**Pipes for Water Conduits UNI EN 10224**

Non-alloy steel pipes and fittings for water and other fluids

**Use**
Transport networks and water supply distribution for civil and industrial uses

**Steel Grade**
L235 - L275 - L355

**Processing**
- Seamless
- Welded

**Tolerances**

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Tolerance at 100mm from the 2 ends</th>
<th>≤2,5</th>
<th>&gt;2,5</th>
<th>&gt;5,0</th>
<th>≤10,0</th>
<th>&gt;10,0</th>
</tr>
</thead>
<tbody>
<tr>
<td>D ≤219,1</td>
<td>+/- 0,5mm or +/- 0,5% whichever is the larger</td>
<td>+/- 12,5% or +/- 0,4mm whichever is the larger</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D &gt;219,1</td>
<td>+/-1,6mm</td>
<td>+/-20%</td>
<td>+/-15%</td>
<td>+/-12,5%</td>
<td>+/-10%</td>
<td></td>
</tr>
</tbody>
</table>

**Thickness and Outside Diameter for Seamless Material**

**Thickness of Electrically Welded Material ERW**
Thickness tolerance excluding the welding area +/- 10% or +/- 0,3mm whichever is the larger; the thickness in the welding area must not be lower than the minimum thickness allowed on the pipe body

**Thickmess of Welded Material SAW**
Thickness tolerance excluding the welding area +/- 7,5%; maximum height of the welding bead must fall between the following values:
- Thickness ≤ 12,5mm: 3,5mm
- Thickness > 12,5mm: 4,5mm

**Outside Diameter**
- Welded material ERW

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>D ≤219,1</td>
<td>+/-1% (with min +/-0,5mm)</td>
</tr>
<tr>
<td>D &gt;219,1</td>
<td>+/-0,75%</td>
</tr>
</tbody>
</table>

- Welded material SAW
  - +/- 0,75% with a maximum of ± 6mm for diameters ≤ 2032mm
  - D > 2032mm: the tolerance shall be agreed between customer and supplier
OUT OF ROUNDNESS
For pipes with outside diameter/thickness ratio D/t ≤ 100, the external out of roundness, calculated with the following equation, must not exceed 2%:

\[ O = 100 \frac{(D_{\text{max}} - D_{\text{min}})}{D} \]

STRAIGHTNESS
- ≤ 0.2% measured on the whole length

MARKING
Marking must be indelible or carried out by punching at a distance of 300mm from one end. Marking must include the following information:
- Manufacturer’s name or trademark
- Number of current European standard
- Name of steel
- Initial S (seamless) or W (welded) according to the manufacturing process
Any additional requests shall be agreed during the order

CERTIFICATION
UNI EN 10204

SIZE RANGE
UNI EN 10220