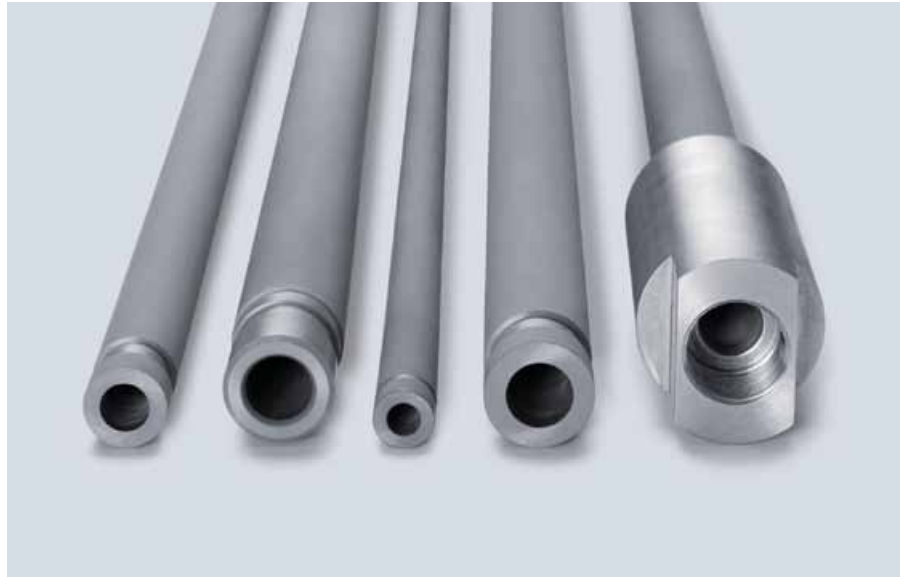




EKatherm[®] SILICON NITRIDE THERMOCOUPLE SHEATHS

For non-ferrous casting
applications

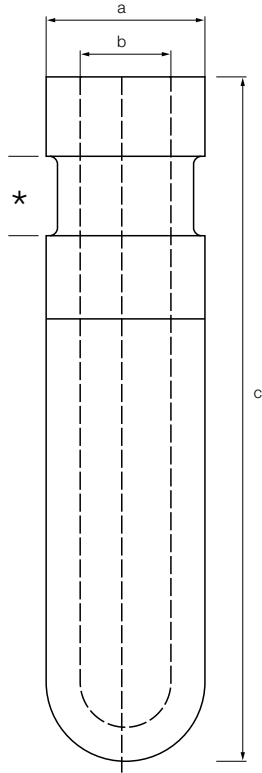


EKatherm[®] thermocouple sheaths in different designs

The most efficient material used for temperature measurement and control of many non-ferrous alloys.

Advantages

- Long life typically > 12 months
- Excellent temperature response - melt temperature can be determined after approx. 1 min.
- Unaffected by corrosion throughout its lifetime
- No melt contamination
- Can be used in melts containing sodium and strontium
- High temperature resistance (up to approx. 1100°C)
- High thermal shock resistance
- No preheating required
- Resists build up of dross
- Reduced maintenance requirements and ease of maintenance
- Electrically insulating
- Affordable



* supplied with or without groove

Standard sizes

Outside dia (mm) a	Inside dia (mm) b	Length (mm-up to) c
16	8	550
with circumferential hemispherical groove		
22	12	900
28	16	1,200
with circumferential flat bottomed or hemispherical groove		

Other sizes available on request.

Properties

Material Properties		
Density	g/cm ³ % TD	3,24 > 99
Porosity total	vol %	< 0.5
Porosity open	vol %	0
Young's modulus	GPa	310
Flexural strength, 4-pt bending	MPa	700
Fracture toughness	MPa·m ^{0.5}	7
Compressive strength	MPa	> 2,500
Vickers-hardness	HV10 MPa	1,450
Thermal conductivity	W/mK	22
Coefficient of thermal expansion	20 - 1,000°C 10 ⁻⁶ /K	3.0
Thermal stress parameters at 20 °C		
$R_1 = \sigma_B(1-\nu)/(\alpha \cdot E)$	[K]	605
$R_2 = R_1 \cdot \lambda$	[W/mm]	13

The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the products for a particular purpose.

The management system has been certified according to DIN EN ISO 9001, DIN EN ISO 14001. EKatherm® is a registered trademark of ESK Ceramics GmbH Co. KG.

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