



# DEACON INDUSTRIAL SUPPLY COMPANY, INC.

## Pipe Specification A53

<b>Specification</b>	<b>A53</b> NPS 1/8 -- 26 STD. XS and XXS, ANSI Schedules 10 through 160												
<b>Scope</b>	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.												
<b>Kinds of Steel Permitted For Pipe Material</b>	Open-hearth      Basic-oxygen Electric-furnace												
<b>Hot-Dipped Galvanizing</b>	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.												
<b>Permissible Variations in Wall Thickness</b>	The minimum wall thickness at any point shall not be more than 12.5% under the nominal wall thickness specified.												
<b>Chemical Requirements</b>	<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												
<b>Tensile Requirements</b>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="text-align: center;"><u>Continuous-Welded</u></td> <td style="text-align: center;"><u>Seamless and Electric-resistance-welded</u></td> </tr> <tr> <td></td> <td style="text-align: center;"><u>Grade A</u></td> <td style="text-align: center;"><u>Grade B</u></td> </tr> <tr> <td>Tensile Strength, min., psi.....</td> <td style="text-align: center;">45,000</td> <td style="text-align: center;">48,000      60,000</td> </tr> <tr> <td>Yield Strength, min., psi.....</td> <td style="text-align: center;">25,000</td> <td style="text-align: center;">30,000      35,000</td> </tr> </table>		<u>Continuous-Welded</u>	<u>Seamless and Electric-resistance-welded</u>		<u>Grade A</u>	<u>Grade B</u>	Tensile Strength, min., psi.....	45,000	48,000      60,000	Yield Strength, min., psi.....	25,000	30,000      35,000
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<b>Hydrostatic Testing</b>	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.												
<b>Permissible Variations in Weights per Foot</b>	Plus or Minus 10%												
<b>Permissible Variations in Outside Diameter</b>	Outside Diameter at any point shall not vary from standard specified more than -- <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"><u>For NPS 1 1/2 and Smaller Sizes</u></td> <td style="width: 50%; text-align: center;"><u>For NPS 2 and Larger Sizes</u></td> </tr> <tr> <td style="text-align: center;">1/64 "      1/32" under</td> <td style="text-align: center;">1% over    1% under</td> </tr> </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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1/64 "      1/32" under	1% over    1% under												
<b>Mechanical Tests Specified</b>	Tensile Test -- Transverse required on ERW for NPS 8 and large. Sending Test (Cold) -- STD and XS-NPS 2 and under XXS-NPS 1 1/4 and under. <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"></td> <td style="text-align: center;"><u>Degree of Bend</u></td> <td style="text-align: center;"><u>Diameter of Mandrel</u></td> </tr> <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> </table> Flattening Test -- NPS 2 and larger STD and XS. (Not required for XXS pipe).		<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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For Normal A53 Uses	90	12 x nom. dia. of pipe											
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<b>Number of Tests Required</b>	Seamless and Electric-Resistance-Welded -- Bending, flattening, tensile on one length of pipe from each lot of 500 lengths or less of a size. Continuous-Weld -- Bending, flattening, tensile <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"><u>NPS 1 1/2 &amp; smaller</u></td> <td style="width: 50%; text-align: center;"><u>NPS 2 &amp; larger</u></td> </tr> <tr> <td style="text-align: center;">one/25 tons</td> <td style="text-align: center;">one/50 tons</td> </tr> </table>	<u>NPS 1 1/2 &amp; smaller</u>	<u>NPS 2 &amp; larger</u>	one/25 tons	one/50 tons								
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<b>Lengths</b>	Standard Weight Single Random -- 16' - 22'. 5% may be jointers. If Plain Ends -- 5% may be 12' - 16'. Double Random -- Shortest Length 22', minimum average for order 35'. Extra Strong & Double Extra Strong Single Random -- 12' - 22'. 5% may be 6' - 12'. Double Random (XS and lighter) -- Shortest Length 22', minimum average for order 35'. Lengths longer than single random with wall thicknesses heavier than XS subject to negotiation.												
<b>Required Markings on Each Length (On Tags attached to each Bundle in case of Bundled Pipe)</b>	Rolled, Stamped or Stenciled (Mfrs. Option) Name or brand of manufacturer. 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. ASTM A53 Length of pipe.												
<b>General Information</b>	Couplings -- Applied handling tight. Couplings, 2" and smaller straight tapped, other sizes taper tapped. Thread Protection -- Applied to pipe 4" and large. End Finish (unless otherwise specified) -- STD or XS, or wall thicknesses less than 0.500 in. (excluding XXS): Plain and beveled. All XXS and wall thicknesses over 0.500 in.: Plain end square cut.												