Invar 36 (FeNi36) / 1.3912

Invar 36® is a nickel-iron, low expansion alloy that contains 36% nickel and possesses a rate of thermal expansion approximately one-tenth that of carbon steel. Alloy 36 maintains nearly constant dimensions over the range of normal atmospheric temperatures, and has a low coefficient of expansion from cryogenic temperatures to about 500°F. This nickel iron alloy is tough, versatile and retains good strength at cryogenic temperatures.

Material Data Sheet

<table>
<thead>
<tr>
<th>ASTM</th>
<th>F1684</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNS</td>
<td>K93603</td>
</tr>
</tbody>
</table>

Main fields of application

Invar 36 is used mainly for:

- Aircraft controls
- Optical & laser systems
- Radio & electronic devices
- Composite forming tools & dies
- Cryogenic components

Chemical composition of Invar 36

<table>
<thead>
<tr>
<th>Ni (35.5 - 36.5)</th>
<th>C (0.01 max)</th>
<th>Si (0.2 max)</th>
<th>Mn (0.2 - 0.4)</th>
<th>S (0.002 max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P (0.07 max)</td>
<td>Cr (0)</td>
<td>Co (0.15 max)</td>
<td>Fe (Balance)</td>
<td></td>
</tr>
</tbody>
</table>

Mechanical properties of Invar 36

<table>
<thead>
<tr>
<th>Metallurgical Condition</th>
<th>Yield Strength</th>
<th>Tensile Strength</th>
<th>Hardness</th>
<th>Elongation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annealed, Descaled</td>
<td>KSI (MPa) 38</td>
<td>KSI (MPa) 63</td>
<td>HB</td>
<td>50mm</td>
</tr>
<tr>
<td></td>
<td>(260) Max</td>
<td>(430) Max</td>
<td>135</td>
<td>&gt;30% (Typical 40%)</td>
</tr>
</tbody>
</table>

Delivery program

- Plates: thickness range from 4 mm up to 130 mm
- Sheets: thickness range from 0.1 mm up to 3 mm
- Flat material: Various sizes mm
- Round material: Ø 3 mm up to 280 mm

Material Outlet by Hempel

ECONOXX.com offers buyers a new and uncomplicated procurement channel, which also includes small quantities and materials in special alloys at favourable conditions.

Contact us

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