

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 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	<table border="1"> <thead> <tr> <th></th> <th><u>Grade A</u></th> <th><u>Grade B</u></th> <th><u>Grade C</u></th> </tr> </thead> <tbody> <tr> <td>Carbon max. %.....</td> <td>0.25</td> <td>0.30</td> <td>0.35</td> </tr> <tr> <td>Manganese %.....</td> <td>0.27 to 0.93</td> <td>0.29 to 1.06</td> <td>0.29 to 1.06</td> </tr> <tr> <td>Phosphorous, max. %.....</td> <td>0.025</td> <td>0.025</td> <td>0.025</td> </tr> <tr> <td>Sulfur, max. %.....</td> <td>0.025</td> <td>0.025</td> <td>0.025</td> </tr> <tr> <td>Silicon, min. %.....</td> <td>0.10</td> <td>0.10</td> <td>0.10</td> </tr> </tbody> </table>		<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
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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– <table border="1"> <thead> <tr> <th><u>NPS</u></th> <th><u>Over</u></th> <th><u>Under</u></th> </tr> </thead> <tbody> <tr> <td>1 1/2 and smaller</td> <td>1/64"</td> <td>1/32"</td> </tr> <tr> <td>2 – 4</td> <td>1/32"</td> <td>1/32"</td> </tr> <tr> <td>5 – 8</td> <td>1/16"</td> <td>1/32"</td> </tr> <tr> <td>10 – 18</td> <td>3/32"</td> <td>1/32"</td> </tr> <tr> <td>20 – 26</td> <td>1/8"</td> <td>1/32"</td> </tr> </tbody> </table>	<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"						
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Mechanical Tests Specified	<p>Tensile Test -- NPS 8 and larger – either transverse or longitudinal acceptable Smaller than NPS 8 – weighed in lots. Larger sizes – by length.</p> <p>Flattening Test -- NPS 2 and larger.</p> <p>Bending Test(Cold) -- NPS 2 and under.</p> <table border="1"> <thead> <tr> <th></th> <th><u>Degree of Bend</u></th> <th><u>Diameter of Mandrel</u></th> </tr> </thead> <tbody> <tr> <td>For Normal A106 uses</td> <td>90</td> <td>12 x nom. dia. of pipe</td> </tr> <tr> <td>For Close Coiling</td> <td>180</td> <td>8 x nom. dia. of pipe</td> </tr> </tbody> </table>		<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															
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Lengths	Lengths required shall be specified on order. No "jointers" 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)	<table border="1"> <tbody> <tr> <td>Rolled Stamped or Stenciled (Mfgrs. option)</td> <td>Length of pipe.</td> </tr> <tr> <td>Manufacturer's name or brand.</td> <td>ANSI schedule number.</td> </tr> <tr> <td>A106 A, A106 B, A106 C.</td> <td>Weight per foot (NPS 4 and larger)</td> </tr> <tr> <td>Hydrostatic test pressure and/or NDE.</td> <td>Additional "S" if tested supplementary requirements.</td> </tr> <tr> <td>or NH if neither is specified.</td> <td></td> </tr> </tbody> </table>	Rolled Stamped or Stenciled (Mfgrs. option)	Length of pipe.	Manufacturer's name or brand.	ANSI schedule number.	A106 A, A106 B, A106 C.	Weight per foot (NPS 4 and larger)	Hydrostatic test pressure and/or NDE.	Additional "S" if tested supplementary requirements.	or NH if neither is specified.															
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General Information	* Unless otherwise specified, pipe furnished with plain ends. * Purchaser may specify NDE in lieu of hydrostatic test or neither. * Surface finish standards are outlined in specification.																								