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 –

<table>
<thead>
<tr>
<th>NPS</th>
<th>On One Length From Each Lot of</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 and smaller</td>
<td>400 or less</td>
</tr>
<tr>
<td>6 through 12</td>
<td>200 or less</td>
</tr>
<tr>
<td>14 and larger</td>
<td>100 or less</td>
</tr>
</tbody>
</table>

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 >=0.984” then tolerance is -10 /+15%)

HFW: < = 0.197” wall, tolerance = -/+ 0.020”
= 0.198”–0.590” wall, tolerance = -/+ 0.10.0%”
≥ 0.591” wall, tolerance = -/+ 0.060”

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

<table>
<thead>
<tr>
<th>OD</th>
<th>Pipe Body Diameter Tolerance</th>
<th>Pipe End Diameter Tolerance</th>
<th>Out of Round Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SMLS</td>
<td>Welded</td>
<td>SMLS</td>
</tr>
<tr>
<td>&lt; 2.375</td>
<td>- 0.031 / + 0.016</td>
<td>- 0.016 / + 0.063</td>
<td>Included in the diameter tolerance</td>
</tr>
<tr>
<td>2.375 - 6.625</td>
<td>-/+ 0.0075 [D]</td>
<td>- 0.016 / + 0.063</td>
<td>020 [D] 0.015 [D]</td>
</tr>
<tr>
<td>&gt; 6.625 - 24.00</td>
<td>-/+ 0.0075 [D] up to -/+ 0.125</td>
<td>-/+ 0.005 [D] up to -/+ 0.063&quot;</td>
<td>020 [D] 0.015 [D]</td>
</tr>
</tbody>
</table>

Lengths

<table>
<thead>
<tr>
<th>Plain End Pipe</th>
<th>Shortest Length in Entire Shipment</th>
<th>Minimum Avg. Length in Entire Shipment</th>
<th>Maximum Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>20’ Nominal</td>
<td>9’0”</td>
<td>17’6”</td>
<td>22’6”</td>
</tr>
<tr>
<td>40’ Nominal</td>
<td>14’0”</td>
<td>35’0”</td>
<td>45’0”</td>
</tr>
<tr>
<td>60’ Nominal</td>
<td>21’0”</td>
<td>52’6”</td>
<td>65’0”</td>
</tr>
<tr>
<td>80’ Nominal</td>
<td>28’0”</td>
<td>70’0”</td>
<td>85’0”</td>
</tr>
</tbody>
</table>

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