



# Seamless A53 Pipe Specification

Sizes 1/8" - 26" Std. XS and XXS, A.N.S.I. Schedules

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<b>Scope</b>	Covers seamless and welded <b>BLACK</b> and hot-dipped galvanized nominal (average) wall pipe for coiling, bending, flanging and other special purposes and is suitable for welding. <b>CONTINUOUS WELD</b> pipe is not intended for flanging (rail back operation to form flange using pipe wall). 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>	Same as A120			
<b>Chemical Requirements</b>	<b>Type S (Seamless Pipe) &amp; Type E (Electric Weld)</b>		<b>Type F (Furnace-Welded Pipe)</b>	
	<b>Open-Hearth, Electric-Furnace or Basic Oxygen</b>	<b>Composition -- Max %</b>		<b>Composition -- Max %</b>
		<b>C</b>	<b>Mn</b>	<b>P</b>
	Grade A	0.25	0.95	0.05
	Grade B	0.30	1.20	0.05
		<b>S</b>		<b>S</b>
		0.06		0.06
<b>Tensile Requirements</b>	<b>Continuous Weld (Furnace-Welded)</b>	<b>Acid-Bessemer</b>	<b>O.H. Basic Oxygen or Elec. Furn.</b>	
	Tensile Strength, min., psi.....	50,000	45,000	
	Yield Point min., psi .....	30,000	25,000	
	<b>Seamless or Electri-Weld</b>	<b>Grade A</b>	<b>Grade B</b>	
	Tensile Strength, min., psi.....	48,000	60,000	
	Yield Point min., psi .....	30,000	35,000	
<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 Weld Pipe.			
<b>Permissible Variations in Weights per Foot</b>	<b>For Extra Strong and Lighter Wall Thicknesses:</b> Plus or Minus 5% <b>For Heavier than Extra Strong Wall Thicknesses:</b> Plus or Minus 10%			
<b>Permissible Variations in Outside Diameter</b>	Same as A120			
<b>Mechanical Tests Specified</b>	<b>Tensile Test</b> - Transverse required on EW sizes 8 5/8" and larger <b>Bending Test (Cold)</b> Std. and XS-2" and under. XXS-1-1/4" and under.			
		<b>Degree of Bend</b>	<b>Diameter of Mandrel</b>	
	For Normal A53 Uses	90	12 x nom. diameter of pipe	
	For Close Coiling	180	8 x nom. diameter of pipe	
	<b>Flattening Test</b> - 2-1/2" and larger Std. and XS. (Not required for XXS Pipe).			
<b>Number of Tests Required</b>	<b>Seamless and Continuous Weld:</b> Bending, flattening tensile on one length of pipe from each lot of 500 lengths or less of a size. <b>Electric-Weld:</b> Bending and tensile on one length of pipe from each lot of 500 lengths or less of a size. <b>Electric-Weld:</b> Flattening on both crop ends of each length (Coil, in case of multiple lengths.)			
<b>Lengths</b>	<b>Same as A120</b> (Lengths longer than single random, heavier wall than XS subject to negotiation.)			
<b>Required Markings on Each Length</b> (On Tags attached to each Bundle in case of bundled pipe)	<b>Rolled, Stamped or Stenciled:</b> Name or brand of manufacturer. Kind of pipe, that is, Furnace-Continuous Weld, EW-A, Seamless B, etc. XS-for extra strong. XXS - for double extra strong. ASTM 53. Also necessary to indicate when electric-furnace, or basic oxygen steel is used. Length of Pipe			
<b>General Information</b>	<b>Couplings</b> - Applied handling tight. Couplings, 2" and smaller straight tapped, other sizes taper tapped. Line pipe couplings may be specified. <b>Thread Protection</b> - Same as specified under A120 <b>End Finish</b> - (unless otherwise specified) Std. or XS, or wall thicknesses less than 0.500 in (excluding XXS): Plain end beveled. EW pipe may be furnished cold expanded. All XXS and wall thicknesses over 0.500 in. Plain end square cut.			



# Seamless A106 Pipe Specification

Sizes 1/8" - 26" Std. XS and XXS, A.N.S.I Schedules

<b>Scope</b>	Covers SEAMLESS carbon steel nominal wall pipe for high-temperature service, suitable for bending, flanging and similar forming operations. Sizes 1 1/2" and under may be either hot finished or cold drawn.			
<b>Kinds of Steel Permitted for Pipe Material</b>	Killed open-hearth Electric furnace Basic-oxygen			
<b>Hot-Dipped Galvanizing</b>	Not covered in specification			
<b>Permissible Variations in Wall Thickness</b>	Same as A120			
<b>Chemical Requirements</b>		<b>GRADE A</b>	<b>GRADE B</b>	<b>GRADE C</b>
	Carbon Max. % .....	0.25	0.30	0.35
	Manganese % .....	0.27 to 0.93	0.29 to 1.06	0.29 to 1.06
	Phosphorus, max %....	0.048	0.048	0.048
	Sulfur, max %....	0.058	0.058	0.058
	Silicon, min. %	0.10	0.10	0.10
<b>Tensile Requirements</b>		<b>Seamless</b>		
		<b>Grade A</b>	<b>Grade B</b>	<b>Grade C</b>
	Tensile Strength, min., psi.....	48,000	60,000	70,000
	Yield Point min., psi .....	30,000	35,000	40,000
<b>Hydrostatic Testing</b>	Inspection test pressures produce a stress in the pipe wall equal to 60% of minimum specified Yield Point at room temperature. Maximum pressures are not to exceed 2500 psi for sizes 3" and under, and 2800 psi for the larger sizes. Pressure is maintained for not less than 5 seconds.			
<b>Permissible Variations in Weights per Foot</b>	<b>For Schedules 120 and under</b> - Weight of any length shall not vary more than 6.5% over and 3.5% under. <b>For Schedules heavier than 120</b> - Weight of any length shall not vary more than 10% over and 3.5% under. <b>NOTE</b> - Size 4" and smaller -- Weighted in lots. Larger sizes - by length.			
<b>Permissible Variations in Outside Diameter</b>	<b>Outside Diameter</b> at any point shall not vary from standard specified sizes more than --			
		<b>OVER</b>	<b>UNDER</b>	
	<b>SIZES: 1 1/2" and smaller</b>	1/64"	1/32"	
	2" - 4"	1/32"	1/32"	
	5" - 8"	1/16"	1/32"	
	10" - 18"	3/32"	1/32"	
	20" - 24"	1/8"	1/32"	
<b>Mechanical Tests Specified</b>	<b>Tensile Test</b> - All sizes - either transverse or longitudinal acceptable	<b>Degree of Bend</b>		<b>Diameter of Mandrel</b>
	<b>Bending Test (Cold)</b> - 2" and under.	For Normal A106 Uses	90	12 x nom. diameter of pipe
	<b>Flattening Test</b> - Over 2"	For Close Coiling	180	8 x nom. diameter of pipe
<b>Number of Tests Required</b>		<b>On One Length from Each Lot Of</b>		
	<b>Tensile</b>	5" and smaller	400 or less	
		6" and larger	200 or less	
	<b>Bending</b>	2" and smaller	400 or less	
	<b>Flattening</b>	over 2" through 5"	400 or less	
		6" and over	200 or less	
<b>Lengths</b>	Lengths required shall be specified on order. No "joints" permitted unless otherwise specified. If no defined lengths required, following practice applies: <b>Single Random</b> - 16' - 22' - 5% may be 12' - 16' <b>Double Random</b> - Minimum length 22', Minimum average 35' - 5% may be 16' - 22'			
<b>Required Markings on Each Length</b> (On Tags attached to each Bundle in case of Bundled Pipe)	Rolled, Stamped or Stencilled Manufacturer's private identifying mark. ASTM A106 A, A106 B or A106 C. Hydrostatic Test Pressure Length of Pipe	ANSI schedule number. Weight (4" and larger) Additional "S" if tested to supplementary requirements. Length of Pipe		
<b>General Information</b>	Unless otherwise specified, pipe furnished with plain ends. Surface finish standards are outlined in specification.			