## Pipe Specification A53

### Specification

**A53** NPS 1/8 -- 26 STD. XS and XXS, ANSI Schedules 10 through 160

### 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-Welded pipe is not intended for flanging. 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

The minimum wall thickness at any point shall not be more than 12.5% under the nominal wall thickness specified.

### Chemical Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Seamless or ERW</th>
<th>Continuous-welded</th>
</tr>
</thead>
<tbody>
<tr>
<td>C max %</td>
<td>Grade A: 0.25</td>
<td>Grade A: 0.25</td>
</tr>
<tr>
<td>Mn max %</td>
<td>Grade B: 0.95</td>
<td>Grade B: 1.20</td>
</tr>
<tr>
<td>P max %</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>S max %</td>
<td>0.06</td>
<td>0.06</td>
</tr>
</tbody>
</table>

### Tensile Requirements

<table>
<thead>
<tr>
<th>Grade A</th>
<th>Grade B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength, min., psi</td>
<td>45,000</td>
</tr>
<tr>
<td>Yield Strength, min., psi</td>
<td>25,000</td>
</tr>
</tbody>
</table>

### 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 resistance-weld pipe.

### Permissible Variations

in Weights per Foot

Plus or Minus 10%

### Permissible Variations

in Outside Diameter

Outside Diameter at any point shall not vary from standard specified more than --

<table>
<thead>
<tr>
<th>For NPS 1 1/2 and Smaller Sizes</th>
<th>For NPS 2 and Larger Sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/64 &quot;</td>
<td>1/32&quot; under</td>
</tr>
<tr>
<td>1% over</td>
<td>1% under</td>
</tr>
</tbody>
</table>

### Mechanical Tests Specified

<table>
<thead>
<tr>
<th>Degree of Bend</th>
<th>Diameter of Mandrel</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Normal A53 Uses</td>
<td>90 x nom. dia. of pipe</td>
</tr>
<tr>
<td>For Close Coiling</td>
<td>180 x nom. dia. of pipe</td>
</tr>
</tbody>
</table>

### Number of Tests Required

Seamless and Electric-Resistance-Welded -- Bending, flattening, tensile on one length of pipe from each lot of 500 lengths or less of a size.

Continuous-Weld -- Bending, flattening, tensile

<table>
<thead>
<tr>
<th>NPS 1 1/2 &amp; smaller</th>
<th>NPS 2 &amp; larger</th>
</tr>
</thead>
<tbody>
<tr>
<td>one/25 tons</td>
<td>one/50 tons</td>
</tr>
</tbody>
</table>

### Lengths

Standard Weight

- Single Random -- 16’ - 22’. 5% may be jointers. If Plain Ends -- 5 % may be 12’ - 16’.
- Double Random -- Shortest Length 22’, minimum average for order 35’.

Extra Strong & Double Extra Strong

- Single Random -- 12’ - 22’. 5% may be 6’ - 12’.
- Double Random (XS and lighter) -- Shortest Length 22’, minimum average for order 35’.

Lengths longer than single random with wall thicknesses heavier 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 (Mfgrs. Option)
- Name or brand of manufacturer.
- Kind of pipe, that is, Continuous Welded, Electric-Resistance-Welded A, Electric-Resistance-Welded B, Seamless A; or Seamless B; XS for extra strong, XXS for double extra strong.
- ASTM A53
- Length of pipe.

### General Information

Couplings -- Applied handling tight. Couplings, 2” and smaller straight tapped, other sizes taper tapped.

Thread Protection -- Applied to pipe 4” and large.

End Finish (unless otherwise specified) --

- STD or XS, or wall thicknesses less than 0.500 in. (excluding XXS): Plain and beveled.
- All XXS and wall thicknesses over 0.500 in.: Plain end square cut.