

Pipe Specification A53

Specification	A53 NPS 1/8 -- 26 STD. XS and XXS, ANSI Schedules 10 through 160																									
Scope ASTM A53B	Covers Seamless and Welded, Black and hot-dipped galvanized nominal (average) wall pipe for coiling, bending, flanging and other special purposes and is suitable for welding. Continuous-Welded pipe is not intended for flanging. Purpose for which pipe is intended should be stated on order.																									
Kinds of Steel Permitted For Pipe Material	Open-hearth Basic-oxygen Electric-furnace																									
Hot-Dipped Galvanizing	Sets standards for coating of pipe with zinc inside and outside by the hot-dipped process. Weight of coating must not average less than 1.8 oz. Per square foot and not less than 1.6 oz. Per square foot.																									
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 style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 15%; text-align: center;"><u>C max %</u></th> <th style="width: 15%; text-align: center;"><u>Mn max %</u></th> <th style="width: 15%; text-align: center;"><u>P max %</u></th> <th style="width: 15%; text-align: center;"><u>S max %</u></th> </tr> </thead> <tbody> <tr> <td>Seamless or ERW</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Grade A</td> <td style="text-align: center;">0.25</td> <td style="text-align: center;">0.95</td> <td style="text-align: center;">0.05</td> <td style="text-align: center;">0.06</td> </tr> <tr> <td>Grade B</td> <td style="text-align: center; border: 2px solid red;">0.30</td> <td style="text-align: center; border: 2px solid red;">1.20</td> <td style="text-align: center; border: 2px solid red;">0.05</td> <td style="text-align: center; border: 2px solid red;">0.06</td> </tr> <tr> <td>Continuous-weld</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> <td style="text-align: center;">0.08</td> <td style="text-align: center;">0.06</td> </tr> </tbody> </table>		<u>C max %</u>	<u>Mn max %</u>	<u>P max %</u>	<u>S max %</u>	Seamless or ERW					Grade A	0.25	0.95	0.05	0.06	Grade B	0.30	1.20	0.05	0.06	Continuous-weld	-	-	0.08	0.06
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Hydrostatic Testing	Hydrostatic inspection test pressures for plain end and threaded and coupled pipe are specified. Hydrostatic pressure shall be maintained for not less than 5 seconds for all sizes of seamless and electric resistance-weld pipe.																									
Permissible Variations in Weights per Foot	Plus or Minus 10%																									
Permissible Variations in Outside Diameter	Outside Diameter at any point shall not vary from standard specified more than -- <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;"><u>For NPS 1 1/2 and Smaller Sizes</u></th> <th style="width: 50%; text-align: center;"><u>For NPS 2 and Larger Sizes</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1/64 " 1/32" under</td> <td style="text-align: center;">1% over 1% under</td> </tr> </tbody> </table>	<u>For NPS 1 1/2 and Smaller Sizes</u>	<u>For NPS 2 and Larger Sizes</u>	1/64 " 1/32" under	1% over 1% under																					
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Mechanical Tests Specified	<p>Tensile Test -- Transverse required on ERW for NPS 8 and large.</p> <p>Sending Test (Cold) -- STD and XS-NPS 2 and under XXS-NPS 1 1/4 and under.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 30%; text-align: center;"><u>Degree of Bend</u></th> <th style="width: 30%; text-align: center;"><u>Diameter of Mandrel</u></th> </tr> </thead> <tbody> <tr> <td>For Normal A53 Uses</td> <td style="text-align: center;">90</td> <td style="text-align: center;">12 x nom. dia. of pipe</td> </tr> <tr> <td>For Close Coiling</td> <td style="text-align: center;">180</td> <td style="text-align: center;">8 x nom. dia. of pipe</td> </tr> </tbody> </table> <p>Flattening Test -- NPS 2 and larger STD and XS. (Not required for XXS pipe).</p>		<u>Degree of Bend</u>	<u>Diameter of Mandrel</u>	For Normal A53 Uses	90	12 x nom. dia. of pipe	For Close Coiling	180	8 x nom. dia. of pipe																
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Number of Tests Required	<p>Seamless and Electric-Resistance-Welded -- Bending, flattening, tensile on one length of pipe from each lot of 500 lengths or less of a size.</p> <p>Continuous-Weld -- Bending, flattening, tensile</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;"><u>NPS 1 1/2 & smaller</u></th> <th style="width: 50%; text-align: center;"><u>NPS 2 & larger</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">one/25 tons</td> <td style="text-align: center;">one/50 tons</td> </tr> </tbody> </table>	<u>NPS 1 1/2 & smaller</u>	<u>NPS 2 & larger</u>	one/25 tons	one/50 tons																					
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Lengths	<p>Standard Weight</p> <p>Single Random -- 16' - 22'. 5% may be jointers. If Plain Ends -- 5 % may be 12' - 16'.</p> <p>Double Random -- Shortest Length 22', minimum average for order 35'.</p> <p>Extra Strong & Double Extra Strong</p> <p>Single Random -- 12' - 22'. 5% may be 6' - 12'.</p> <p>Double Random (XS and lighter) -- Shortest Length 22', minimum average for order 35'.</p> <p>Lengths longer than single random with wall thicknesses heavier than XS subject to negotiation.</p>																									
Required Markings on Each Length (On Tags attached to each Bundle in case of Bundled Pipe)	<p>Rolled, Stamped or Stenciled (Mfgs. Option)</p> <p>Name or brand of manufacturer.</p> <p>Kind of pipe, that is, Continuous Welded, Electric-Resistance-Welded A, Electric-Resistance-Welded B, Seamless A; or Seamless B; XS for extra strong, XXS for double extra strong.</p> <p>ASTM A53</p> <p>Length of pipe.</p>																									
General Information	<p>Couplings -- Applied handling tight. Couplings, 2" and smaller straight tapped, other sizes taper tapped.</p> <p>Thread Protection -- Applied to pipe 4" and large.</p> <p>End Finish (unless otherwise specified) --</p> <p>STD or XS, or wall thicknesses less than 0.500 in. (excluding XXS): Plain and beveled.</p> <p>All XXS and wall thicknesses over 0.500 in.: Plain end square cut.</p>																									