

Pipe Specification A106

Specification	A106 NPS 1/8 -- 48 ANSI Schedules to 160			
Scope	Covers SEAMLESS carbon steel nominal wall pipe for high-temperature service, suitable for bending, flanging and similar forming operations. NPS 1 1/2 and under may be either hot finished or cold drawn. NPS 2 and larger shall be hot finished unless otherwise specified.			
Kinds of Steel Permitted For Pipe Material	Killed Steel Open-hearth Electric-furnace Basic-oxygen			
Hot-Dipped Galvanizing	Not covered in specification.			
Permissible Variations in Wall Thickness	The minimum wall thickness at any point shall not be more than 12.5% under the nominal wall thickness specified.			
Chemical Requirements		<u>Grade A</u>	<u>Grade B</u>	<u>Grade C</u>
	Carbon max. %.....	0.25	0.30	0.35
	Manganese %.....	0.27 to 0.93	0.29 to 1.06	0.29 to 1.06
	Phosphorous, max. %.....	0.025	0.025	0.025
	Sulfur, max. %.....	0.025	0.025	0.025
	Silicon, min. %.....	0.10	0.10	0.10
Tensile Requirements	Seamless			
		<u>Grade A</u>	<u>Grade B</u>	<u>Grade C</u>
	Tensile Strength, min., psi.....	48,000	60,000	70,000
	Yield Strength, min., psi.....	30,000	35,000	40,000
Hydrostatic Testing	Inspection test pressures produce a stress in the pipe wall equal to 60% or specified minimum yield strength (SMYS) at room temperature. Maximum Pressures are not to exceed 2500 psi for NPS 3 and under and 2800 psi for the larger sizes. Pressure is maintained for not less than 5 seconds.			
Permissible Variations in Weights per Foot	Weight of any length shall not vary more than 10% over and 3.5% under that specified. NOTE -- NPS 4 and smaller -- weighed in lots. Larger sizes -- by length			
Permissible Variations in Outside Diameter	Outside Diameter at any point shall not vary from standard specified more than--			
	<u>NPS</u>	<u>Over</u>	<u>Under</u>	
	1 1/2 and smaller	1/64"	1/32"	
	2 -- 4	1/32"	1/32"	
	5 -- 8	1/16"	1/32"	
	10 -- 18	3/32"	1/32"	
	20 -- 26	1/8"	1/32"	
Mechanical Tests Specified	Tensile Test -- NPS 8 and larger -- either transverse or longitudinal acceptable Smaller than NPS 8 -- weighed in lots. Larger sizes -- by length. Flattening Test -- NPS 2 and larger. Bending Test(Cold) -- NPS 2 and under.			
		<u>Degree of Bend</u>	<u>Diameter of Mandrel</u>	
		For Normal A106 uses	90	12 x nom. dia. of pipe
		For Close Coiling	180	8 x nom. dia. of pipe
Number of Tests Required	Tensile	<u>NPS</u>	<u>On One Length From Each Lot of</u>	
		5 and smaller	400 or less	
		6 and larger	200 or less	
	Bonding	2 and smaller	400 or less	
	Flattening	2 through 5	400 or less	
		6 and over	200 or less	
Lengths	Lengths required shall be specified on order. No "joints" permitted unless otherwise specified. If no definite lengths required, following practice applies: Single Random -- 16' - 22'. 5% may be 12' - 16' Double Random -- Minimum length 22', Minimum average 35'. 5% may be 16' - 22'.			
Required Markings on Each Length (On Tags attached to each Bundle in case of Bundled Pipe)	Rolled Stamped or Stenciled (Mfgs. option) Manufacturer's name or brand. Length of pipe. A106 A, A106 B, A106 C. ANSI schedule number. Hydrostatic test pressure and/or NDE. Weight per foot (NPS 4 and larger) or NH if neither is specified. Additional "S" if tested supplementary requirements.			
General Information	* Unless otherwise specified, pipe furnished with plain ends. * Purchaser may specify NDE * Surface finish standards are outlined in specification. in lieu of hydrostatic test or neither			