



Seamless A53 Pipe Specification

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

Scope	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 WELD 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.							
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	Same as A120							
Chemical Requirements	Type S (Seamless Pipe) & Type E (Electric Weld)			Type F (Furnace-Welded Pipe)				
	Open-Hearth, Electric-Furnace or Basic Oxygen	Composition -- Max %			Composition -- Max %		Open-Hearth, Electric-Furnace or Basic Oxygen	
	Grade A Grade B	C 0.25 0.30	Mn 0.95 1.20	P 0.05 0.05	S 0.06 0.06	C - -	Mn - -	P 0.08
Tensile Requirements	Continuous Weld (Furnace-Welded)		Acid-Bessemer		O.H. Basic Oxygen or Elec. Furn.			
	Tensile Strength, min., psi.....		50,000		45,000			
	Yield Point min., psi		30,000		25,000			
	Seamless or Electri-Weld		Grade A		Grade B			
Tensile Strength, min., psi.....		48,000		60,000				
Yield Point min., psi		30,000		35,000				
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 Weld Pipe.							
Permissible Variations in Weights per Foot	For Extra Strong and Lighter Wall Thicknesses: Plus or Minus 5% For Heavier than Extra Strong Wall Thicknesses: Plus or Minus 10%							
Permissible Variations in Outside Diameter	Same as A120							
Mechanical Tests Specified	Tensile Test - Transverse required on EW sizes 8 5/8" and larger							
	Bending Test (Cold) Std. and XS-2" and under. XXS-1-1/4" and under.							
		Degree of Bend		Diameter of Mandrel				
	For Normal A53 Uses		90		12 x nom. diameter of pipe			
	For Close Coiling		180		8 x nom. diameter of pipe			
	Flattening Test - 2-1/2" and larger Std. and XS. (Not required for XXS Pipe).							
Number of Tests Required	Seamless and Continuous Weld: Bending, flattening tensile on one length of pipe from each lot of 500 lengths or less of a size. Electric-Weld: Bending and tensile on one length of pipe from each lot of 500 lengths or less of a size. Electric-Weld: Flattening on both crop ends of each length (Coil, in case of multiple lengths.)							
Lengths	Same as A120 (Lengths longer than single random, heavier wall than XS subject to negotiation.)							
Required Markings on Each Length (On Tags attached to each Bundle in case of bundled pipe)	Rolled, Stamped or Stenciled: 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							
General Information	Couplings - Applied handling tight. Couplings, 2" and smaller straight tapped, other sizes taper tapped. Line pipe couplings may be specified. Thread Protection - Same as specified under A120 End Finish - (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

Scope	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.			
Kinds of Steel Permitted for Pipe Material	Killed open-hearth Electric furnace Basic-oxygen			
Hot-Dipped Galvanizing	Not covered in specification			
Permissible Variations in Wall Thickness	Same as A120			
Chemical Requirements		GRADE A	GRADE B	GRADE C
	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
Tensile Requirements		Seamless		
		Grade A	Grade B	Grade C
	Tensile Strength, min., psi.....	48,000	60,000	70,000
	Yield Point min., psi	30,000	35,000	40,000
Hydrostatic Testing	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.			
Permissible Variations in Weights per Foot	For Schedules 120 and under - Weight of any length shall not vary more than 6.5% over and 3.5% under. For Schedules heavier than 120 - Weight of any length shall not vary more than 10% over and 3.5% under. NOTE - Size 4" and smaller -- Weighted in lots. Larger sizes - by length.			
Permissible Variations in Outside Diameter	Outside Diameter at any point shall not vary from standard specified sizes more than --			
		OVER	UNDER	
	SIZES: 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" - 24"	1/8"	1/32"	
Mechanical Tests Specified	Tensile Test - All sizes - either transverse or longitudinal acceptable	Degree of Bend		Diameter of Mandrel
	Bending Test (Cold) - 2" and under.	For Normal A106 Uses	90	12 x nom. diameter of pipe
	Flattening Test - Over 2"	For Close Coiling	180	8 x nom. diameter of pipe
Number of Tests Required		On One Length from Each Lot Of		
	Tensile	5" and smaller	400 or less	
		6" and larger	200 or less	
	Bending	2" and smaller	400 or less	
	Flattening	over 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 defined 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 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		
General Information	Unless otherwise specified, pipe furnished with plain ends. Surface finish standards are outlined in specification.			