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Pipe Specification API 5L

Specification	API 5L NPS 1/8 -- 26				
Scope	Covers WELDED and SEAMLESS pipe suitable for use in conveying gas, water, and oil in both the oil and natural gas industries.				
Kinds of Steel Permitted For Pipe Material	Open-hearth Basic-oxygen Electric-furnace				
Hot-Dipped Galvanizing	May be ordered galvanized.				
Permissible Variations in Wall Thickness		Grade A, B, A25	X42 through X80		
	NPS 2 1/2 and smaller -- Seamless and welded, %	+20 -- 12.5	+15 -- 12.5		
	NPS 3 -- Seamless and welded, %	+18 -- 12.5	+15 -- 12.5		
	NPS 4 through 18 -- Seamless and welded, %	+15 -- 12.5	+15 -- 12.5		
	NPS 20 and larger -- Welded, %	+17.5 -- 10.0	+19.5 -- 8.0		
	NPS 20 and larger -- Seamless, %	+15.0 -- 12.5	+17.5 -- 10.0		
Chemical Requirements	<u>C max % Mn max % P max % 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
Tensile Requirements	Lists minimum yield and tensile strength for all grades as well as a maximum tensile strength for X80. Maximum yield-to-tensile ratios outlined for cold-expanded pipe--may be waived when a fracture toughness requirement is specified.				
Hydrostatic Testing	Lists hydrostatic inspection test pressures for all sizes and grades covered by the specification.	Test Pressures are held for not less than: Seamless (all sizes) -- 5 seconds Welded (NPS 18 and smaller) -- 5 seconds (NPS 20 and larger) -- 10 seconds			
Permissible Variations in Weights per Foot	For each length of Standard Weight, Regular Weight, Extra Strong, and Double Extra Strong -- Not more than plus 10% minus 3.5%.	For Special Plain End -- Not more than plus 10% minus 5%. For Carload Lots -- Not more than minus 1.75%.			
Permissible Variations in Outside Diameter	Outside Diameter	Sizes	Over	Under	
	at any point shall not vary from standard specified more than: -----				
		NPS 1 1/2 and smaller	1/64"	1/32"	
		NPS 2 through 4	1%	1% (Buttweld Only)	
		NPS 2 through 18	.75%	.75%	
	NPS 20 through 26				
	Non-expanded	1%	1%		
Mechanical Tests Specified	Tensile Test	Bending Test (Cold) -- 2" and smaller Buttweld.			
	Seamless and Buttwelded -- All Sizes -- Longitudinal Specimens	Degree of Bend Diameter of Mandrel			
	Electric Weld -- NPS 6 and smaller -- Longitudinal NPS 8 and Larger -- Transverse	For all API Uses	90	12 x OD of pipe	
Number of Tests Required		On One Length From Each Lot of			
		NPS		Flattening	
	Tensile	5 and smaller	40 or less	Non-Expanded Electric-Weld for single lengths crop ends from each length. For multiple lengths, crop ends from each length, plus 2 intermediate rings.	
		6 through 12	200 or less		
		14 and larger	100 or less		
	2 and smaller (Buttweld)	25 tons or less			
Bending	1 1/2 and smaller (Buttweld)	50 tons or less			
Lengths		Shortest Length	Shortest Length in 95% of Entire Shipment	Minimum Average Length of Entire Shipment	
		Threaded & Coupled Pipe	In Entire Shipment		
		Single Random	16' 0"	18' 0"	--
		Double Random	22' 0"	--	35' 0"
Required Markings on Each Length (On Tags attached to each Bundle in case of Bundled Pipe)	Paint Stenciled or Die Stamped (by agreement). Manufacturer's name or mark. Spec 5L, size, weight per foot, grade, process of manufacture, type of steel, length (NPS 4 and larger only). Test pressure when higher than labulated(NPS 2 and larger only). Heat treat symbols, as applicable -- HN, HS, HA or HQ.				
General Information	Supplementary Requirements available when specified. SR5--Charpy impact Testing--Welded Pipe 20" & larger--Grade X52 or higher. SR3 -- Color Identification. SR6 -- Drop Weight Tear Testing--Welded Pipe 20" & larger--Grade X52 or higher. SR4 -- Nondestructive Inspection of Seamless Pipe. SR8 -- Fracture Tough ness Testing of Line Pipe.				