

ASTM A106

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Production Standard of ASTM A106

● ASTM A106

ASTM A106 pipes (ASME SA106 pipes) are seamless pressure pipes with widespread applications in the infrastructure of oil and gas refineries, power plants, petrochemical facilities, boilers, and marine vessels. These pipes serve the critical function of transporting fluids and gases under elevated temperature and pressure conditions.

● Dimensions and Sizes of ASTM A106

ASTM A106 Pipe Dimensions Chart ANSI B36. 10															
NP S	DN	OD	SC H 10	SC H 20	SCH 30	SC H Sth	SCH 40	SCH 60	SCH XS	SCH 80	SCH 100	SCH 120	SCH 140	SCH 160	SCH XXS
1/8	6	10.3	1.24		1.45	1.73	1.73		2.41	2.41					
1/4	8	13.7	1.65		1.85	2.24	2.24		3.02	3.02					
3/8	10	17.1	1.65		1.85	2.31	2.31		3.2	3.2					
1/2	15	21.3	2.1		2.41	2.7	2.77		3.73	3.73				4.78	7.47

			1			7									
3/4	20	26.7	2.1 1		2.41	2.8 7	2.87		3.91	3.91				5.56	7.82
1	25	33.4	2.7 7		2.9	3.3 8	3.38		4.55	4.55				6.35	9.09
1.2 5	32	42.2	2.7 7		2.97	3.5 6	3.56		4.85	4.85				6.35	9.7
1 1/2	40	48.3	2.7 7		3.18	3.6 8	3.68		5.08	5.08				7.14	10.1 5
2	50	60.3	2.7 7		3.18	3.9 1	3.91		5.54	5.54				8.74	11.0 7
2 1/2	65	73	3.0 5		4.78	5.1 6	5.16		7.01	7.01				9.53	14.0 2
3	80	88.9	3.0 5		4.78	5.4 9	5.49		7.62	7.62				11.1 3	15.2 4
3 1/2	90	101. 6	3.0 5		4.78	5.7 4	5.74		8.08	8.08					
4	100	114. 3	3.0 5		4.78	6.0 2	6.02		8.56	8.56		11.1 3		13.4 9	17.1 2
5	125	141. 3	3.4			6.5 5	6.55		9.53	9.53		12.7		15.8 8	19.0 5
6	150	168. 3	3.4			7.1 1	7.11		10.9 7	10.9 7		14.2 7		18.2 6	21.9 5
8	200	219. 1	3.7 6	6.3 5	7.04	8.1 8	8.18	10.3 1	12.7	12.7	15.0 9	18.2 6	20.6 2	23.0 1	22.2 3
10	250	273	4.1 9	6.3 5	7.8	9.2 7	9.27	12.7	12.7	15.0 9	18.2 6	21.4 4	25.4	28.5 8	25.4
12	300	323. 8	4.5 7	6.3 5	8.38	9.5 3	10.3 1	14.2 7	12.7	17.4 8	21.4 4	25.4	28.5 8	33.3 2	25.4
14	350	355. 6	6.3 5	7.9 2	9.53	9.5 3	11.1 3	15.0 9	12.7	19.0 5	23.8 3	27.7 9	31.7 5	35.7 1	
16	400	406. 4	6.3 5	7.9 2	9.53	9.5 3	12.7	16.6 6	12.7	21.4 4	26.1 9	30.9 6	36.5 3	40.4 9	
18	450	457	6.3 5	7.9 2	11.1 3	9.5 3	14.2 7	19.0 5	12.7	23.8 3	29.3 6	34.9 3	39.6 7	45.2 4	
20	500	508	6.3 5	9.5 3	12.7	9.5 3	15.0 9	20.6 2	12.7	26.1 9	32.5 4	38.1	44.4 5	50.0 1	
22	550	559	6.3 5	9.5 3	12.7	9.5 3		22.2 3	12.7	28.5 8	34.9 3	41.2 8	47.6 3	53.9 8	

24	600	610	6.3 5	9.5 3	14.2 7	9.5 3	17.4 8	24.6 1	12.7	30.9 6	38.8 9	46.0 2	52.3 7	59.5 4	
26	650	660	7.9 2	12. 7		9.5 3			12.7						
28	700	711	7.9 2	12. 7	15.8 8	9.5 3			12.7						
30	750	762	7.9 2	12. 7	15.8 8	9.5 3			12.7						
32	800	813	7.9 2	12. 7	15.8 8	9.5 3	17.4 8		12.7						
34	850	864	7.9 2	12. 7	15.8 8	9.5 3	17.4 8		12.7						
36	900	914	7.9 2	12. 7	15.8 8	9.5 3	19.0 5		12.7						
38	950	965				9.5 3			12.7						
40	100 0	1016				9.5 3			12.7						
42	105 0	1067				9.5 3			12.7						
44	110 0	1118				9.5 3			12.7						
46	115 0	1168				9.5 3			12.7						
48	120 0	1219				9.5 3			12.7						

●Chemical Composition of ASTM A106

Chemical Composition %

	Grade A	Grade B	Grade C
Carbon, max	0.25	0.3	0.35
Manganese	0.27-0.93	0.29-1.06	0.29-1.06
Phosphorus, max	0.035	0.035	0.035
Sulfur, max	0.035	0.035	0.035
Silicon, min	0.1	0.1	0.1
Chromium, max	0.4	0.4	0.4
Copper, max	0.4	0.4	0.4
Molybdenum, max	0.15	0.15	0.15
Nickel, max	0.4	0.4	0.4
Vanadium, max	0.08	0.08	0.08

●Mechanical Properties Tensile Strength and Yield Strength of ASTM A106

Mechanical Properties			
	Grade A	Grade B	Grade C
Tensile Strength, min, psi [MPa]	48 000 [330]	60 000 [415]	70 000 [485]
Yield Strength, min, psi [MPa]	30 000 [205]	35 000 [240]	40 000 [275]