CIC 20

Designation

CIC 20 / 60 / 20

CIC stands for copper / Invar® / copper and describes a composite material consisting of three layers. The core layer is made from an iron-nickel alloy with 36 % nickel content (frequently referred to as Invar®) and represents 60 % of the volume of the composite. The cover layer material is copper and represents 20 % of the volume per side. CIC shows a low thermal expansion factor together with good thermal conductivity.

COMPOSITION OF MATERIAL

- Core material: FeNi36
  Volume: 56–64 %
- Cladding: Cu-PHC
  Volume: 18–22 %

- Density 8,43 g/cm³
- Electrical conductivity 23 mΩ mm² (at 20°C R310)
- Electrical resistivity 0,043 Ω mm²/m (at 20 °C R310)
- Thermal conductivity X,Y Plane: 167 W/K m (at 20 °C); Z Plane: 20 W/K m (at 20 °C)
- Coefficient of thermal expansion (linear) 2,54 – 5,08·10⁻⁶/K (at ·55 to + 125°C)
- Modulus of elasticity (tensile) 140 GPa (at 20°C R310)

MANUFACTURING PROGRAM

| Rolls, spools, sheets | 0,02 - 0,15 mm | 1 - 610 mm |

not all combinations of thickness and width are available

TYPICAL TEMPER VALUES (information only)

<table>
<thead>
<tr>
<th></th>
<th>Tensile strength Rm in MPa</th>
<th>Yield strength Rp0.2 in MPa</th>
<th>Elongation in % L0 = 100 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>R310</td>
<td>270 - 450</td>
<td>150 – 300</td>
<td>&gt; 10</td>
</tr>
<tr>
<td>R560</td>
<td>≥ 560</td>
<td>&gt; 450</td>
<td>&lt; 3</td>
</tr>
</tbody>
</table>

The values in the table are valid only for foils with thickness > 0,1 mm.

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