Seamless Steel Pipe

Product Introduction

Seamless steel pipes / tubes

Seamless steel pipe is a tubular section or hollow cylinder, usually but not necessarily of circular cross-section, used mainly to convey substances which can flow — liquids and gases (fluids), slurries, powders and masses of small solids.

Steel Pipe & Tubing - All you need to know

Steel Pipe & Tubing seem similar at first blush and in fact they share many characteristics but they also have some important differences.

Definitions:

Steel Tubing is a hollow steel shape intended for structural purposes and made from carbon, stainless, or galvanized steel further divided as:

Mechanical Tubing is used in low stress applications such as fences, kitchens, restaurants, hospitals, solar panels and made with wall thicknesses up to 10 gauge.

Structural Tubing is for high stress structural application like bridges, buildings, roll cages, and underwater platforms with wall thickness from 3/16" and up. It is often referred to as Hollow Structural Sections or just the acronym HSS.

Pipe is a hollow structure that is intended to carry material such as liquids, gasses, or even solids. Its wall thickness is described by its Schedule and it is often broken down by type using the method of manufacturing it, either ERW or Seamless.

How it's made:

Both Tubing and Pipe are manufactured by the first two methods below. The third is reserved for Tubing only.

Electric Resistance Welded, often abbreviated as ERW, is a process that uses specific machinery to shape the pipe and tubing. A continuous steel sheet is unwound from a coil and shaped using contoured rollers, forcing the edges together under pressure. These edges are then welded together by heating the material to over 2,000 degrees. After welding, the pipe or tubing is cut into the exact size needed.

Seamless Pipe (and tubing) is made by extruding a steel block or by drilling a solid steel bar. Next, the extrusion or the drilled steel bar is cold drawn through a dye to achieve the diameter and thickness needed. Because this process can cause mechanical hardening, sometimes the material is annealed and straightened as a final process. Seamless Pipe & Tubing is subdivided as:

Cold Drawn Seamless, or CDS, exhibits precise tolerances and a good surface finish.

Hot Finished Seamless, or HFS, has less critical tolerances and somewhat scaly finish and is not as strong as CDS.

For Drawn over Mandrel, or DOM tubing, the first stages of manufacturing are identical to ones used to make electric resistance welded tubing, but in the finishing stages the entire flash weld is taken out and the tube is cold drawn over a mandrel. A mandrel is a round object against which material can be forged or shaped. The cold drawn process provides the tube with better dimensional tolerances, improved surface finish and the strongest weld strength achievable.

Carbon Seamless Steel Pipe / tubes

Seamless steel pipe is a tubular section or hollow cylinder, usually but not necessarily of circular cross-section, used mainly to convey substances which can flow — liquids and gases (fluids), slurries, powders and masses of small solids.

Hot rolled seamless steel pipe deformation process can be summarized as three stages: extension, perforation and finishing. Hot rolled seamless steel pipes is relative to the cold-rolled, cold rolling is below the recrystallization temperature of the rolling and hot rolled is carried out at above the recrystallization temperature of the rolling. Hot rolled seamless steel pipe can damage the refinement of the crystal grains of the steel, cast microstructure of the steel ingot and eliminate the defects of the microstructure so that the the steel organization compacting, improves the mechanical properties. This improvement is reflected in the rolling direction so that the steel is no longer at a certain extent isotropic; pouring the formation of bubbles, cracks and osteoporosis, under high pressure and temperature can also be welded together.

Hot Rolled Steel Pipes (Seamless Tube) in different size, specifications, grades & thickness as per the client's requirements. The range offered by tubes is available as per the international & national standard and can be available from us at affordable prices. These pipes are used in various application industry like shipbuilding, power plants, oil and gas, automotive, sugar mills and distilleries, cement and construction industries etc.

Seamless carbon steel pipes are made of steel ingots or solid billets through perforation to make capillaries, which are then hot-rolled, cold-rolled or cold-drawn. The raw material of carbon steel pipe is a round tube blank, which is cut by a cutting machine into a billet with a length of about 1 meter, and sent to a furnace for heating through a conveyor belt. The billets are fed into the furnace and heated at about 1200 degrees Celsius. The fuel is hydrogen or acetylene. Furnace temperature control is a critical issue. After the round tube blank is released from the furnace, it is pierced through a pressure punching machine. Generally, the more common punching machine is the conical roller punching machine. This kind of punching machine has high production efficiency, good product quality, large amount of perforation and diameter expansion, and can wear a variety of steel grades. After perforation, the round tube blank is successively cross-rolled, continuously rolled or extruded by three rolls.

1. Seamless steel pipe for structure (GBT8162-2008). Mainly used for general structure and mechanical structure. Its representative material (brand): carbon steel, 20, 45 steel; alloy steel Q345, 20Cr, 40Cr, 20CrMo, 30-35CrMo, 42CrMo, etc.
2. Seamless steel pipes for conveying fluids (GBT8163-2008). It is mainly used for conveying fluid pipelines in engineering and large-scale equipment. The representative material (grade) is 20, Q345, etc.
3. Seamless steel pipes for low and medium pressure boilers (GB3087-2008) are used to manufacture various structures of low and medium pressure boiler superheated steam pipes, boiling water pipes and superheated steam pipes, large smoke pipes, small smoke pipes and arch bricks for locomotive boilers Hot-rolled and cold-drawn (rolled) seamless steel pipes of high-quality carbon structural steel for pipes. The representative material is 10, 20 steel.

Seamless Steel Pipe is made from a solid round steel ‘billet’ which is heated and pushed or pulled over a form until the steel is shaped into a hollow tube. The seamless pipe is then finished to dimensional and wall thickness specifications in sizes from 1/8 inch to 32 inch OD. Carbon Steel Seamless Pipes / Tubes Carbon steel is an alloy consisting of iron and carbon. The percentage of carbon in the steel affects the hardness, strength of elasticity and ductility of carbon steel. Seamless carbon steel

pipe or solid steel ingot is made of the capillary tube through the hole, then through the hot-rolled, cold rolled or cold call is made. Seamless carbon steel pipe in China's steel industry has an important position. Seamless carbon steel pipe material is a round tube, pipe cutting machine embryos to go through cutting about 1 m of length blank, and sent by conveyor belt furnace heating. Billet is fed into the heating furnace, the temperature is about 1200 degrees Celsius. Fuel is hydrogen or acetylene. Furnace temperature control is the key issue. Round tube came out to punch through the machine through air pressure. Generally more common punch is tapered roll perforation machine, the punch high production efficiency, product quality, large diameter hole expansion, can wear a variety of steel. Perforation, round tube has been on three-roll cross rolling, rolling or extrusion. Squeezed off the tube after sizing. Sizing by high-speed rotary cone drill holes into the billet to form a tube. Pipe diameter by the sizing mill to determine the length of the drill diameter. After the pipe through the sizing into the cooling tower, cooling by water spray, steel after cooling, should be straightening. After the steel belt sent by straightening metal testing machine (or pressure test) for internal testing. If the pipe internal cracks, bubbles and other problems will be detected. After the pipe but also through strict quality control manual selection. Steel quality, the use of spray paint numbers, specifications, production lot number. By a crane into the warehouse.

Surface treatment of steel pipe: In order to improve the service life of oil pipeline, surface treatment is usually carried out to facilitate the firm combination of steel pipe and anticorrosive coating.Common processing methods are: cleaning, tool derusting, pickling, shot blasting derusting four categories. 1 cleaningGrease, dust, lubricant, organic matter adhered on the surface of steel pipe, usually using solvent, emulsion to clean the surface.However, the rust, oxide skin and welding slag on the surface of the steel pipe cannot be removed, so other treatment methods are needed.Tool rust removalSteel pipe surface oxide, rust, welding slag, can use steel wire brush to clean and polish the surface treatment.Tool derusting can be divided into manual and power, manual tool derusting can reach Sa 2 level, power tool derusting can reach Sa3 level.If the surface of steel pipe is attached with a particularly strong oxide skin, it may be impossible to remove the rust with the help of tools, so we need to find other ways. 3 pickling Common pickling methods include chemistry and electrolysis.But only chemical pickling is used for pipeline corrosion protection.Chemical pickling can achieve a certain degree of cleanliness and roughness on the surface of steel pipe, which is convenient for subsequent anchor lines.Usually as a shot (sand) after reprocessing. 4 shot blasting for rust removalBy high power motor drive the high-speed rotating blades, steel grit, steel shot, segment, minerals and other abrasive wire under the action of centrifugal force on steel pipe surface spray and mass ejection, thoroughly remove rust, oxides and dirt on one hand, on the other hand, steel pipe under the action of abrasive violent impact and friction force, to achieve the required uniform roughness.Among the four treatment methods, shot blasting and derusting is an ideal treatment method for pipe derusting. Generally, shot blasting and derusting are mainly used for inner surface treatment of steel pipe, and shot blasting and derusting are mainly used for outer surface treatment of steel pipe.

Product Specification

Standard	API, ASTM, BS, DIN, GB, JIS
Outer Diameter	21.3mm-660mm
Wall Thickness	0.5mm-20mm
Dia Tolerance	Control with in the standard, OD:±1%, WT:±10%
Materials	10#, 20#, 45#, Q235, Q345, Q195, ASTM A53/ A106/ A178/ A333/ A335, SAE1018, SAE1020, SAE1045, ST37, ST37-2, ST35, ST45, ST52, ST35.8, 19Mn5, 16Mn, Q345B, 27SiMn, 20Cr, 40Cr, 12CrMo, 15CrMo, 30CrMo, 35CrMo, 42CrMo
Zinc coating	Pre galvanized steel pipe: 60-150g/m² Hot dipped galvanized steel pipe: 200-400g/m²
Type of pipe coating	Epoxy powder
Inspection	ISO, BV, SGS, MTC
Packing	Steel strip packed. Standard Export Seaworthy Package. Suit forall kinds of transport,or as required
Application	Accessorize, machinery parts, structure steel pipe, piling pipe, sewage and clear water transportation, Line pipe for petroleum and so on
MOQ	5metric ton,sample order accepted
Shipment time	Within 7-10 workdays after receiving deposit or L/C
Market	Southeast Asia, Middle East, Africa, Europe, South American and so on

Below is our product catalog of steel pipe:

Descriptions	**Grades**	**Standard**	**Specification (OD*WT)mm**	**Usage**
Structural steel pipe	20# 35# 45# Q345B, 16Mn, Q345B-E, 20Mn2, 25Mn, 30Mn2, 40Mn2, 45Mn2, SAE1018, SAE1020, SAE1518, SAE1045.	GB/T8162-2008, ASTM A29/A29M-2015	6-1020*1.5-100	For commom structure
Fluid steel pipe	10#, 20#, ASTM A106, A210, A53, 16Mn, Q345A.B.C.D.E, Q295B.C.D.E	GB/T8163-2008	8-630*1.0-40	Fluid feeding
High pressure boiler pipe	20G, 15MnG, 20MnG, 15CrMoG, 12Cr1MoVG, St35.8, St45, SA106b, SA106c, SA210a, SA210c, A335P2, P11, P12, P22, P91, P92, A213 T2, T9, T11, T12, T22, T23, T91	GB/5310-2008, ASTM A 106-99, DIN 17175-79	14-630*2-80	Temperature-resistant seamless steel pipe far high-pressure boiler
Oil casing pipe	API SPEC 5CT J55, K55, N80, L80, C90, C95, P110	API SPEC 5CT, SY/T6194-96, GB/T222-84,	10-530*1.5-36	Boiler pipes for refinery,heatexchangeing pipes,seamless steel pipes for pipeline
Pipeline	API SPEC 5L, X42, X52, X60,	API SPEC 5L, ISO 3183,	60-630*1.5-40	Carrying gas,water or oil in the industries of

	X65,X70,X80 ASTM A53, ASTM A106, ASTM A333, BS301, BS3602, BS3603, BS3604, PSL1, PSL2, DNV-OS-F101, CSA-Z245	GB/T 9711		petroleum and natural gas
Alloy steel pipe	4140, 42CrMo, 32CrMo, 15CrMo, Cr5Mo, 13CrMo44, 12Cr1MoV P22 T91,P91,P9, T9, Wb36	GB5310-95, GB9948-88, ASTM A335/A335M, ASTM A213/213M, DIN17175-79, JISG3467-88, JISG3458-88	16-824*2-100	The seamless steal pipes features resistance to high presure,high/low temperature and corrosion ano is used in the industries of petroleum, chemical engineering and. Electric pwer as well as boiler
Hydraulic prop pipe	20#, 45#, 27SiMn, 30CrMoSiA	GB/T17396-2009	70-377*9-40	Coal mine hydraulic support and pillar cylinder, column, can also be used for other hydraulic cylinder, column

ASTM A106 Seamless carbon steel tube

ASTM A106 pipe (also covered in ASME specifications as S/A 106) is the standard specification for seamless carbon steel pipe for high-temperature service. Most common uses are in refineries and plants when gasses or fluids are transported at high temperatures and pressures.

ASTM A106 Gr. B seamless steel pipe is a kind of low carbon steel widely used in petroleum, chemical industry and boiler industry. The material has good mechanical properties.

Description

1. Standards: ASTM A106 (ASME SA106)
2. Products mainly used: apply to bending, curling and similar forming process.
3. The main products of steel / steel grade: Gr.A, Gr.B, Gr.C.
4. Specifications: diameter: 10.3 to 114.3 mm thickness: 0.8 to 12 mm Length: 6 m above, and, in accordance with customer demand, supply and other specifications of steel pipe.
5. Chemical composition and mechanical properties
6. JIS Number and Corrensponding Foreign Standards

ASTM A106/ASME SA106 is the standard specification for seamless carbon steel pipe applied for high temperature services. It includes three grades A, B and C, and common use grade is A106 Grade B. It used in different industries not only for pipeline systems like oil and gas, water, mineral slurry transmission, but also for boiler, construction, structural purposes.

ASTM A106 Grade B pipe is equivalent to ASTM A53 Grade B and API 5L B on chemical position and mechanical properties, in general use carbon steel and yiled strength minimum 240 MPa, tensile strength 415 Mpa.

Chemical Composition And Mechanical Properties

Grade	**Chemical Compositions**									
	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V
A106-A	≤0.25	0.27-0.93	≤0.035	≤0.035	≥0.10	≤0.40	≤0.40	≤0.15	≤0.40	≤0.08
A106-B	≤0.30	0.29-1.06	≤0.035	≤0.035	≥0.10	≤0.40	≤0.40	≤0.15	≤0.40	≤0.08
A106-C	≤0.35	0.29-1.06	≤0.035	≤0.035	≥0.10	≤0.40	≤0.40	≤0.15	≤0.40	≤0.08

Grade	**Mechanical Properties**		
	Tensile Strength(Mpa)	Yield Strength(Mpa)	Elongation(%)
A106-A	≥330	≥205	30
A106-B	≥415	≥240	30
A106-C	≥485	≥275	30

INCH	OD	API 5L ASTM A53 A106 Standard Wall Thickness						
	(MM)	SCH 10	SCH 20	SCH 40	SCH 60	SCH 80	SCH 100	SCH 160
		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
1/4”	13.7			2.24		3.02		
3/8”	17.1			2.31		3.2		
1/2”	21.3	2.11		2.77		3.73		4.78
3/4"	26.7	2.11		2.87		3.91		5.56
1"	33.4	2.77		3.38		4.55		6.35
1-1/4"	42.2	2.77		3.56		4.85		6.35
1-1/2"	48.3	2.77		3.68		5.08		7.14
2"	60.3	2.77		3.91		5.54		8.74
2-1/2"	73	3.05		5.16		7.01		9.53

3"	88.9	3.05		5.49		7.62		11.13
3-1/2"	101.6	3.05		5.74		8.08		
4"	114.3	3.05	4.50	6.02		8.56		13.49
5"	141.3	3.4		6.55		9.53		15.88
6"	168.3	3.4		7.11		10.97		18.26
8"	219.1	3.76	6.35	8.18	10.31	12.70	15.09	23.01
10"	273	4.19	6.35	9.27	12.7	15.09	18.26	28.58
12"	323.8	4.57	6.35	10.31	14.27	17.48	21.44	33.32
14"	355	6.35	7.92	11.13	15.09	19.05	23.83	36.71
16"	406	6.35	7.92	12.70	16.66	21.44	26.19	40.49
18"	457	6.35	7.92	14.27	19.05	23.83	29.36	46.24
20"	508	6.35	9.53	15.09	20.62	26.19	32.54	50.01
22"	559	6.35	9.53		22.23	28.58	34.93	54.98
24"	610	6.35	9.53	17.48	24.61	30.96	38.89	59.54
26"	660	7.92	12.7					

Our Supply Range for Sale

ASTM A106 Grade A, Grade B, Grade C seamless carbon steel pipes as below conditions:

Standard: ASTM A106, Nace, Sour service.

Grade: A, B, C

Range of OD outer diameter: NPS 1/8 inch to NPS 20 inch, 10.13mm to 1219mm

Range of WT wall thickness: SCH 10, SCH 20, SCH STD, SCH 40, SCH 80, to SCH160, SCHXX; 1.24mm up to 1 inch, 25.4mm

Range of length: 20ft to 40ft, 5.8m to 13m, single random lengths of 16 to 22ft, 4.8 to 6.7m, double random length with average 35ft 10.7m

Ends procession: Plain end, beveled, threaded

Coating: Black paint, varnished, epoxy coating, polyethylene coating, FBE and 3PE, CRA Clad and Lined.

Products	**OD**	**W.T.**	**Standard**	**Length**
Seamless pipe	1/2" to 24"	SCH20,30,40,60,STD XS,80	ASTM A106/API 5L Gr.B	5.8m,24m,
			ASTM A53Gr.B	5m to 24m random
Pipe line	3" to 18"	SCH20,30,40,60,STD XS	API5LGr.B/X42,X52,X60	5.8m,24m,
				5m to 24m random
ERW Steel pipe	1" to 28"	SCH20,30,40,60,STD XS,80	ASRM A53Gr.B	5.8m,24m,
				5m to 24m random
Spiral steel pipe	8" to 36"	SCH20,30,40,60,STD XS,80	AY/T5037-2001	5.8m,6m,
				5m to 24m random

ASTM A53 Carbon Steel Pipe & Tube

ASTM A53 (ASME SA53) carbon steel pipe is a specification that covers seamless and welded black and hot-dipped galvanized steel pipe in NPS 1/8″ to NPS 26. A 53 is intended for pressure and mechanical applications and is also acceptable for ordinary uses in steam, water, gas, and air lines.

A53 pipe comes in three types (F, E, S) and two grades (A, B).

A53 Type F is manufactured with a furnace butt weld or may have a continuous weld (Grade A only)

A53 Type E has an electric resistance weld (Grades A and B)

A53 Type S is a seamless pipe and found in Grades A and B)A53 Grade B Seamless is our most polar product under this specification and A53 pipe is commonly dual certified to A106 B Seamless pipe.

ASTM A53 seamless steel pipe chemical composition:

Grade	**Chemical Composition (%) Max.**								
	C	Mn	P	S	Cu	Ni	Cr	Mo	V
A	0.25	0.95	0.05	0.045	0.40	0.40	0.40	0.15	0.08
B	0.30	1.20	0.05	0.045	0.40	0.40	0.40	0.15	0.08

ASTM A53 seamless steel pipe Mechanical Properties:

Grade	**Mechanical Properties**	
	Tensile Strength (Mpa)	Yield Strength (Mpa)
A	≥48,000 (≥330)	≥30,000 (≥205)
B	≥60,000 (≥415)	≥35,000 (≥240)

ASTM A53 steel pipe of size range

NPS	**OD**	**W T**											
INCH	**MM**	**SCH10**	**SCH20**	**SCH30**	**STD**	**SCH40**	**SCH60**	**XS**	**SCH80**	**SCH100**	**SCH120**	**SCH140**	**SCH160**
1/2″	21.3	2.11		2.41	2.77	2.77		3.73	3.73				4.78
3/4″	26.7	2.11		2.41	2.87	2.87		3.91	3.91				5.56
1″	33.4	2.77		2.9	3.38	3.38		4.55	4.55				6.35

1.1/4″	42.2	2.77		2.97	3.56	3.56		4.85	4.85				6.35
1.1/2″	48.3	2.77		3.18	3.68	3.68		5.08	5.08				7.14
2″	60.3	2.77		3.18	3.91	3.91		5.54	5.54				8.74
2.1/2″	73	3.05		4.78	5.16	5.16		7.01	7.01				9.53
3″	88.9	3.05		4.78	5.49	5.49		7.62	7.62				11.13
3.1/2″	101.6	3.05		4.78	5.74	5.74		8.08	8.08				
4″	114.3	3.05		4.78	6.02	6.02		8.56	8.56		11.13		13.49
5″	141.3	3.4			6.55	6.55		9.53	9.53		12.7		15.88
6″	168.3	3.4			7.11	7.11		10.97	10.97		14.27		18.26
8″	219.1	3.76	6.35	7.04	8.18	8.18	10.31	12.7	12.7	15.09	18.26	20.62	23.01
10″	273	4.19	6.35	7.8	9.27	9.27	12.7	12.7	15.09	18.26	21.44	25.4	28.58
12″	323.8	4.57	6.35	8.38	9.53	10.31	14.27	12.7	17.48	21.44	25.4	28.58	33.32
14″	355.6	6.35	7.92	9.53	9.53	11.13	15.09	12.7	19.05	23.83	27.79	31.75	35.71
16″	406.4	6.35	7.92	9.53	9.53	12.7	16.66	12.7	21.44	26.19	30.96	36.53	40.19
18″	457.2	6.35	7.92	11.13	9.53	14.27	19.05	12.7	23.83	39.36	34.93	39.67	45.24
20″	508	6.35	9.53	12.7	9.53	15.09	20.62	12.7	26.19	32.54	38.1	44.45	50.01
22″	558.8	6.35	9.53	12.7	9.53		22.23	12.7	28.58	34.93	41.28	47.63	53.98
24″	609.6	6.35	9.53	14.27	9.53	17.48	24.61	12.7	30.96	38.89	46.02	52.37	59.54
26″	660.4	7.92	12.7		9.53			12.7					
28″	711.2	7.92	12.7	15.88	9.53			12.7					

ASTM 1020/ 1045 Seamless Steel Pipe

Chemical Composition of seamless steel pipe

Material	Chemical composition (%)							
	C	Si	Mn	P	S	Ni	Cr	Cu
10#, ASTM 1010, DIN CK10, JIS S10C	0.07~0.13	0.17~0.37	0.30~0.60	≤0.035	≤0.035	≤0.25	≤0.20	≤0.25
20#, ASTM 1020, DIN CK20, JIS S20C	0.17~0.24	0.17~0.37	0.35~0.65	≤0.035	≤0.035	≤0.25	≤0.25	≤0.25
35#, ASTM 1035, DIN CK35, JIS S35C	0.32~0.38	0.17~0.37	0.50~0.80	≤0.035	≤0.035	≤0.30	≤0.25	≤0.25
45#, ASTM 1045, DIN CK45, JIS S45C	0.42~0.50	0.17~0.37	0.60~0.90	≤0.035	≤0.035	≤0.25	≤0.25	≤0.25

Mechanical Properties of seamless steel pipe

Steel material	Tensile strength Mpa	Yield strength Mpa	Elongation %	Hardness	Straightness
10#, ASTM 1010, DIN CK10, JIS S10C	≥335	≥205	≥31	≤137HB	0.3~1.0
20#, ASTM 1020, DIN CK20, JIS S20C	≥410	≥245	≥25	≤156HB	0.3~1.0
35#, ASTM 1035, DIN CK35, JIS S35C	≥530	≥315	≥20	≤197HB	0.3~1.0
45#, ASTM 1045, DIN CK45, JIS S45C	≥600	≥355	≥16	≤HRC62	0.3~1.0

Chinese Standard	American Standard	German Standard	
10#	ASTM A53-A	St37	DIN1626
	ASTM A106-A	St37-2	DIN17175
	ASTM A179-C	St35-8	DIN17175
20#	ASTM A53-B	St42-2	DIN1626
	ASTM A106-B	St45-8	DIN17175
	ASTM A178-C	St45-4	DIN1629/4
45#	ASTM A 1045	CK45	
16Mn	ASTM A210-C	St52	DIN1629/3
		St52.4	DIN1629/4

Grade	Chemical composition (%)					
	C	Mn	Si	P	S	Al
Q235A	0.14~0.22	0.30~0.65	≤0.30	≤0.045	≤0.050	
Q235B	0.12~0.20	0.30~0.65	≤0.30	≤0.045	≤0.045	
Q235C	≤0.18	0.30~0.80	≤0.30	≤0.040	≤0.040	
Q235D	≤0.17	0.35~0.80	≤0.35	≤0.040	≤0.035	
Q345A	≤0.20	≤1.70	≤0.50	≤0.035	≤0.035	
Q345B	≤0.20	≤1.70	≤0.50	≤0.035	≤0.035	
Q345C	≤0.20	≤1.70	≤0.50	≤0.030	≤0.030	≥0.015
Q345D	≤0.18	≤1.70	≤0.50	≤0.030	≤0.025	≥0.015
Q345E	≤0.18	≤1.70	≤0.50	≤0.025	≤0.020	≥0.015

Q345A,B,C,D and E each contains Nb≤0.07,V≤0.15,Ti≤0.20,Cr≤0.30,Ni≤0.012,Mo≤0.10

Chemical components & mechanical properties:

Standard	Grade	C max	Mn max	Si max	P max	S max	Yield strength min	Tensile strength	Elongation%
ASTM	A36	0.25	0.80-1.20	0.40	0.045	0.050	250	400-520	26
ASTM	A283	0.14-0.24	0.90	0.40	0.035	0.040	210	310-510	22-27
GB/T 700	Q235B	0.12-0.20	0.30-0.65	0.30	0.045	0.045	235	375-460	21-26
GB/T 1591	Q345B	0.18-0.22	0.60-1.50	0.55-0.95	0.035	0.035	345	470-630	20
JIS G3101	SS400	0.22	1.40	0.50	0.035	0.035	245	400-500	26
EN 10025	S235JR	0.17-0.20	1.40	0.35	0.035	0.035	235	360-510	24
EN 10025	S275JR	0.17-0.23	1.50	0.40	0.040	0.040	275	430-580	21
EN 10025	S355JR	0.22	1.60	0.55	0.025	0.025	355	470-630	20
DIN 17100	ST37-2	0.17-0.20	1.20	0.35	0.045	0.045	235	340-480	25
DIN 17100	ST52	0.24	1.60	0.55	0.045	0.045	345	450-630	21

Standard	Grade	Chemical Components (%)					Mechanical Properties	
		C	Si	Mn	P	S	Tensile STrength(Mpa)	Yield STrength(Mpa)
ASTM A53	A	≤0.25	-	≤0.95	≤0.05	≤0.06	≥330	≥205
	B	≤0.30	-	≤1.2	≤0.05	≤0.06	≥415	≥240
ASTM A106	A	≤0.30	≥0.10	0.29-1.06	≤0.035	≤0.035	≥415	≥240
	B	≤0.35	≥0.10	0.29-1.06	≤0.035	≤0.035	≥485	≥275
ASTM SA179	A179	0.06-0.18	-	0.27-0.63	≤0.035	≤0.035	≥325	≥180
ASTM SA192	A192	0.06-0.18	≤0.25	0.27-0.63	≤0.035	≤0.035	≥325	≥180

Chemical composition of high pressure boiler steel pipe

Standard	Steel grade	C	Si	Mn	P	S	Cr	Mo	Cu	Ni	V	Al	W	Ti	Nb	N
GB 3087	10	0.07-0.13	0.17-0.37	0.38-0.65	≤0.03	≤0.03	0.3-0.65	/	≤0.25	≤0.3	/	/	/	/	/	/
	20	0.07-0.23	0.17-0.37	0.38-0.65	≤0.03	≤0.03	0.3-0.65	/	≤0.25	≤0.3	/	/	/	/	/	/
GB 5310	20G	0.17-0.24	0.17-0.37	0.38-0.65	≤0.03	≤0.03	≤0.25	≤0.15	≤0.2	≤0.25	/	/	/	/	/	/

	20MnG	0.17-0.24	0.17-0.37	0.7-1.0	≤0.03	≤0.03	≤0.25	≤0.15	≤0.2	≤0.25	/	/	/	/	/	/
	25MnG	0.22-0.3	0.17-0.37	0.7-1.0	≤0.03	≤0.03	≤0.25	≤0.15	≤0.2	≤0.25	/	/	/	/	/	/
	15CrMoG	0.12-0.18	0.17-0.37	0.4-0.7	≤0.03	≤0.03	0.8-1.1	0.4-0.55	≤0.2	≤0.3	/	/	/	/	/	/
	12Cr2MoG	0.08-0.15	≤0.5	0.4-0.7	≤0.03	≤0.03	2.0-2.5	0.9-1.2	≤0.2	≤0.3	/	/	/	/	/	/
	12Cr1MoVG	0.08-0.15	0.17-0.37	0.4-0.7	≤0.03	≤0.03	0.9-1.2	0.25-0.35	≤0.2	≤0.3	0.15-0.3	/	/	/	/	/
	12Cr2MoWVTiB	0.08-0.15	0.45-0.75	0.45-0.65	≤0.03	≤0.03	1.6-2.1	0.5-0.65	≤0.2	≤0.3	0.28-0.42	/	0.3-0.55	0.08-0.18	B0.002-0.008	/
	10Cr9Mo1VNb	0.08-0.12	0.2-0.5	0.3-0.6	≤0.02	≤0.01	8.0-9.5	0.85-1.05	≤0.2	≤0.4	0.18-0.25	≤0.04	/	/	0.06-0.1	0.03-0.07
ASME SA210	SA210 A1	≤0.27	≥0.1	≤0.93	≤0.03	≤0.03	/	/	/	/	/	/	/	/	/	/
	SA210 C	≤0.35	≥0.1	0.29-1.06	≤0.03	≤0.03	/	/	/	/	/	/	/	/	/	/
ASME SA213	SA213 T11	0.05-0.15	0.5-1.0	0.3-0.6	≤0.03	≤0.03	1.0-1.5	0.5-1.0	/	/	/	/	/	/	/	/
	SA213 T12	0.05-0.15	≤0.5	0.3-0.6	≤0.03	≤0.03	0.8-1.25	0.44-0.65	/	/	/	/	/	/	/	/
	SA213 T22	0.05-0.15	≤0.5	0.3-0.6	≤0.03	≤0.01	1.9-2.6	0.87-1.13	/	/	/	/	/	/	/	/
	SA213 T23	0.04-0.1	≤0.5	0.1-0.6	≤0.03	≤0.03	1.9-2.6	0.05-0.3	/	/	/	≤0.03	1.45-1.75	/	0.02-0.08	≤0.04
	SA213 T91	0.08-0.12	0.2-0.5	0.3-0.6	≤0.02	≤0.01	8.0-9.5	0.85-1.05	/	≤0.4	0.18-0.25	≤0.015	/	/	0.06-0.1	0.03-0.07
	SA213 T92	0.07-0.13	≤0.5	0.3-0.6	≤0.02	≤0.01	8.5-9.5	0.3-0.6	/	≤0.4	0.15-0.25	≤0.015	1.5-2.0	/	0.04-0.09	0.03-0.07
DIN 17175	ST45.8-III	≤0.21	0.1-0.35	0.4-1.2	≤0.04	≤0.04	/	/	/	/	/	/	/	/	/	/
	15Mo3	0.12-0.2	0.1-0.35	0.4-0.8	≤0.035	≤0.035	/	0.25-0.35	/	/	/	/	/	/	/	/
	13CrMo44	0.0-0.18	0.1-0.35	0.4-0.7	≤0.035	≤0.035	0.7-1.1	0.45-0.65	/	/	/	/	/	/	/	/
	10CrMo910	0.08-0.15	≤0.5	0.3-0.7	≤0.025	≤0.025	2.0-2.5	0.9-1.1	≤0.3	≤0.3	/	≤0.015	/	/	/	/

Product Display

We can produce different sizes, thicknesses, widths and materials according to your requirements

Pipe Grades:

A53 - ATSM A53 is a carbon steel alloy, used mostly for low pressure plumbing and comes in 3 types:

A53 Type F – Longitudinally furnace butt welded or continuous welded

A53 Type E – Longitudinally electric resistance welded (ERW)

A53 Type S - Seamless pipe

A106B – ASTM A 106 seamless pressure pipe, (ASME SA106 pipe) used in the construction of oil and gas refineries, power plants, and boilers.

A500B – Seamless carbon steel structural tubing in round, square and rectangular shapes. (HSS)

API 5L – Standards for pipe suitable for use in conveying gas, water, and oil in the natural gas and oil industries.

X52 – Welded pipe, widely used in petroleum and natural gas industries.

4130 – An alloy pipe often used int he Oil and Gas industries.

Other Pipe and Tubing Terms of Interest:

BPE – Black Plain End Pipe

BTC – Black Threaded & Coupled

GPE – Galvanized Plain End

GTC – Galvanized Threaded & Coupled

TOE – Threaded One End

Typical Pipe Coatings & Finishes:

Galvanized – Covered with a protective zinc coating on steel to prevent the material from rusting. The process can be hot-dip-galvanizing where the material is dipped in molten zinc or Electro-Galvanized where the steel sheet from which the pipe is made was galvanized during production by an electro-chemical reaction.

Uncoated – Uncoated Pipe

Black Coated – Coated with a dark colored iron-oxide

Red Primed – Red Oxide Primed used as a base coat for ferrous metals, gives iron and steel surfaces a layer of protection