

NICARB – Thermocouple Protection Tubes

Material:	Nitrite bonded Silicon Carbide (without steel inner tube)
Applications:	Non-ferrous metals such as aluminium, brass, copper and copper alloys
Max. Temperature:	up to 1500°C
Connection:	with flange, groove or plane at the open end
Types:	CERN-(+length in centimetres) for thermocouple protection tubes CERN-HT-(+length in centimetres)-COE for immersion heater tubes CERN-HT(+length in centimetres)-OBE for radiant heater tubes open both ends
Applications:	thermocouple protection tubes

Made by high-pressure isostatic compaction techniques and subsequent high temperature nitridation, NICARB, silicon nitride bonded silicon carbide thermocouple protection tubes are of premium quality. Their life span potential in many applications, where mechanical damage is minimal, makes them very economical. Where good practices prevail, these long life protection tubes are the most economical.

The major benefits are:

- Large size range available
- Long service lives
- No preheat necessary
- Excellent erosion resistance
- Good response times to temperature variations

THERMAL, MECHANICAL AND PHYSICAL PROPERTIES:

Properties	Unit	Value
Silicon carbide content	78 – 81	%
Si ₃ N ₄	19 – 22	%
Maximum temperature	1500	° C
Open porosity	18 – 22	Vol.-%
Raw density	2,58	kg/dm ³
Compressive strength (at 20° C)	85 – 100	N/mm ²
Bending strength (at 1400° C)	20 – 30	N/mm ²
Fire resistance	>38	SK
Thermal conductivity (at 1100° C)	8	W/mK
Thermal extension coefficient (20 - 1100° C)	4,5	K ⁻¹ x 10 ⁻⁶
Average specific heat (20 – 1100° C)	1050	J/kgK
Temperature exchange resistance		excellent

The given values are only valid for the tested samples and therefore only to be used as indication values.