

# CIC 12,5

Designation	CIC 12,5 / 75 / 12,5
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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 75 % of the volume of the composite. The cover layer material is copper and represents 12,5 % of the volume per side. CIC shows a low thermal expansion factor together with good thermal conductivity.

## COMPOSITION OF MATERIAL

- Core material : FeNi36  
Volume: 72,5- 77,5 %
- Cladding: Cu-PHC  
Volume: 11,25 – 13,75 %

## PHYSICAL PROPERTIES

• Density	8,33 g/cm <sup>3</sup>
• Electrical conductivity	14,5 m/Ω mm <sup>2</sup> (at 20 °C R380)
• Electrical resistivity	0,069 Ω mm <sup>2</sup> /m (at 20 °C R380)
• Thermal conductivity	X,Y Plane: 110 W/K m (at 20 °C); Z Plane: 19 W/K m (at 20 °C)
• Coefficient of thermal expansion (linear)	2,4 – 5,6·10 <sup>-6</sup> /K (at - 55 to + 125 °C)
• Modulus of elasticity (tensile)	140 GPa (at 20 °C R380)

MANUFACTURING PROGRAM	THICKNESS	WIDTH
Rolls, spools, sheets	0,02 - 0,15 mm	1 - 610 mm

*not all combinations of thickness and width are available  
 or different dimensions please contact our technical service*

## TYPICAL TEMPER VALUES (information only)

	Tensile strength R <sub>m</sub> in MPa	Yield strength R <sub>p0,2</sub> in MPa	Elongation in % L <sub>0</sub> = 100 mm
R380	350 - 500	210-370	> 10
R560	≥ 560	> 450	< 3

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

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