	5-16	17						
	16-50	21						
	>16-≤40	235		>40	23	Steel Bar, Angle		
	>40	215		≤25	20	>25		24
SM490A	≤16	325	490-610	≤5	22	-	-	
	>16-≤40	315		5-16	17			
	>40	295		16-50	21			
				>40	23			
SM490B	≤16	325	490-610	≤5	22	-	34	
	>16-≤40	315		5-16	17			
	>40	295		16-50	21			
				>40	23			

