



SANON PIPE
正能国际

Tianjin Sanon Steel Pipe Co.,Ltd



📍 Wuliyao industry area ,Yanshan County Cangzhou city, Hebei Province

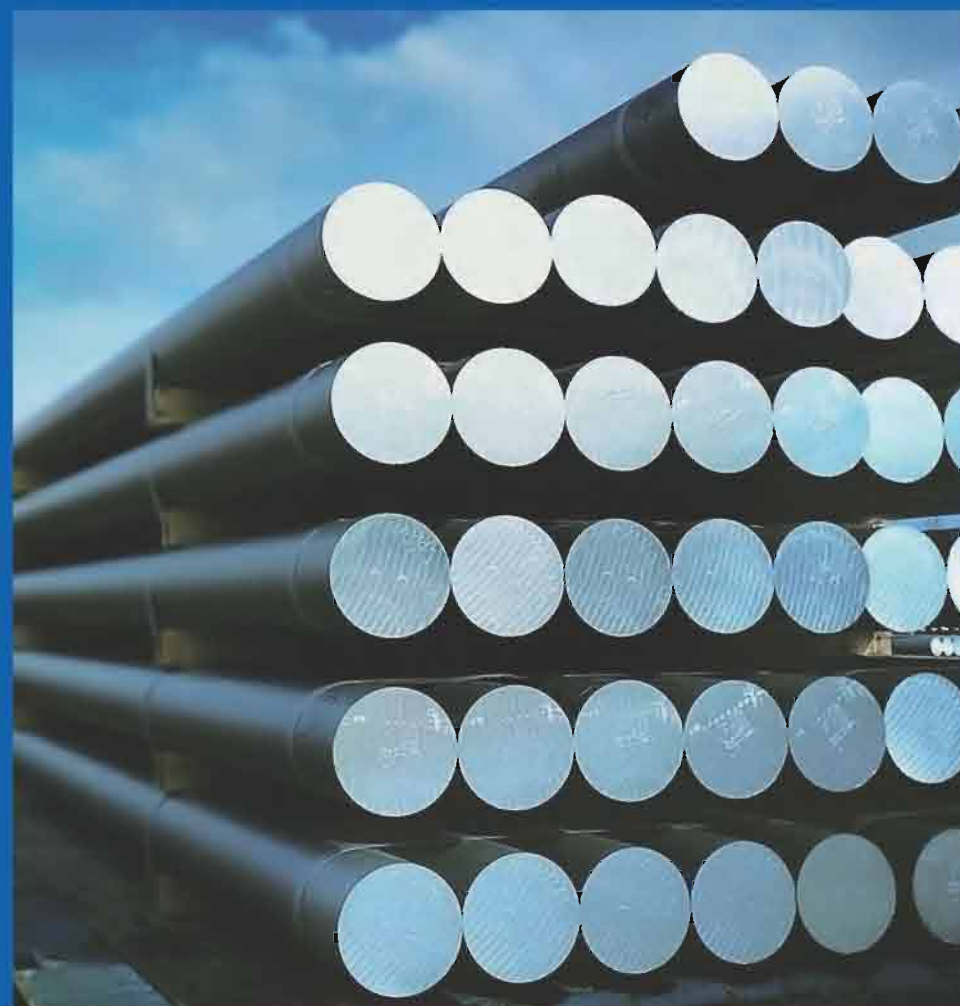
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Company Introduction

公司介绍

Tianjin Sanon Steel Pipe Co.,Ltd Is The Branch Company And International Department For Hebei Hong Cheng Pipe Fitting Company

We Are One Professional Enterprise That Integrates Pipe Production, Selling And Exports. The Company Was Founded In 1992. It Covers An Area Of 0.1 Million Square Meters. There Are 520 Employees, 3 Of Them Are Senior Engineers,12 Of Them Engineers And 150 Of Them Professional Technical Workers. The Annual Production Capacity Is More Than 20,000 Tons, And The Pipe Turnover Is More Than 50,000 Tons.

The Company Has Passed ISO9001 International Quality Management System Certification, ISO14001 Environmental Management System Certification, OHSAS18001 Occupational Health And Safety Management System Certification, Pressure Pipeline Special Equipment Manufacturing License, China Classification Society Certification, China Power Accessories Factory Network Members Authentication And China's Chemical Equipment Corporation Supply Network Members Authentication And So On.

The Company Has Advance Production Equipment, Complete Detection Equipment And Strong Technology Power. The Leading Products Are Steel Pipe Fitting Accessories (Elbows, Bends, Tees, Cross Tees, Reducers, Capping Heads, Flanges, Hangers, Socket Components) Series Products.



There Are 420 Sets Of Key Equipment Such As Pushing Machines, Presses, Large Heat Treatment Furnaces, Groove Machines, Saws, Tee Extrusion Machines, Plywood Hammers, Large Sandblasting Machine And Etc.

The Company Is Equipped With More Than 20000 Tons Of All Kinds Of Special Steel Tubes. The Materials Includes SA106B,20G,Q345,12Cr1MoVG,15CrMoG,1Cr5Mo,1Cr9Mo, 10CrMo910,A335P5/P9/P11/P12/P22/P91/P92,WB36 Steel Pipe Producing Areas Are Mainly TpcO Seamless, Shanghai Bao Steel, Chengdu Steel Vanadium, Yangzhou Chengde, Hengyang Steel, Baotou Steel Group And Yangzhou Longchuan. And It Has Become A "Authorized Dealer",

Electric Power, Metallurgy, City Gas, Heat Pipe Network, Shipbuilding And Other Pipeline Engineering.The Company Is Keeping To Its Ideal Of Holding Up To The Quality Brands For Overtaking Markets And To Win Customers By Honesty And Trust. Our Products Are Selling Across The Globe In Areas Like Southeast Asia, The Middle East, North America And South America.

Looking Head, We Decide To Serve Our Customer With Our Authentic Goods, Great Service And Sincere Attitudes And To Build A Bright Future Together.



Features

特点

1

我们是生产厂家

We are a manufacturer.



2

我们专业做
合金钢管30年

We specialized in
alloy steel pipes
for 30 years

3

我们每年库存
20000吨

We stock 20,000
tons yearly.



4

我们公司是国内较大的
合金管厂的库存集合地，
价格合适，交货期快，
外贸团队专业！

Our company is a large
domestic alloy pipe factory
inventory gathering place, the
price is appropriate, the delivery
time is fast, and professional
foreign trade team.



Company Qualifications

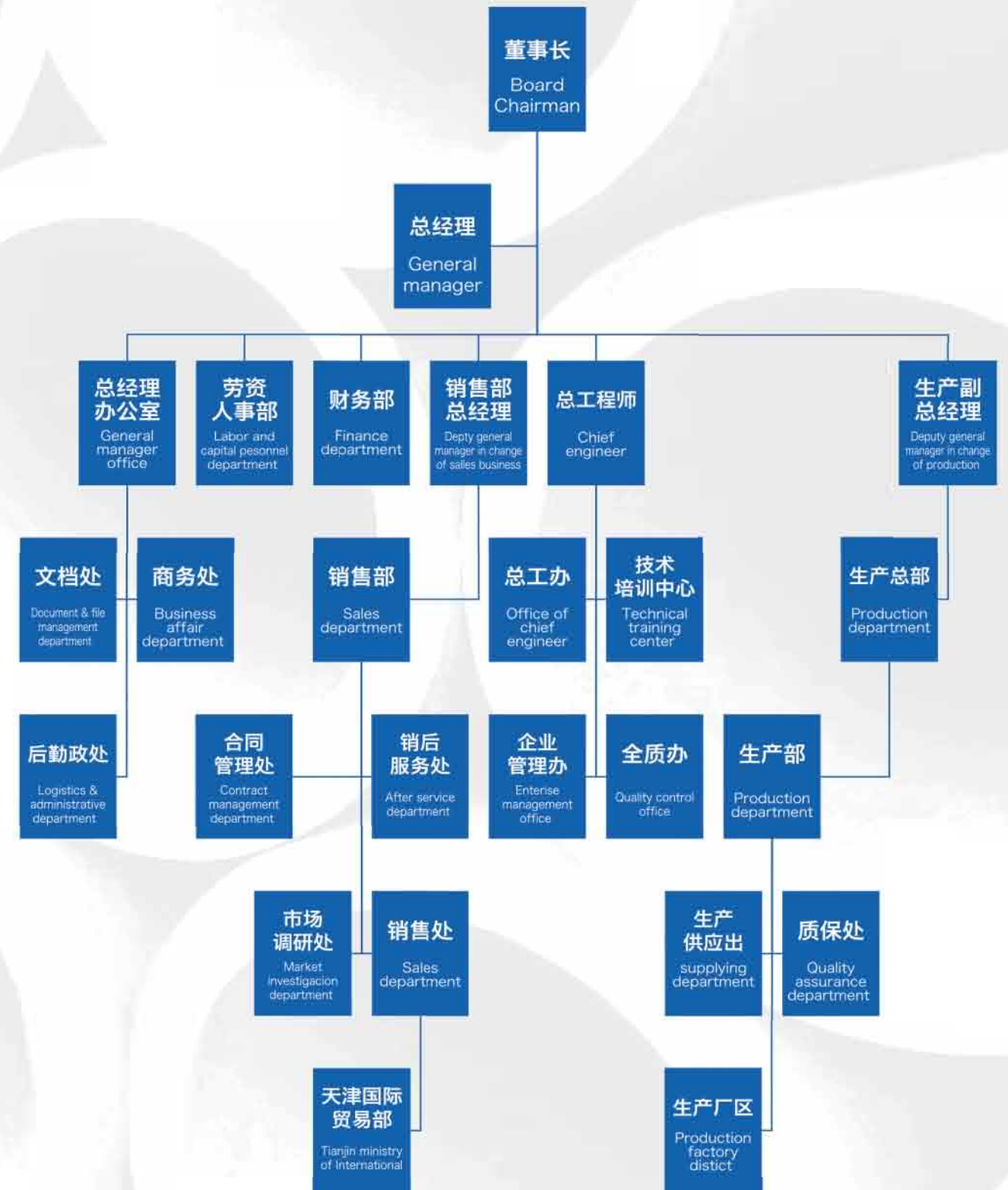
公司资质

营业执照/ISO/IQNET/3A



Organizational Structure Of The Company

公司组织结构



生产工艺 Production Process

无缝管件制造工艺流程

Seamless pipe fittings manufacturing process



切割下料
Material cutting

中频加热成型
Intermediate frequency hot forming

校型
Calibration

热处理
Heat treatment



表面处理
Surface treatment

端部加工
Processing at end

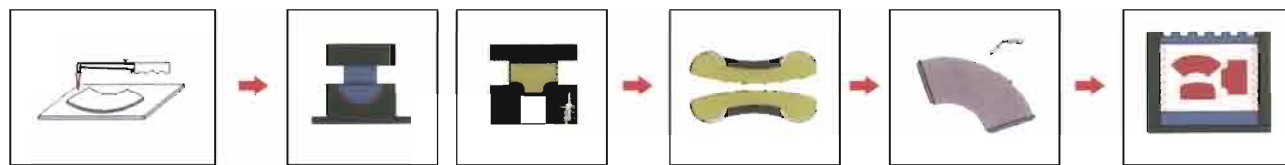
无损检测
Non-destructive testing

喷漆/标志
Painting & Marking

包装储运
Packing & Delivery

焊缝管件制造工艺流程

Welded pipe fittings manufacturing process



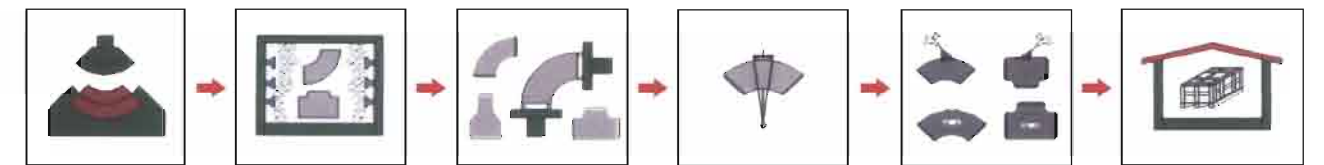
切割下料
Material cutting

热压成型
Hot forming

对焊定位
Butt welding positioning

焊接成型
Welding

热处理
Heat treatment



校型
Calibration

表面处理
Surface treatment

端部加工
Processing at end

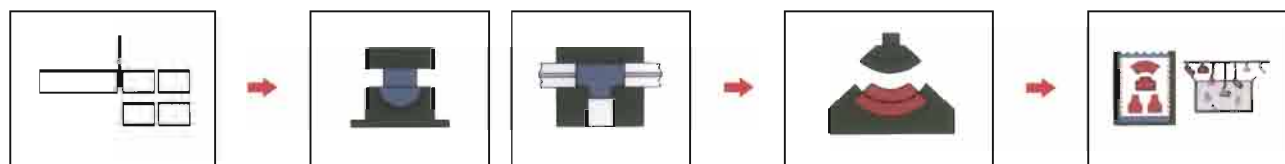
无损检测
Non-destructive testing

喷漆/标志
Painting & Marking

包装储运
Packing & Delivery

不锈钢管件制造工艺流程

Stainless steel pipe fittings manufacturing process

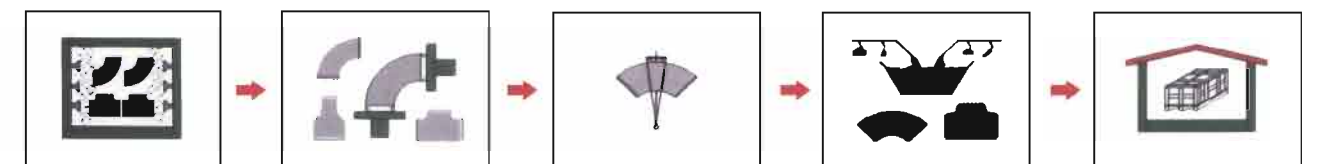


切割下料
Material cutting

冷压成型
Cold forming

校型
Calibration

固溶处理
Solution treatment



表面处理
Surface treatment

端部加工
Processing at end

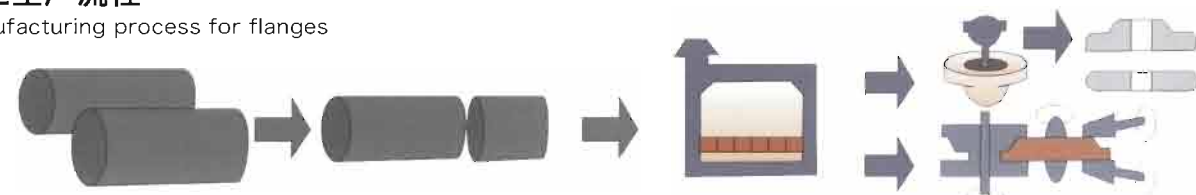
无损检测
Non-destructive testing

酸洗钝化/标志
Pickling & Marking

包装储运
Packing & Delivery

法兰生产流程

Manufacturing process for flanges

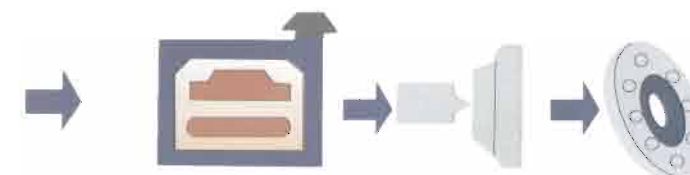


材料
Material

锻料
Material Sectioning

加热
Heating

锻造
Forging



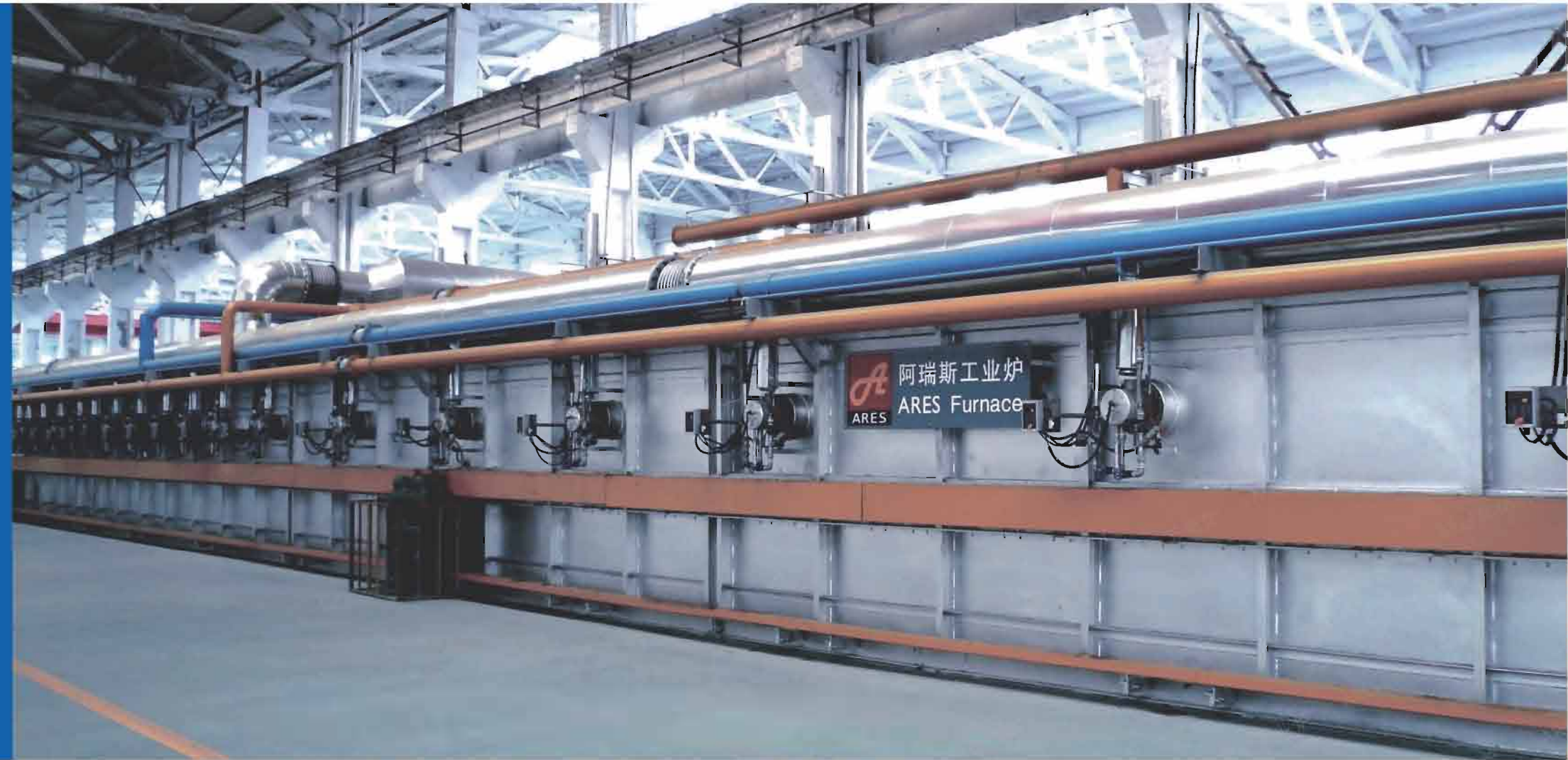
热处理
Heat treatment

切削
Cutting

检查
Check

Production Equipments

生产设备



Testing Equipments

检测设备



主要产品 Main Products

Boiler Pipes

锅炉管

标准:

- ASME SA106 高温用无缝碳钢公称管
- ASME SA179 换热器及冷凝器用无缝冷拔低碳钢管子
- ASME SA192 高压用无缝碳钢锅炉管子
- ASME SA210 锅炉和过热器用无缝中碳钢管子
- ASME SA213 锅炉、过热器和换热器用无缝铁素体和奥氏体合金钢管子
- ASME SA335 高温用无缝铁素体合金钢公称管
- DIN17175 用耐热钢制成的无缝钢管
- EN10216-2 规定高温性能的非合金钢和合金钢管
- GB5310 高压锅炉用无缝钢管
- GB3087 低中压锅炉用无缝钢管



钢级:

高低中压锅炉用无缝钢管 Seamless steel tubes for high / low and medium pressure boilers	10.20 等	GB3087	用于制造各种低压和中压锅炉用的优质碳素结构钢无缝钢管 High quality carbon structural seamless steel pipes for manufacturing of different kinds of low and medium pressure boilers.
	SA106B、SA106C	ASME SA106	
	SA179/ SA192/ SA210A1、SA210C/ T11、T12、T22、T23、T91、T92	ASME SA179/ 192/210/213	
	P11、P12、P22、P23、P36、P91、P92	ASME SA335	
	ST35.8、ST45.8、15Mo3、13CrMo44、10CrMo910	DIN17175	
	P195GH、P235GH、P265GH、16Mo3、	EN10216-2	
	20G、20MnG、25MnG、15CrMoG、12Cr1MoVG、12Cr2MoG	GB5310	

Note: Other Size Can Also Be Provided After Consulting With Customers



主要产品 Main Products

Boiler Pipes

锅炉管

GB5310-2008 钢的牌号和化学成分及力学性能:

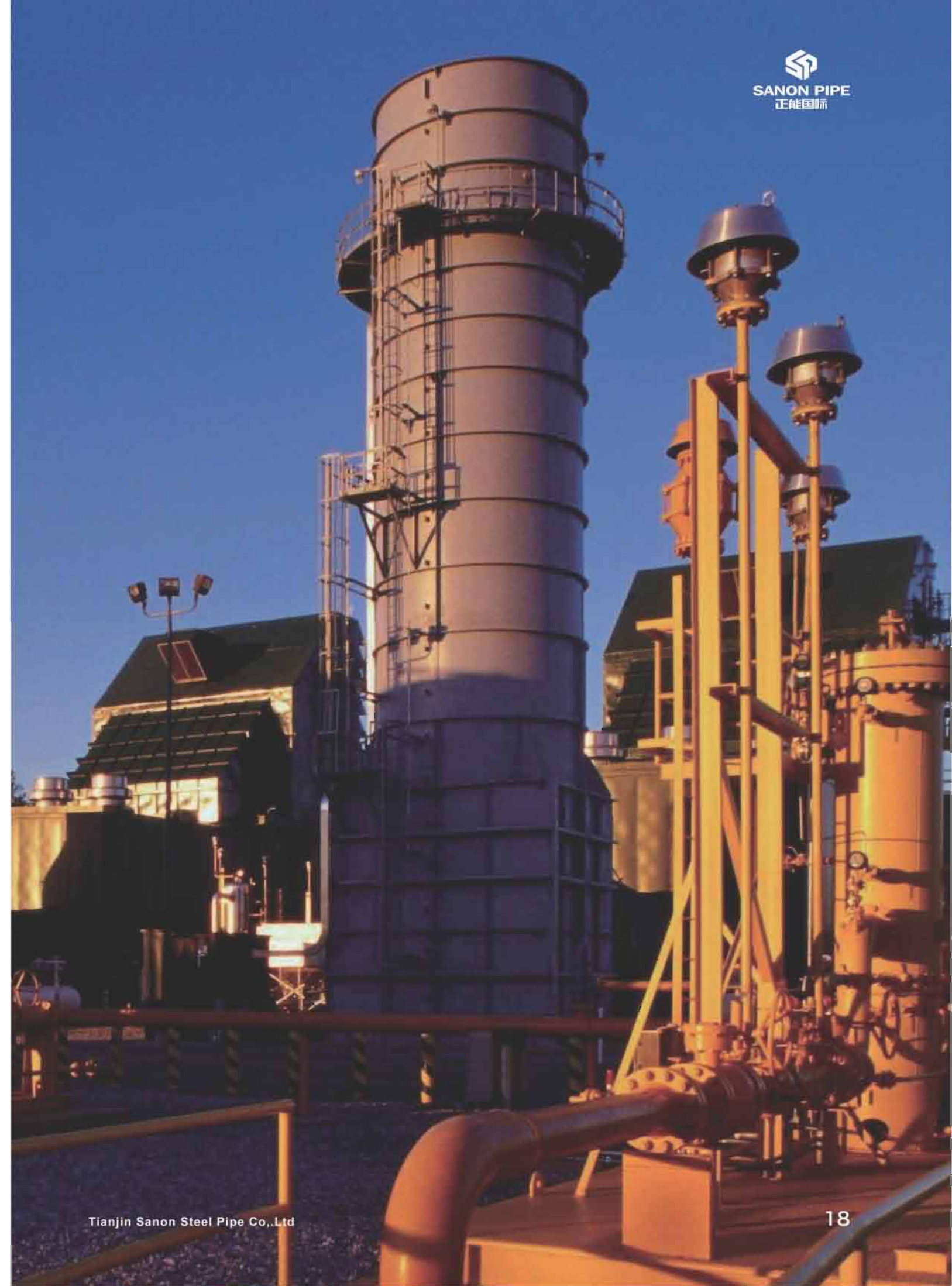
GB5310-2008 Chemical Component

no	grade	Chemical Component %														Mechanical Property						
		C	Si	Mn	Cr	Mo	V	Ti	B	Ni	Alt	Cu	Nb	N	W	P	S	Tensile MPa	Yield MPa	Extend L/T	Impact (J) 冲击功	hardness HB
1	20G	0.17-0.23	0.17-0.37	0.35-0.65	≤0.25	≤0.15	≤0.08	—	—	≤0.25	—	≤0.20	—	—	—	≤0.025	≤0.015	410-550	≥245	24/22%	40/27	—
2	20MnG	0.17-0.23	0.17-0.37	0.70-1.00	≤0.25	≤0.15	≤0.08	—	—	≤0.25	—	≤0.20	—	—	—	≤0.025	≤0.015	415-560	≥240	22/20%	40/27	—
3	25MnG	0.22-0.27	0.17-0.37	0.70-1.00	≤0.25	≤0.15	≤0.08	—	—	≤0.25	—	≤0.20	—	—	—	≤0.025	≤0.015	485-640	≥275	20/18%	40/27	—
4	15MoG	0.12-0.20	0.17-0.37	0.40-0.80	≤0.30	0.25-0.35	≤0.08	—	—	≤0.30	—	≤0.20	—	—	—	≤0.025	≤0.015	450-600	≥270	22/20%	40/27	—
6	12CrMoG	0.08-0.15	0.17-0.37	0.40-0.70	0.40-0.70	0.40-0.65	≤0.08	—	—	≤0.30	—	≤0.20	—	—	—	≤0.025	≤0.015	410-560	≥205	21/19%	40/27	—
7	15CrMoG	0.12-0.18	0.17-0.37	0.40-0.70	0.80-1.10	0.40-0.55	≤0.08	—	—	≤0.30	—	≤0.20	—	—	—	≤0.025	≤0.015	440-640	≥295	21/19%	40/27	—
8	12Cr2MoG	0.08-0.15	≤0.50	0.40-0.60	2.00-2.50	0.90-1.13	≤0.08	—	—	≤0.30	—	≤0.20	—	—	—	≤0.025	≤0.015	450-600	≥280	22/20%	40/27	—
9	12Cr1MoVG	0.08-0.15	0.17-0.37	0.40-0.70	0.90-1.20	0.25-0.35	0.15-0.30	—	—	≤0.30	—	≤0.20	—	—	—	≤0.025	≤0.015	470-640	≥255	21/19%	40/27	—
10	12Cr1MoV7B	0.08-0.15	0.45-0.75	0.45-0.65	1.60-2.10	0.50-0.65	0.28-0.42	0.08-0.18	0.002-0.008	≤0.30	—	≤0.20	—	—	0.30-0.55	≤0.025	≤0.015	540-735	≥345	18/-%	40/-	—

GB5310-2008 Chemical Component

no	grade	Chemical Component %														Mechanical Property						
		C	Si	Mn	Cr	Mo	V	Ti	B	Ni	Alt	Cu	Nb	N	W	P	S	Tensile MPa	Yield MPa	Extend L/T	Impact (J) 冲击功	hardness HB
14	10Cr9Mo1VNbN	0.08-0.12	0.20-0.50	0.30-0.60	8.00-9.50	0.85-1.05	0.18-0.25	≤0.01	—	≤0.40	≤0.020	≤0.20	0.06-0.10	0.030-0.070	—	≤0.020	≤0.010	≥585	≥415	20/16%	40/27	≤250
15	10Cr9Mo2VNbN	0.07-0.13	≤0.50	0.30-0.60	8.50-9.50	0.30-0.60	0.15-0.25	≤0.01	0.0010-0.0030	≤0.40	≤0.020	≤0.20	0.40-0.09	0.030-0.070	1.50-2.00	≤0.020	≤0.010	≥620	≥440	20/16%	40/27	≤250

note: Alt is holo-al content 2 grade 08Cr18Ni11NbFG of "FG" is mean fine grain,a. no special request, can not add other chemical compinent b.grade 20G of Alt ≤ 0.015%, , no working request, but should be showing on MTC



主要产品 Main Products

Mechanics &
Structure Tubes/Pipes

机械-工程用管

SIZE: 19—914mm*2—150mm

产品类别 Product category	钢管牌号 Steelgrade	执行标准 Standard	用途 Application
机械工程和一般结构用无缝钢管 Seamless steel tubes for mechanical engineering and normal structure	10.20.35.45.Q345.Q460.Q490.Q620.42CrMo.35CrMo.42CrMo.40CrNiMoA.12cr1MoV	GB/T8162	用于制造管道设备管件及机械结构用无缝钢管
	1018.1026.8620.4130.4140	ASTM A519	Seamless steel tubes for manufacturing pipelines pipe fittings equipments and mechanical structures
	S235JRH. S273JOH. S275J2H. S355JOH. S355NLH.S355J2H	EN10210	
	A53A.A53B.SA53A.SA53B	ASTM A53/ASME SA53	

Note: Other Size Can Also Be Provided After Consulting With Customers



化学成分:

材质	C	Si	Mn	Mo	Cr	V
12Cr1MoV	0.08~0.15	0.17~0.37	0.40~0.70	0.25~0.35	0.90~1.20	0.15~0.30

力学性能:

牌号	抗拉强度 (MPa)	屈服强度 (MPa)	伸长率 (%)	断面收缩率 (ψ/%)	冲击吸收功 (Aku2/J)	冲击韧性值 αkv (J/cm2)	布氏硬度 (HBS100/3000)
12Cr1MoV	≥490	≥245	≤22	≥50	≥71	≥88(9)	≤179

用途: 此类钢制造的无缝钢管被广泛用于液压支柱、高压气瓶、高压锅炉、化肥设备、石油裂化、汽车半轴套、柴油机、液压管件等用管。



主要产品 Main Products

Line Pipes

管线管

Standard:

API Spec 5L line pipes

GB/T9711 Petroleum And Gas Line Pipes

Size: 21.3-914mm*2-150mm

<p>石油天然气 工业输送钢管 Pipe-line seamless steel tubes for oil and gas industry</p>	<p>B/L245 X42/L290.X52/L360 X65/L450 X70</p>	<p>APLSPERC 5L GB/T9711.2</p>	<p>用于石油、天然气工业 中的输送管 Seamless steel tubes for pipe-lines of oil and gas industry</p>
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Note: Other Size Can Also Be Provided After Consulting With Customers



API_5L Line Pipe

PSL1 steel pipe chemical component																
序号	牌号	chemical component %											Mechanical Property			
		C	Mn	P	S	V	Nb	Ti	Cu	Ni	Cr	Mo	B	Tensile MPa	Yield MPa	Extend L/T
seamless steel pipe																
4	L245或B	≤0.28	≤1.20	≤0.030	≤0.030	Nb+V≤0.06Nb+V+Ti≤0.15		≤0.50	≤0.50	≤0.50	≤0.15	≤0.001	≥415	≥245	≥23%	
5	L290或X42	≤0.28	≤1.30	≤0.030	≤0.030	Nb+V+Ti≤0.15		≤0.50	≤0.50	≤0.50	≤0.15	≤0.001	≥415	≥290	≥23%	
7	L360或X52	≤0.28	≤1.40	≤0.030	≤0.030	Nb+V+Ti≤0.15		≤0.50	≤0.50	≤0.50	≤0.15	≤0.001	≥460	≥360	≥21%	
8	L390或X56	≤0.28	≤1.40	≤0.030	≤0.030	Nb+V+Ti≤0.15		≤0.50	≤0.50	≤0.50	≤0.15	≤0.001	≥490	≥390	≥20%	
	L415或X60	≤0.28	≤1.40	≤0.030	≤0.030	Nb+V+Ti≤0.15		≤0.50	≤0.50	≤0.50	≤0.15	≤0.001	≥520	≥415	≥19%	
9	L450或X65	≤0.28	≤1.40	≤0.030	≤0.030	Nb+V+Ti≤0.15		≤0.50	≤0.50	≤0.50	≤0.15	≤0.001	≥535	≥450	≥18%	
	L485或X70	≤0.28	≤1.40	≤0.030	≤0.030	Nb+V+Ti≤0.15		≤0.50	≤0.50	≤0.50	≤0.15	≤0.001	≥570	≥485	≥17%	

Note: more than most compinent, C reduce 0.01%, and the Mn should be increased 0.05% than most.
 when grade ≥L245or B but ≤L360 or X52 the most Mn is 1.65%
 when grade >L360 or X52 but <L485 or X70 the most Mn is 1.75%
 grade L485 or X70 the most Mn is 2.00%



主要产品 Main Products

Line Pipes

管线管



API 5L PSL2 管线钢管规范

		PSL2钢管化学成分														碳当量		力学性能			
序号	牌号	化学成分 (质量分数) / %														CE _{IIW}	CE _{Pcm}	抗拉 MPa	屈服 MPa	屈强比	延伸 %/mm
		C	Si	Mn	P	S	V	Nb	Ti	Cu	Ni	Cr	Mo	B							
无缝管和焊管																					
1	L245R或B	≤0.24	≤0.40	≤1.20	≤0.025	≤0.015	Nb+V≤0.06	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	415-655	245-450	0.93	≥23%		
2	L290R或X42R	≤0.24	≤0.40	≤1.20	≤0.025	≤0.015	≤0.06	≤0.05	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	415-655	290-495	0.93	≥23%	
3	L245N或B	≤0.24	≤0.40	≤1.20	≤0.025	≤0.015	Nb+V≤0.06	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	415-655	245-450	0.93	≥23%		
4	L290N或X42N	≤0.24	≤0.40	≤1.20	≤0.025	≤0.015	≤0.06	≤0.05	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	415-655	290-495	0.93	≥23%	
5	L320N或X46N	≤0.24	≤0.40	≤1.40	≤0.025	≤0.015	≤0.07	≤0.05	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	435-655	320-525	0.93	≥22%	
6	L360N或X52N	≤0.24	≤0.45	≤1.40	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	460-760	360-530	0.93	≥21%	
							Nb+V+Ti≤0.16														
7	L390N或X56N	≤0.24	≤0.45	≤1.40	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	490-760	390-545	0.93	≥20%	
							Nb+V+Ti≤0.16														
8	L415N或X60N	≤0.24	≤0.45	≤1.40	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤0.50	≤0.50	≤0.50	≤0.001	依照协议		520-760	415-565	0.93	≥19%	
							Nb+V+Ti≤0.15														
9	L245Q或BQ	≤0.18	≤0.45	≤1.40	≤0.025	≤0.015	≤0.05	≤0.05	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	415-655	245-450	0.93	≥23%	
10	L290Q或X42Q	≤0.18	≤0.45	≤1.40	≤0.025	≤0.015	≤0.05	≤0.05	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	415-655	290-495	0.93	≥23%	
11	L320Q或X46Q	≤0.18	≤0.45	≤1.40	≤0.025	≤0.015	≤0.05	≤0.05	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	435-655	320-525	0.93	≥22%	
12	L360Q或X52Q	≤0.18	≤0.45	≤1.50	≤0.025	≤0.015	≤0.05	≤0.05	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	460-760	360-530	0.93	≥21%	

		PSL2钢管化学成分														碳当量		力学性能			
序号	牌号	化学成分 (质量分数) / %														CE _{IIW}	CE _{Pcm}	抗拉 MPa	屈服 MPa	屈强比	延伸 %/mm
		C	Si	Mn	P	S	V	Nb	Ti	Cu	Ni	Cr	Mo	B							
无缝管和焊管																					
13	L390Q或X56Q	≤0.18	≤0.45	≤1.50	≤0.025	≤0.015	≤0.07	≤0.05	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	490-760	390-545	0.93	≥20%	
14	L415Q或X60Q	≤0.18	≤0.45	≤1.70	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤0.50	≤0.50	≤0.50	≤0.001	≤0.43	≤0.25	520-760	415-565		≥19%	
15	L450Q或X65Q	≤0.18	≤0.45	≤1.70	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤0.50	≤0.50	≤0.50	≤0.001	≤0.43	≤0.25	535-760	450-600		≥18%	
16	L485Q或X70Q	≤0.18	≤0.45	≤1.80	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤0.50	≤0.50	≤0.50	≤0.001	≤0.43	≤0.25	570-760	485-635		≥17%	
17	L555Q或X80Q	≤0.18	≤0.45	≤1.90	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤1.00	≤0.50	≤0.50	≤0.004	依照协议		625-825	555-705		≥16%	

备注：碳含量比规定最大碳含量每减少0.01%，则允许锰含量比规定最大锰含量增加0.05%。对于钢级≥L245或B但≤L360或X52的钢级，最大含锰量为1.65%；对于钢级>L360或X52但<L485或X70的钢级，最大含锰量为1.75%；对于钢级≥L485或X70但≤L555或X80最大含锰量不得超过2.00%，对于钢级>L555或X80最大含锰量不得超过2.20%。

		PSL2钢管化学成分														碳当量		力学性能			
序号	牌号	化学成分 (质量分数) / %														CE _{IIW}	CE _{Pcm}	抗拉 MPa	屈服 MPa	屈强比	延伸 %/mm
		C	Si	Mn	P	S	V	Nb	Ti	Cu	Ni	Cr	Mo	B							
焊管																					
20	L245M或BM	≤0.22	≤0.45	≤1.20	≤0.025	≤0.015	≤0.05	≤0.05	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	415-655	245-450	0.93	≥23%	
21	L290M或X42M	≤0.22	≤0.45	≤1.30	≤0.025	≤0.015	≤0.05	≤0.05	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	415-655	290-495	0.93	≥23%	
22	L320M或X46M	≤0.22	≤0.45	≤1.30	≤0.025	≤0.015	≤0.05	≤0.05	≤0.04	≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	435-655	320-525	0.93	≥22%	
23	L360M或X52M	≤0.22	≤0.45	≤1.40	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	460-760	360-530	0.93	≥21%	
24	L390M或X56M	≤0.22	≤0.45	≤1.40	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤0.30	≤0.30	≤0.15	≤0.001	≤0.43	≤0.25	490-760	390-545	0.93	≥20%	
25	L415M或X60M	≤0.12	≤0.45	≤1.60	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤0.50	≤0.50	≤0.50	≤0.001	≤0.43	≤0.25	520-760	415-565	0.93	≥19%	
26	L450M或X65M	≤0.12	≤0.45	≤1.60	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤0.50	≤0.50	≤0.50	≤0.001	≤0.43	≤0.25	535-760	450-600	0.93	≥18%	
27	L485M或X70M	≤0.12	≤0.45	≤1.70	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤0.50	≤0.50	≤0.50	≤0.001	≤0.43	≤0.25	570-760	485-635	0.93	≥17%	
28	L555M或X80M	≤0.12	≤0.45	≤1.85	≤0.025	≤0.015	Nb+V+Ti≤0.15			≤0.50	≤1.00	≤0.50	≤0.50	≤0.001	≤0.43	≤0.25	625-825	555-705	0.93	≥16%	

备注：碳含量比规定最大碳含量每减少0.01%，则允许锰含量比规定最大锰含量增加0.05%。对于钢级≥L245或B但≤L360或X52的钢级，最大含锰量为1.65%；对于钢级>L360或X52但<L485或X70的钢级，最大含锰量为1.75%；对于钢级≥L485或X70但≤L555或X80最大含锰量不得超过2.00%，对于钢级>L555或X80最大含锰量不得超过2.20%。

主要产品 Main Products

Petroleum, Chemical
and Fertilizer Pipes

石油、化工、化肥用管

标准:

ASTM A106	高温用无缝碳钢管
ASTM A213	锅炉、过热器和换热器用无缝铁素体和奥氏体合金钢管
ASTM A333	低温用无缝和焊接公称钢管
ASTM A335	高温用无缝铁素体合金钢公称管
EN10216-2	规定高温性能的非合金钢和合金钢管
GB9948	石油裂化用无缝钢管
GB6479	高压化肥设备用无缝钢管



钢级:

标准	钢级	OD	壁厚	备注
ASTM A106	106B、106C	21.3-914mm	2-150mm	管道钢管
ASTM A213	T5、T9、T11、T12、T22、T91	19-127mm	2-20mm	换热器钢管
ASTM A335	P5、P9、P11、P12、P22、P36、P91	60.3-914mm	2-150mm	管道钢管
ASTM A333	Gr6、Gr8、Gr10	21.3-914mm	2-80mm	低温管道钢管
EN10216-2	P195GH、P235GH、P265GH、16Mo3、13CrMo4-5、10CrMo9-10、15NiCuMoNb5-6-4(WB36)、X10CrMoVNb9-1、X20CrMoV11-1	19-914mm	2-150mm	压力管道钢管
GB9948	10、20、12CrMo、15CrMo、12Cr1MoV、12Cr2Mo、12Cr5Mo、12Cr9Mo	19-914mm	2-150mm	石油裂化用管
GB6479	10、20、Q345B\C\D\E、12CrMo、15CrMo、12Cr2Mo、12Cr5Mo、10MoWVNb、12SiMoVNb	19-914mm	2-150mm	高压化肥管



主要产品 Main Products

Petroleum, Chemical
And Fertilizer Pipes

石油、化工、化肥用管



ASME SA-335/SA-335M

NO.	Grade	Chemical Component %															Mechanical Property						
		C	Mn	P	S	Si	Cr	Mo	Ni	Cu	V	Nb	N	Al	Ti	Zr	W	B	Tensile MPa	Yield MPa	Extend L/T	hardness HB	
3	P5	≤0.15	0.30-0.60	≤0.025	≤0.025	≤0.50	4.00-6.00	0.45-0.65	—	—	—	—	—	—	—	—	—	—	—	≥415	≥205	≥22/14%	—
4	P5b	≤0.15	0.30-0.60	≤0.025	≤0.025	1.00-2.00	4.00-6.00	0.45-0.65	—	—	—	—	—	—	—	—	—	—	—	≥415	≥205	≥22/14%	—
5	P5c	≤0.12	0.30-0.60	≤0.025	≤0.025	≤0.50	4.00-6.00	0.45-0.65	—	—	—	8°C-10°C	—	—	4°C-0.70	—	—	—	—	≥415	≥205	≥22/14%	—
6	P9	≤0.15	0.30-0.60	≤0.025	≤0.025	0.25-1.00	8.00-10.00	0.90-1.10	—	—	—	—	—	—	—	—	—	—	—	≥415	≥205	≥22/14%	—
7	P11	0.05-0.15	0.30-0.60	≤0.025	≤0.025	0.50-1.00	1.00-1.50	0.44-0.65	—	—	—	—	—	—	—	—	—	—	—	≥415	≥205	≥22/14%	—
8	P12	0.05-0.15	0.31-0.60	≤0.025	≤0.025	≤0.50	0.80-1.25	0.44-0.65	—	—	—	—	—	—	—	—	—	—	—	≥415	≥205	≥22/14%	—
10	P21	0.05-0.15	0.30-0.60	≤0.025	≤0.025	≤0.50	2.65-3.35	0.80-1.06	—	—	—	—	—	—	—	—	—	—	—	≥415	≥205	≥22/14%	—
11	P22	0.05-0.15	0.30-0.60	≤0.025	≤0.025	≤0.50	1.90-2.60	0.87-1.13	—	—	—	—	—	—	—	—	—	—	—	≥415	≥205	≥22/14%	—

NO.	Grade	Chemical Component %															Mechanical Property							
		C	Mn	P	S	Si	Cr	Mo	Ni	Cu	V	Nb	N	Al	Ti	Zr	W	B	Tensile MPa	Yield MPa	Extend L/T	hardness HB		
14	P91	0.08-0.12	0.30-0.60	≤0.020	≤0.010	0.20-0.50	8.00-9.50	0.85-1.05	≤0.40	—	0.18-0.25	0.06-0.10	0.030-0.070	≤0.02	≤0.01	≤0.01	—	—	—	—	≥585	≥415	≥20/13%	≤250
15	P92	0.07-0.13	0.30-0.60	≤0.020	≤0.010	≤0.50	8.50-9.50	0.30-0.60	≤0.40	—	0.15-0.25	0.04-0.09	0.030-0.070	≤0.02	≤0.01	≤0.01	1.50-2.00	0.001-0.006	—	—	≥620	≥440	≥20/13%	≤250

GB9948-2013

NO.	Grade	Chemical Component %											Mechanical Property					
		C	Si	Mn	Cr	Mo	Ni	Nb	Ti	V	Cu	P	S	Tensile MPa	Yield MPa	Extend L/T	Impact(J) L/T	hardness HB
3	12CrMo	0.080.15	0.170.37	0.400.70	0.400.70	0.400.55	≤0.30	—	—	—	≤0.20	≤0.025	≤0.015	410560	≥205	21/19%	40/27	≤156
4	15CrMo	0.120.18	0.170.37	0.400.70	0.801.10	0.400.55	≤0.30	—	—	—	≤0.20	≤0.025	≤0.015	440640	≥295	21/19%	40/27	≤170
5	12Cr1Mo	0.080.15	0.501.00	0.300.60	1.001.50	0.450.65	≤0.30	—	—	—	≤0.20	0.025	≤0.015	415560	≥205	22/20%	40/27	≤163
6	12Cr1MoV	0.080.15	0.170.37	0.400.70	0.901.20	0.250.35	≤0.30	—	—	0.150.30	≤0.20	≤0.025	≤0.010	470640	≥255	21/19%	40/27	≤179
7	12Cr2Mo	0.080.15	≤0.50	0.400.60	2.002.50	0.901.13	≤0.30	—	—	—	≤0.20	≤0.025	≤0.015	450600	≥280	22/20%	40/27	≤163
8	1Cr5Mo (GB9948-2006)	≤0.15	≤0.50	≤0.60	4.006.00	0.450.60	≤0.60	—	—	—	≤0.20	≤0.030	≤0.020	390590	≥195	22%	35	≤187
9	12Cr5Mo1	≤0.15	≤0.50	0.300.60	4.006.00	0.450.60	≤0.60	—	—	—	≤0.20	≤0.025	≤0.015	415590	≥205	22/20%	40/27	≤163
	12Cr5MoNT													480640	≥280	20/18%	40/27	—
10	12Cr9Mo1	≤0.15	0.251.00	0.300.60	8.001.00	0.901.10	≤0.60	—	—	—	≤0.20	≤0.025	≤0.015	460640	≥210	20/18%	40/27	≤179
	12Cr9MoNT													590740	≥390	18/26%	40/27	—

GB6479-2013钢的牌号和化学成分

序号	牌号	化学成分 (质量分数) /%											力学性能				
		C	Si	Mn	Cr	Mo	V	W	Nb	Ni	Cu	P	S	抗拉MPa	屈服MPa	延伸 纵/横	冲击(J) 纵/横
1	10	0.07-0.13	0.17-0.37	0.35-0.65	≤0.15	—	—	—	—	≤0.25	≤0.20	≤0.025	≤0.015	335475	≥205	25/23%	—
2	20	0.17-0.23	0.17-0.37	0.35-0.65	≤0.25	≤0.15	≤0.08	—	—	≤0.25	≤0.20	≤0.025	≤0.015	410550	≥245	24/22%	0°C40/27
3	Q345B	0.12-0.20	0.20-0.50	1.20-1.70	≤0.30	≤0.10	≤0.15	—	≤0.07	≤0.50	≤0.20	≤0.025	≤0.015	490670	≥345	24/22%	20°C40/27
4	Q345C	0.12-0.20	0.20-0.50	1.20-1.70	≤0.30	≤0.10	≤0.15	—	≤0.07	≤0.50	≤0.20	≤0.025	≤0.015	490670	≥345	21/19%	0°C40/27
5	Q345D	0.12-0.18	0.20-0.50	1.20-1.70	≤0.30	≤0.10	≤0.15	—	≤0.07	≤0.50	≤0.20	≤0.025	≤0.015	490670	≥345	21/19%	-20°C40/27
6	Q345E	0.12-0.18	0.20-0.50	1.20-1.70	≤0.30	≤0.10	≤0.15	—	≤0.07	≤0.50	≤0.20	≤0.025	≤0.010	490670	≥345	21/19%	-40°C40/27
7	16Mn (GB6479-2000)	0.12-0.20	0.20-0.60	1.20-1.60	≤0.30	—	—	—	—	≤0.20	≤0.030	≤0.030	490670	≥320	21%	-40°C21/—	
8	12CrMo	0.08-0.15	0.17-0.37	0.40-0.70	0.40-0.70	0.40-0.55	—	—	—	≤0.20	≤0.025	≤0.015	410560	≥205	21/19%	20°C40/27	
9	15CrMo	0.12-0.15	0.17-0.37	0.40-0.70	0.80-1.10	0.40-0.55	—	—	—	≤0.20	≤0.025	≤0.015	440640	≥295	21/19%	20°C40/27	
10	12Cr2Mo	0.08-0.15	≤0.50	0.40-0.60	2.00-2.50	0.90-1.13	—	—	—	≤0.20	≤0.025	≤0.015	450600	≥280	20/18%	20°C40/27	
11	12Cr5Mo	0.08-0.15	≤0.50	≤0.60	4.00-6.00	0.40-0.60	—	—	—	≤0.60	≤0.20	≤0.025	≤0.015	390590	≥195	22/20%	20°C40/27
12	1Cr5Mo (GB6479-2000)	≤0.15	≤0.50	≤0.60	4.00-6.00	0.45-0.60	—	—	—	≤0.60	≤0.20	≤0.030	≤0.030	390590	≥195	22%	20°C94
13	10MoWVNb	0.07-0.13	0.50-0.80	0.50-0.80	—	0.60-0.90	0.30-0.50	0.50-0.90	0.06-0.12	—	≤0.20	≤0.025	≤0.015	470670	≥295	19/17%	20°C40/27
14	12SiMoVNb	0.08-0.14	0.50-0.80	0.50-0.80	—	0.90-1.10	0.30-0.50	—	—	—	≤0.20	≤0.025	≤0.015	≥470	≥315	19/17%	20°C40/27

主要产品 Main Products
Flange Products
Series

法兰系列



主要产品 Main Products

Stainless Steel
Pipe Series

不锈钢管件系列



异径三通
REDUCER TEE



等径三通
STRAIGHT TEE



等径四通
STRAIGHT CROSS



180°弯头 180°ELBOWS



90°弯头 90°ELBOWS



45°弯头 45°ELBOWS



90°弯头R=3.0D
90°ELBOWS R=3.0D



偏心异径管
ECCENTRIC REDURE



偏心异径管
ECCENTRIC REDURE



同心异径管
CONCENTRIC REDUCER



同心异径管
CONCENTRIC REDUCER



翻边短节(松套法兰)
FLANGING NIPPLES(LOOSE FLANGE)

主要产品 Main Products

Socket
Component Series

承插件系列



45°承插弯头
Socket45°Elbows



90°承插弯头
Socket90°Elbows



承插三通
Socket tee



承插四通
Socket cross



单承口管箍
Single Interface of hoops



双承口管箍
Double Pipe for hoops



单接口管箍
Single Interface of hoops



管座 Tube socket



管帽 Cap



承插活接头(由任)
Socket movable joint



螺纹弯头、螺纹活接头
Threaded elbows, threaded union



螺纹支管台
Threadolet

主要产品 Main Products

High Pressure
Forging Series

高压锻件系列



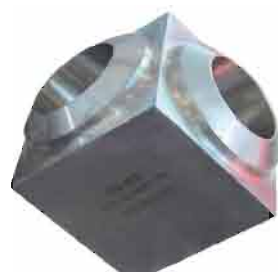
锻制斜三通
Forging slanting tees



锻制弯头
Forging elbows



锻制弯头
Forging elbows



锻制弯头
Forging elbows



锻制斜三通
Forging slanting tees



锻制斜三通
Forging slanting tees



锻制弯头
Forging elbows



承插三通 Socket tees

主要产品 Main Products

Low-Pressure Pipe
Fittings Series

中、低压管件系列



90°弯头 (长)
L/R90°ELBOW



90°弯头 (短)
S/R90°ELBOW



45°弯头 (长)
L/R45°ELBOW



45°弯头 (短)
S/R45°ELBOW



偏心大小头
ECC REDUCER



同心大小头
CON REDUCER



管帽
CAP



等径三通
STRAIGHT TEE



异径三通
REDUCING TEE



180°弯头 (长)
L/R 180°ELBOW



180°弯头 (短)
S/R180°ELBOW



主要产品 Main Products
Power Plant
Accessories Series

电厂附件系列



水流指示器
Water Flow Indicator



万向传动装置
Universal Transmission Device



链轮传动装置
Sprocket transmission device



滤网
Filter net



金属软管
Flexible metal conduit



流量测量装置
Flow Measuring Device



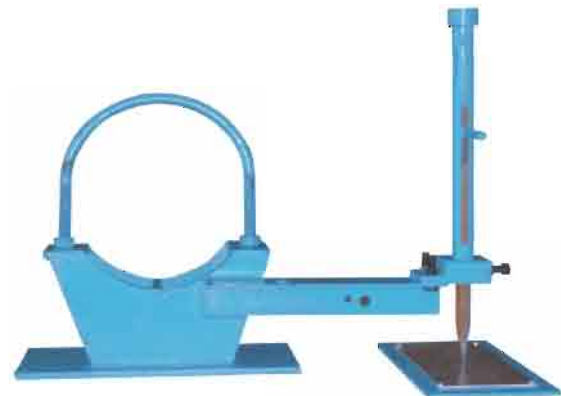
排水漏斗
Draining Water Funnel



阀门疏水收集器
Valve drainage collector



消声器
muffler



三向位移指示器
Three-direction indicator

主要产品 Main Products
Product Heating And
Heat Treatment

产品加热成型及热处理



Product Standards

产品标准

ASME SA-234/SA-234M

NO	Grade	Chemical Component %															Mechanical Property						
		C	Mn	P	S	Si	Cr	Mo	Ni	Cu	V	Nb	N	Al	Ti	Zr	W	B	Tensile MPa	Yield MPa	Extend L/T	hardness HB	
1	WPB	≤0.30	0.29-1.06	≤0.050	≤0.058	≥0.10	≤0.40	≤0.15	≤0.40	≤0.40	≤0.08	—	—	—	—	—	—	—	—	415-585	≥240	22/14%	≤197
2	WPC	≤0.35	0.29-1.06	≤0.050	≤0.058	≥0.10	≤0.40	≤0.15	≤0.40	≤0.40	—	≤0.08	—	—	—	—	—	—	—	485-655	≥275	22/14%	≤197
3	WP1	≤0.28	0.30-0.90	≤0.045	≤0.045	0.10-0.50	—	0.44-0.65	—	—	—	—	—	—	—	—	—	—	—	380-555	≥205	22/14%	≤197
4	WP12 1类	0.05-0.20	0.30-0.80	≤0.045	≤0.045	≤0.60	0.80-1.25	0.44-0.65	—	—	—	—	—	—	—	—	—	—	—	415-585	≥220	22/14%	≤197
4	WP12 2类	0.05-0.20	0.30-0.80	≤0.045	≤0.045	≤0.60	0.80-1.25	0.44-0.65	—	—	—	—	—	—	—	—	—	—	—	485-655	≥275	22/14%	≤197
5	WP11 1类	0.05-0.15	0.30-0.60	≤0.030	≤0.030	0.50-1.00	1.00-1.50	0.44-0.65	—	—	—	—	—	—	—	—	—	—	—	415-585	≥205	22/14%	≤197
6	WP11 2类	0.05-0.20	0.30-0.80	≤0.040	≤0.040	0.50-1.00	1.00-1.50	0.44-0.65	—	—	—	—	—	—	—	—	—	—	—	485-655	≥275	22/14%	≤197
6	WP11 3类	0.05-0.20	0.30-0.80	≤0.040	≤0.040	0.50-1.00	1.00-1.50	0.44-0.65	—	—	—	—	—	—	—	—	—	—	—	520-690	≥310	22/14%	≤197
7	WP22 1类	0.05-0.15	0.30-0.60	≤0.040	≤0.040	≤0.50	1.90-2.60	0.87-1.13	—	—	—	—	—	—	—	—	—	—	—	415-585	≥205	22/14%	≤197
7	WP22 3类	0.05-0.15	0.30-0.60	≤0.040	≤0.040	≤0.50	1.90-2.60	0.87-1.13	—	—	—	—	—	—	—	—	—	—	—	520-690	≥310	22/14%	≤197
9	WP9 1类	≤0.15	0.30-0.60	≤0.030	≤0.030	0.25-1.00	8.0-10.0	0.90-1.10	—	—	—	—	—	—	—	—	—	—	—	415-585	≥205	22/14%	≤217
9	WP9 3类	≤0.15	0.30-0.60	≤0.030	≤0.030	0.25-1.00	8.0-10.0	0.90-1.10	—	—	—	—	—	—	—	—	—	—	—	520-690	≥310	22/14%	≤217

序号	牌号	Chemical Component %															Mechanical Property						
		C	Mn	P	S	Si	Cr	Mo	Ni	Cu	V	Nb	N	Al	Ti	Zr	W	B	Tensile MPa	Yield MPa	Extend L/T	hardness HB	
11	WP91	0.08-0.12	0.30-0.60	≤0.020	≤0.010	0.20-0.50	8.0-9.5	0.85-1.05	≤0.40	—	0.18-0.25	0.06-0.10	0.03-0.07	≤0.02	≤0.01	≤0.01	—	—	—	585-760	≥415	20/-	≤248
12	WP911	0.09-0.13	0.30-0.60	≤0.020	≤0.010	0.10-0.50	8.5-9.5	0.90-1.10	≤0.40	—	0.18-0.25	0.06-0.10	0.04-0.09	≤0.02	≤0.01	≤0.01	0.90-1.10	0.0033-0.0038	620-840	≥440	20/-	≤248	

note 1: all of the date is most values.

note 2: "—" means no request

①"W" means fitting for connecting.

②when the fitting is stick and plate, the most C should be 0.35

③the forged fittings the most C is 0.35.and most Si is 0.35 and no limited for minimum

④when the C is below most request, C reduce 0.01% and Mn will be increased 0.06%,until to most Mn is 1.35%

⑤Cu,Ni Cr Mo total less than 1.00%

⑥0.32%. Cr Mo total less than 0.32 %

⑦heat analysis and final products analysis will be both suitable.

其他常用钢的牌号和化学成分

序号	牌号	化学成分 (质量分数) /%															力学性能					
		C	Si	Mn	Cr	Mo	V	Ti	B	Ni	Al	Cu	Nb	N	W	P	S	抗拉 MPa	屈服 MPa	延伸 纵/横	冲击(J) 纵/横	硬度 HBW
1	A333 Gr 6 (ASME 2013)	≤0.30	≥0.10	0.291.06	—	—	—	—	—	—	—	—	—	—	—	≤0.025	≤0.025	≥415	≥240	22/12%	-45°C18	—
2	A410 WPL6 (ASME 2013)	≤0.30	0.150.30	0.601.35	≤0.30	≤0.12	≤0.05	—	—	≤0.40	—	≤0.40	≤0.02	—	—	≤0.035	≤0.040	415585	≥240	22/12%	-45°C176	—
3	16MnDG (GB/T 9946-2002)	0.120.20	0.200.55	1.201.60	—	—	—	—	—	—	—	—	—	—	—	≤0.025	≤0.025	490655	≥325	30%	-45°C21	—
4	106A (ASME 2013)	≤0.25	≥0.10	0.270.93	≤0.40	≤0.15	≤0.08	—	—	≤0.40	—	≤0.40	—	—	—	≤0.035	≤0.035	≥330	≥205	28/20%	—	—
5	106B (ASME 2013)	≤0.30	≥0.10	0.291.06	≤0.40	≤0.15	≤0.08	—	—	≤0.40	≤0.40	—	—	—	—	≤0.035	≤0.035	≥415	≥240	22/12%	—	—
6	106C (ASME 2013)	≤0.35	≥0.10	0.291.06	≤0.40	≤0.15	≤0.08	—	—	≤0.40	≤0.40	—	—	—	—	≤0.035	≤0.035	≥485	≥275	20/12%	—	—

main products

产品类别 Product category	钢管牌号 Steelgrade	执行标准 Standard	用途 Application
高压锅炉用无缝钢管 Seamless steel tubes for high-pressure boilers	20G、20MnG、25MnG、15CrMoG、12Cr2MoG、12CR1MoVG、12CR2MoWVTB、10Cr9Mo1VNb 等	GB5310	用于制造高压及其以上压力的蒸汽锅炉、管道用无缝钢管 Seamless steel tubes for the manufacturing of steam boilers, piping of high pressure and higher pressure
	SA106GrB、SA106GrC 等	ASME SA-106/SA-106M	
	SA210GrA1、SA210GrC 等	ASME SA210/SA-210	
	T11、T12、T22 T23 T91 P92 等	ASME SA-213/SA-213M	
	P11 P12 P22 P5 P9 P23 P91 P92 等	ASME SA-335/SA-335M	
	ST35.8 st45.8 15mo3 13CrMo44 10CrMo910 X20CrMoV121 等	DIN17175	
	P195GH P235GH P265GH P265GH 16Mo3 10CrMo9-10 15NiCuMoNb5-6-4 X10CrMoVNb9-1 X10CrMoV121w 等	EN10216	
石油天然气工业油气套管或油管用无缝钢管 Casing and tubing for oil and gas industry	J55 K55 M65 N80 R95 L80 C90 T95 C110 Q125	API Spec 5CT	用于石油天然气有气井的套管和油管 Casing and tubing for oil and gas well
	320.360.410.460 等	GB/T5312	用于船用锅炉与过热器和12级压力管系用无缝钢管的制造 Seamless steel tubes for manufacturing marine boilers and superheaters as well as pressure pipes of grade I and II
	10.20.Q345 等	GB8163	用于输送流体用的一般无缝钢管 General seamless steel tubes for conveying fluids
机械工程和一般结构用无缝钢管 Seamless steel tubes for mechanical engineering and normal structure	10.20.35.45.Q345.Q460.Q490.Q620.42CrMo.35CrMo.40CrNiMoA.12cr1MoV 等	GB/T8162	用于制造管道设备管件及机械结构用无缝钢管 Seamless steel tubes for manufacturing pipelines pipe fittings equipments and mechanical structures
	1018.1026.8620.4130.4140 等	ASTM A519	
	S355NLH.S355J2H 等	EN10210	
	A53A.A53B 等	ASTM A53	
	SA53A.SA53B 等	ASME SA53	
石油裂化用无缝钢管 Seamless steel tubes for petroleum cracking	10.20.15CrMo 1Cr5Mo 1Cr2Mo 等	GB9948	用于石油精炼厂的炉管、热交换器和管道用无缝钢管 Sered as for furnace tubes, heat exchange tubes and pipelines in petroleum and refinery plants
煤矿用无缝钢管 Seamless steel tubes for coal mining	35.45.27SiMn 等	GB/T17396	制造煤矿用液压支架和支柱的缸、柱用无缝钢管 Seamless steel tubes for high-pressure and high-temperature chemical fertilizer processing equipment and pipelines.
高压化肥设备用无缝钢管 Seamless steel tubes for high-pressure chemical fertilizer processing equipments	10.20.16Mn.1Cr5Mo.12CrMo 10MoWVNb 12Cr2Mo 等	GB6479	用于化肥设备上输送高温高压流体管道 Seamless steel tubes for high-pressure and high-temperature chemical fertilizer processing equipment and pipelines
石油天然气工业输送钢管 Pipe-line seamless steel tubes for oil and gas industry	B/L245 X42/L290.X52/L360 X65/L450 X70/L485 X80/L555 等	API SPERC 5L GB/T9711.2	用于石油、天然气工业中的输送管 Seamless steel tubes for pipe-lines of oil and gas industry
低温管道用无缝钢管 Seamless steel tubes for low and medium pressure boilers	37Mn 34Mn2V 30CrMo 30CrMnSiA	GB/T18984	用于-45°C~100°C低温压力容器管道以及低温热交换器用无缝钢管 Seamless steel tubes for -45°C·100°C low-temperature pressure vessel piping and low-temperature heat exchanger tubes.
低中压锅炉用无缝钢管 Seamless steel tubes for low and medium pressure boilers	10.20 等	GB3087	用于制造各种低压和中压锅炉用的优质碳素结构钢无缝钢管 High quality carbon structural seamless steel pipes for manufacturing of different kinds of low and medium pressure boilers.
高强度结构用管 Seamless steel tubes for high strength structure	FGS78WV	DIN S770QL	用于高强度焊接构件,如桥梁、造船、升降系统、商务车辆及液压系统。 For high strength welding links, such as bridges, shipbuilding, jacking systems, business vehicles and hydraulic systems.
	FGS90WV	DIN S890QL	
储气井用管 Seamless steel tubes for gas storage wells	30.crcMoG 28Mn2G	Q/32108HGB003-2011 (遵循企业标准) (Standards of Chengde Group)	高压储气井用无缝钢管 Seamless steel tubes for high pressure gas storage wells

Major Customers

主要客户



Service

服务



Projects



Construction

- 1 Planning: Construction Scheme, Progree Sheme, Method, Sequence, Material, Hse, Manpower Mollization Schedule & Equipment/ Tools Mobilization Shedule
- 2 Impelementation & Control : Manpower & Resources Coordination Quality Contral, Prohree Control, Safety Control
- 3 Conclusion: Check As Built Document Acceptance

Procurement



Fabrication

Bulk Material: carbon/alloy steel pipes, flanges, fittings and plates



主要市场 Major Markets

