

## **STAINLESS STEEL PIPE**

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## Pipe Product

1. Productions include austenitic stainless steel pipe, martensitic stainless steel pipe, ferritic stainless steel pipe, dual phase stainless steel pipe, super austenitic stainless steel pipe, nickel base alloy steel pipe, as well as molybdenum, titanium, silver and other non-ferrous metal pipe.
2. Which can provide high quality tubes such as extruded tube, polished tube and polished tube, as well as special-shaped materials such as extruded bar, L, T, C, U, H, rectangle, etc.
3. The compression ratio of pipes produced by extrusion process can reach above 40. The pipe is compact in structure, and it does not produce cracks, spirals, skinning and other defects easily produced by perforation process. Do not directly produce waste pipe by continuous casting round billet: heat treatment is carried out after each cold deformation, no microstructure defects caused by repeated cold deformation occur in the product, and the service life of the product is long.
4. The cumulative deformation ratio of the whole process of steel tube production from hot machining to cold machining is more than 50 times, the material is fully deformed, the structure is uniform and compact, the grain degree can be up to 8, and the intercrystalline corrosion resistance is superior.



## Pipe blank Product

1. The pipe billet is all from the production of ALTech. It does not buy the blank produced by other enterprises, and there will be no "mixed" or "good or bad" blank of the same variety, and the service life of the pipe is consistent.
2. ALTech shall never replace steelmaking with the waste steel billet, the steelmaking raw materials shall be made of "three stripping" molten iron + pure alloy, the steel shall be of high purity, the refining process shall be made of AOD VOD.
3. ALTech is never directly made of cast billet, seamless billets are all rolled (forged), compression ratio of more than 4 times, high and low times uniform structure compact, internal quality is good.







## **Quality Guarantee**

1. The steel pipe is inspected according to the standard one by one, and non-destructive testing is conducted by the imported equipment from the United States.
2. Manufacturing process through ERP, MES information system management, can trace production time, operating machine, operating personnel, inspection personnel.
3. Our company will never manufacture seamless pipe by partial welding, renovation of old pipe and modification of welded pipe.
4. Our company does not sell "forging materials or casting blank direct punching" without cold deformation of steel pipe.

## **Quality Guarantee**

1. Our company has a high level of research and development team and strong practical ability, among which 95% has a bachelor's degree or above, among which there are 11 postgraduate students and 5 senior technical titles.
2. Relying on the company's strong technical accumulation, advanced stainless steel smelting advantages and leading national laboratories, product research and development and trial production.
3. Now we have developed high-grade boiler tube, oil and gas recovery tube, military nuclear power tube and a variety of different profiles, some products have replaced imports.
4. According to the special needs of users, we can design materials and production process to meet the personalized requirements of products

Grade of steel	Austenite 316L	Urea grade 316MOD	Duplex steel S32205		S31042 (TP310HCbN)	N08028
Test method	GB/ T17897-1999	8-A10S-95	ASTM A923-2008	ASTM G111-2006	GB/ T2039-1997	ISO 3651-2
Standard	-----	Corrosion rate 3.3 m/48h	Corrosion rate 10mg/(dm day)	Corrosion rate 0.0254mm/a	700 <sup>0</sup> million hrs 61.3MPa	-----
ALTech	3.71g/m h	1.29 m/48h	0.2386mg/ (dm day)	0.0004mm/a	66.9MPa	Intercrystalline corrosion rate 0.0847%
Factory A	6.89g/m <sup>2</sup> ·h	2.59μm/48h	3.482mg/ (dm <sup>2</sup> · day)	0.0175mm/a	64.1MPa	0.1102%
Factory B	6.57g/m <sup>2</sup> ·h	2.65μm/48h	4.326mg/ (dm <sup>2</sup> · day)	0.0184mm/a	64.1MPa	0.1359%
Conclusion	Corrosion ability twice as many as other factories	Corrosion resistance, twice as many as other factories	The corrosion rate of double - phase steel of ALTech is much lower than the standard requirement 16.8 percent of domestic A factories	The uniform corrosion rate of ALTech double phase steel under high temperature and high pressure is far lower than the standard requirement	ALTech HR3C700 for 100000 hours lasting strength is higher than standard 5.6 MPa, and higher than a foreign factory 2.8 MPa	The inter - crystalline corrosion and pitting corrosion rate of ALTech is 30% higher than that of foreign countries

The main products	Application	Steel grade
Boiler pipe	Used in power station boiler high pressure steam pipe, such as superheater and reheater.	740H, 617B, S31042, S30432, TP347HFG, TP347H
Furnace pipe	For hydrocracking industrial furnaces or similar applications requiring high temperature resistance and corrosion resistance of austenitic steels (generally high-carbon steels) and nickel base alloy steels.	N08825, N08800 TP310S, S30815 TP347, TP321
Oil and gas pipeline	OCTG (special pipe for petroleum) :Both onshore and offshore oil and gas exploration and production require special pipes to cope with high pressure and high temperature environments as well as a variety of highly corrosive active substances (co <sub>2</sub> , H <sub>2</sub> S, Cl).	N08028, N06985, N06625, Super13Cr, TP13Cr, 532750, 532205, S31803
	Other upstream and downstream applications include: riser, fluid line and transfer line	N08904, S31254, S32205, S31803 TP316MOD, TP316L, TP304L
Heat exchange pipe	Used in refining, chemical and pharmaceutical industries, as well as in fertilizer and food processing industries.	N08800, N06625, S44400, S43600, TP310S, TP316, TP321
Shipbuilding pipe	Used for chemical ships and oil drilling platforms	S32205, S31803, TP316, TP321
Military ,nuclear power	It is used in military industry, nuclear power industry and other industries, including L, T, c.u, H profile, square pipe, square pipe, rectangular pipe, large-caliber thick wall pipe and so on.	N08800, N06625 TP316LN, TP316L
General purpose steel pipe	Pipe for general fluid (liquid, gas) transportation	TP316, TP321, TP304



## Profiled bar and nickel titanium molybdenum pipe

By using the world's largest 6000 tons of large horizontal extruder extrusion , which provided by SMS , than steel, high speed and uniform organization and we can produce all kinds of shape products, has now developed a variety of different profile and nickel base alloy tube, titanium pipe, molybdenum, the other can be designed according to user requirements, the production of various shapes and nickel base alloy, molybdenum, titanium and titanium alloy, difficult deformation and other metal materials.



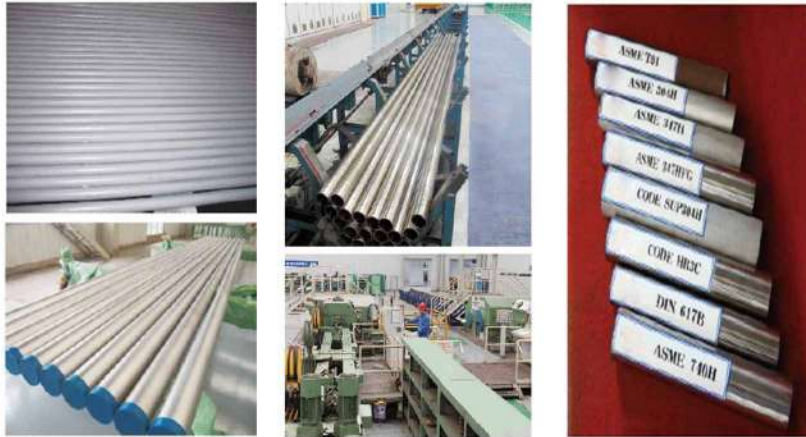
## Pipe for oil and gas exploiting

N08028 for oil and gas exploitation was developed by using the large 350 three-roll cold rolling pipe mill provided by Russia with high deformation rate and continuous uniformity of wall thickness. Special steel pipe such as SUP13Cr.



## Pipe for supercritical power station boiler

With advantages of the high speed and high precision of 75 high-speed cold rolling pipe mill provided by German MEER, the S30432, S31042 heat-resistant steel pipe for boiler of ultra-supercritical power station has been developed and put into mass production.



## Heat exchanger, brake, solar tube

With the advantages of high speed and high precision ( 0.05mm) of 25,75 high speed cold rolling pipe mill provided by German MEER, it can produce heat exchanger, high speed rail, urban rail brake and solar pipe with super long and high precision.





## Large-diameter welded pipe and dual-phase steel welded pipe

Using 2,800 tons of hydraulic U molding machine and 12 meters continuous welding unit, the large-caliber stainless steel pipe and dual-phase stainless steel pipe used for oil and gas field project were developed.



## Quality inspection

- online detection

Our company has 5 (sets) eddy current and ultrasonic nondestructive testing equipment, all provided by American GE, with high sensitivity and missing alarm rate is 0. In addition, it is equipped with 4 automatic hydraulic pressure testing machines and RT real-time imaging testing equipment for welding seam, as well as various convenient testing instruments to ensure that the factory products are qualified and meet user requirements.



## Quality inspection



40 vortex - over combined flaw detection unit



Eddy current inspection unit



90 ultrasonic testing unit



630 ultrasonic testing unit



70MPa water pressure testing machine



Rt real time imagery detection

## Physical-chemical testing

Complete testing equipment, for the physical and chemical properties of steel pipe testing, technology research and development to provide security



Physical and chemical lab of steel pipe



Flaring and flattening machine pipe drawing machine



electron microscope



Impact testing machine



Metalloscope



Intercrystalline corrosion test



Our company can design and produce various steel pipes according to GB, ASME, API, JIS, EN and other steel pipe standards and user requirements.

<b>Number</b>	<b>Standard codes</b>	<b>Scientific name</b>
<b>Seamless pipe</b>		
1	GB/T 14975	Stainless seamless steel pipe for construction
2	GB/T 14976	Seamless stainless steel pipe for fluid transportation
3	GB 13296	Seamless steel pipe for boiler and heat exchanger
4	GB 9948	Seamless steel pipe for petroleum cracking process
5	GB 5310	Seamless steel pipe for high-pressure boiler
6	GB/T 21833	Austenite-ferrite double-phases stainless seamless steel pipe
7	GB/T 8163	Seamless steel tube for fluid delivery
8	GB/T 18984	Seamless steel tube for low temperature
9	GB/T 3093	Seamless high-pressure steel pipe for diesel engine
10	ASTM A213	Seamless ferrite and austenite alloy steel for boiler superheater and radiator
11	ASTM A312	Seamless and welded austenitic stainless steel nominal pipe
12	ASTM A335	Seamless ferrite alloy steel engineering pipe for high-temperature
13	ASTM A268	General purpose seamless and welded ferrite and martensitic stainless steel pipe
14	ASTM A269	General purpose austenitic stainless steel seamless and welded pipe
15	ASTM A789	General purpose seamless and welded ferrite/austenitic stainless steel pipe
16	ASTM A790	Seamless and welded ferrite and austenitic stainless steel nominal pipe
17	API SPEC 5CT	Driveline and pipeline standard
18	API SPEC 5LC	Corrosion-resistant alloy pipe for pipelines
19	EN 10297	Technical conditions for general purpose seamless circular steel pipe delivery
20	EN 10216	Technical conditions for delivery of seamless steel pipes for pressure use
21	JIS G3446	Stainless steel pipes for machinery and construction
22	JIS G3447	Stainless steel pipe for environmental sanitation
23	JIS G3448	Light stainless steel pipe for common pipe
24	JIS G3463	Stainless steel pipe for boiler and heat exchanger
25	RCC-M4105	Nickel-chromium-ferroalloy (NC30Fe) seamless pipe for pressurized water reactor steam generator pipe bundle



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Number	Standard codes	Scientific name
<b>Seamless pipe</b>		
1	GB/T 12770	Welded stainless steel pipe for mechanical construction
2	GB/T 12771	Welded stainless steel pipe for fluid transportation
3	GB/T 21832	Austenite - ferritic double - phase stainless steel welded steel pipe
4	HG 20537.1	Specification for selection of austenite stainless steel welded steel pipe
5	HG 20537.2	Technical requirements of austenite stainless steel welding steel pipe for shell-and-tube heat exchanger
6	HG 20537.3	Technical requirements of austenite stainless steel large caliber welding steel pipe for chemical plant
7	HG 20537.4	Technical requirements for large diameter welded steel pipe with austenitic stainless steel in chemical plant
8	ASME/ASTM SA-249/SA-249M	Weld austenite pipe for boiler, superheater, heat exchanger and condenser
9	ASME/ASTM SA-312/SA-312M	Seamless and welded austenitic stainless steel nominal pipe
10	ASME/ASTM SA-258/SA-358M	Specification for electrofusion welding austenite Cr-Ni stainless steel pipe for high temperature and general use
11	ASME/ASTM SA-789/SA-789M	General purpose seamless and welded ferrite/austenitic stainless steel pipe
12	ASME/ASTM SA-790/SA-790M	Seamless and welded ferrite/austenitic stainless steel nominal pipe
13	EN BS/DIN 10216-5	Seamless steel pipes for pressure loads - delivery technical conditions - part v: stainless steel pipe
14	EN BS/DIN 10312	Technical conditions for delivery. welded stainless steel pipes for water and other hydrated conveyance

## Specifications of seamless stainless steel pipe

The minimum outer diameter  $\Phi$  6mm, the maximum  $\Phi$  762mm;  
the thinnest wall thickness 1mm, the thickest 40mm.

OD/ WT	1.0	1.5	2 - 0	2.5	3.0	3.5	4.0	4.5	5.0	6.0	8.0	10	12	14	16	18	20	22	25	30	40	
6	■	■																				
8	■	■																				
10	■	■	■	■																		
12	■	■	■	■	■																	
14	■	■	■	■	■																	
16	■	■	■	■	■	■	■															
18	■	■	■	■	■	■	■	■														
19	■	■	■	■	■	■	■	■	■													
22	■	■	■	■	■	■	■	■	■	■												
25	■	■	■	■	■	■	■	■	■	■												
30	■	■	■	■	■	■	■	■	■	■												
32	■	■	■	■	■	■	■	■	■	■	■											
38		■	■	■	■	■	■	■	■	■	■	■										
45			■	■	■	■	■	■	■	■	■	■										
48			■	■	■	■	■	■	■	■	■	■										
57			■	■	■	■	■	■	■	■	■	■	■	■								
76			■	■	■	■	■	■	■	■	■	■	■	■	■							
89			■	■	■	■	■	■	■	■	■	■	■	■	■							
108			■	■	■	■	■	■	■	■	■	■	■	■	■	■						
114			■	■	■	■	■	■	■	■	■	■	■	■	■	■						
133			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■					
159				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
168				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
219					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
273						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
325							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
356								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
406									■	■	■	■	■	■	■	■	■	■	■	■	■	■
426										■	■	■	■	■	■	■	■	■	■	■	■	■
457											■	■	■	■	■	■	■	■	■	■	■	■
508												■	■	■	■	■	■	■	■	■	■	■
530													■	■	■	■	■	■	■	■	■	■
510														■	■	■	■	■	■	■	■	■
630															■	■	■	■	■	■	■	■
762																■	■	■	■	■	■	■









ALTech Group have a global footprint



- Sales Office and Registered Entity
- Sales Representation
- Manufacturing Plant
- Warehouse

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