奥蓝德钢管
ALLLAND STEEL PIPE

ASTM A106

- ALLLAND Production Standards Overview

Definition and Applications

1. Definition

ASTM A106 is mainly stipulates the manufacturing process, materials, performance, testing and acceptance requirements for seamless carbon steel pipes suitable for high-temperature and high-pressure working conditions.The main steel grades include Grade A, Grade B and Grade C.

2. ALLLAND ASTM A106 Steel Pipe Dimensions

Parameters	Dimensions
O.D.	21.3 mm – 1219.2 mm（1/2" – 48"）
WT	1.73 mm – 59.54 mm（Sch 40 – Sch 160）
Length	5.8 m – 12 m（19' – 40'）
Material	ASTM A106 Grade A / B / C
Process	Seamless
Connection	Butt-weld / Threaded / Groove

3. Application

ASTM A106 is applied to process pipelines for transporting high-temperature and high-pressure steam, water, oil and gas and other media in power plants, boilers, oil refineries and chemical facilities, emphasizing pressure-bearing capacity, endurance strength and high-temperature oxidation resistance in a hot state.

Critical Tolerances

Our ASTM A106 standard steel pipes are manufactured in strict compliance with the specification requirements.

Item	Tolerance	Description
O.D.	+0.3%	O.D. > 30-50mm (cold rolled pipe)
	+0.8%	O.D. > 50-325mm (cold rolled pipe)
	+1.0%	O.D. > 6-168 mm (hot rolled pipe)
WT (cold rolled pipe)	+15% / -12.5%	WT < 20mm, O.D. ≤ 73.0mm
	+17.5% / -10%	WT ≥ 20mm, O.D. > 73.0mm
WT (hot rolled pipe)	+10%	WT ≤ 25mm
	-10% / +12.5%	WT ≤ 25mm

Chemical and Mechanical Properties

1. Chemical Composition (wt%, max)

Element	Composition, %		
	Grade A	Grade B	Grade C
C, max	0.25	0.30	0.35
Mn	0.27-0.93	0.29-1.06	0.29-1.06
P, max	0.035	0.035	0.035
S, max	0.035	0.035	0.035
Si, min	0.10	0.10	0.10
Ni, max	0.40	0.40	0.40
Cr, max	0.40	0.40	0.40
Cu, max	0.40	0.40	0.40
V, max	0.08	0.08	0.08
Mo, max	0.15	0.15	0.15

2. Mechanical Properties

Grade		Tensile Strength, min	Yield Strength, min
Grade A	psi	47850	30000
	MPa	330	205
Grade B	psi	60150	35000
	MPa	415	240
Grade C	psi	73000	40000
	MPa	485	275

Dimension Specifications Table

DIAMETER		O.D	WALL THICKNESS WEIGHT							
			STD		SCH40		SCH80		SCH160	
DN	INCH	MM	MM	KG/M	MM	KG/M	MM	KG/M	MM	KG/M
3	1/8"	10.3	1.73	0.37	1.73	0.37	2.41	0.47	/	/
6	1/4"	13.7	2.24	0.63	2.24	0.63	3.02	0.8	/	/
9	3/8"	17.1	2.31	0.84	2.31	0.84	3.2	1.1	/	/
15	1/2"	21.3	2.77	1.27	2.77	1.27	3.73	1.62	4.78	1.95
20	3/4"	26.7	2.87	1.69	2.87	1.69	3.91	2.2	5.56	2.9
25	1"	33.4	3.38	2.5	3.38	2.5	4.55	3.24	6.35	4.24
32	1 1/4"	42.2	3.56	3.39	3.56	3.39	4.85	4.47	6.35	5.61
40	1 1/2"	48.3	3.68	4.05	3.68	4.05	5.08	5.41	7.14	7.25
50	2"	60.3	3.91	5.44	3.91	5.44	5.54	7.48	8.74	11.11
65	2 1/2"	73	5.16	8.63	5.16	8.63	7.01	11.41	9.53	14.92
80	3"	88.9	5.49	11.29	5.49	11.29	7.62	15.27	11.13	21.35
90	3 1/2"	101.6	5.74	13.57	5.74	13.57	8.08	18.63	/	/
100	4"	114.3	6.02	16.07	6.02	16.07	8.56	22.32	13.49	33.54
125	5"	141.3	6.55	21.77	6.55	21.77	9.53	30.97	15.88	49.11
150	6"	168.3	7.11	28.26	7.11	28.26	10.97	42.56	18.26	67.56
200	8"	219.1	8.18	42.55	8.18	42.55	12.7	64.64	23.01	111.27
250	10"	273	9.27	60.29	9.27	60.29	15.09	95.97	28.58	172.26
300	12"	323.8	9.53	73.86	10.31	79.7	17.48	132.04	33.32	238.68
350	14"	355.6	9.53	81.33	11.13	94.55	19.05	158.1	35.71	281.7
400	16"	406.4	9.53	93.27	12.7	123.3	21.44	203.53	40.49	365.36
450	18"	457.2	9.53	105.21	14.27	155.87	23.83	254.67	45.24	459.59
500	20"	508	9.53	117.15	15.09	183.42	26.19	311.18	50.01	564.81
550	22"	558.8	9.53	129.08	/	/	28.58	373.69	53.98	671.99
600	24"	609.6	9.53	141.02	17.48	255.24	30.96	441.78	59.54	807.63

Testing Requirements

1. Tensile Test

- Determine the tensile strength, yield strength and elongation of the steel pipe, and verify its core mechanical properties.

2. Bending Test

- Evaluate the ductility and bending performance of the material. The samples should be cut from the pipe section.

3. Compression Test

- Test the ductility and plastic deformation capacity of the weld seam and the base material, and evaluate their compressive strength performance.

4. Static Water Pressure Test

- Verify the sealing integrity and pressure-bearing capacity of the steel pipe under pressure, and ensure there is no leakage.

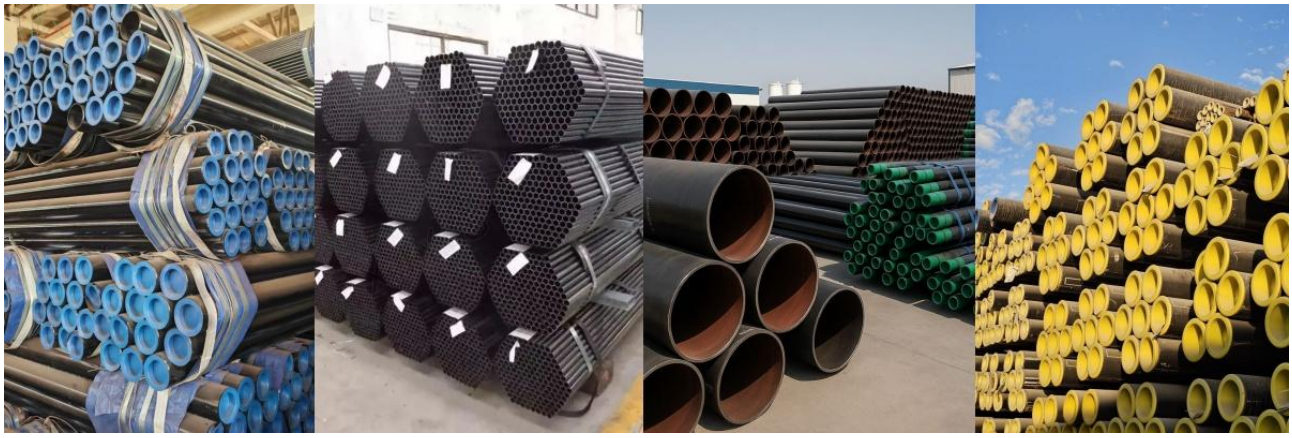
5. Non-destructive Electrical Test

- Using non-destructive testing methods such as eddy current testing, defects on the surface or near the surface of the steel pipe, such as cracks or inclusions, can be detected.

Surface treatment

Method: Oil Coating, Black Coating, Clear Coating, FBE, 3LBE, 3LPP.

ALLLAND ASTM A106 Product Images



The image shows steel pipes actually produced by our company