

API 5L Line Pipe

Testing Requirements

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

Mechanical Tests

Tensile Test

- Seamless – longitudinal
- ERW – longitudinal and transverse

Charpy Tests – PSL 2

Flattening Test – ERW – All sizes

Number of Tests

Flattening – Non-expanded ERW for single lengths, crop ends from each length; for multiple lengths, crop ends from first and last pipe of each coil, plus 2 intermediate rings.

Tensile –

NPS	On One Length From Each Lot of
5 and smaller	400 or less
6 through 12	200 or less
14 and larger	100 or less

Permissible Variations

Wall Thickness

Seamless: 0.158"–0.983" wall, tolerance = -12.5 % / +15 %
> = 0.984" wall, tolerance = -0.120" / +0.146" or - /+ 10 % whichever is greater
[except if OD is >= 14" & wall is >=.984" then tolerance is -10 /+15%]

HFW: < = 0.197" wall, tolerance = - /+ .020"
= 0.198"–0.590" wall, tolerance = - /+ .10.0%"
≥ 0.591" wall, tolerance = - /+ .060"

Weights per Foot

For Single Lengths Special Plain End and Grade A25 – Not more than plus 10% minus 5%

For Single Lengths Other Pipe – Not more than plus 10% minus 3.5%

For Carload Lots – Not more than minus 1.75%

Note: NPS 4 OD and smaller may be weighed individually or in convenient lots; larger sizes by length

API 5L Line Pipe

Wall, Diameter and Out of Roundness

OD	Diameter Tolerance				Out of Round Tolerance			
	Pipe Body		Pipe Ends		Pipe Body		Pipe Ends	
	SMLS	Welded	SMLS	Welded	SMLS	Welded	SMLS	Welded
< 2.375	- 0.031 / + 0.016		- 0.016 / + 0.063		Included in the diameter tolerance			
2.375 - 6.625	-/+ 0.0075 [D]		- 0.016 / + 0.063		020 [D]		0.015 [D]	
> 6.625 - 24.00	-/+ 0.0075 [D]	-/+ 0.0075 [D] up to -/+ 0.125	-/+ 0.005 [D] up to -/+ 0.063"		020 [D]		0.015 [D]	

Lengths

Plain End Pipe	Shortest Length in Entire Shipment	Minimum Avg. Length in Entire Shipment	Maximum Length
20' Nominal	9'0"	17'6"	22'6"
40' Nominal	14'0"	35'0"	45'0"
60' Nominal	21'0"	52'6"	65'0"
80' Nominal	28'0"	70'0"	85'0"

Marking Requirements on Each Length

Paint Stenciled or Die Stamped 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 tabulated (NPS 2 and larger only).

Supplemental Annexes

API Specification 5L contains 15 Supplemental Annexes that address special conditions and/or additional requirements.

- Annex A Specification for welded jointers
- Annex B Manufacturing procedure qualification for PSL 2 pipe
- Annex C Treatment of surface imperfections and defects
- Annex D Repair welding procedure
- Annex E Non-destructive inspection for other than sour service or offshore service
- Annex F Requirements for couplings (PSL 1 only)
- Annex G PSL 2 pipe with resistance to ductile fracture propagation
- Annex H PSL 2 pipe ordered for sour service
- Annex I Pipe ordered as "Through the Flowline" (TFL) pipe
- Annex J PSL 2 pipe ordered for offshore service
- Annex K Non-destructive inspection for pipe ordered for sour service and/or offshore service
- Annex L Steel designations
- Annex M Correspondence of terminology between ISO 3183 and its source documents
- Annex N Identification/Explanation of Deviations
- Annex O API Monogram