

# Kanthal® Thermocouple protection tubes

## **Kanthal® Super tubes – up to 1700°C (3100°F)**

These tubes are made of molybdenum disilicide ( $\text{MoSi}_2$ ), as our Kanthal Super heating elements. Kanthal Super protection tubes have the following advantages:



*Examples of applications for Kanthal Super tubes. Protection tubes for thermocouples (left). Bubbler tubes for glass melting (right).*

### **SPECIAL FEATURES**

- High strength at high temperatures
- Good shape stability
- Excellent corrosion resistance
- Thermo shock resistance

- The highest operating temperature is 1700°C (3100°F).
- Porosity and brittleness are lower than for conventional ceramic protection tubes. The tubes are thus particularly suitable for operating at high temperatures and in corrosive furnace atmospheres.
- Metallic protection tubes can under circumstances be influenced by electromagnetic oscillations which may disturb the function of the thermocouple. Kanthal Super protection tubes suppress such oscillations.



## Technical information

### Dimensions of Kanthal® Super tubes

Outer diameter		Wall thickness		Max length	
mm	in	mm	in	mm	in
12.0	0.47	4.5	0.18	2000	78.74
22.0	0.87	4.5	0.18	2000	78.74
25.0	0.98	5.0	0.20	2000	78.74

#### Sandvik Group

The Sandvik Group is a global high technology enterprise with 47,000 employees in 130 countries. Sandvik's operations are concentrated on three core businesses: Sandvik Tooling, Sandvik Mining and Construction and Sandvik Materials Technology – areas in which the group holds leading global positions in selected niches.

#### Sandvik Materials Technology

Sandvik Materials Technology is a world-leading manufacturer of high value-added products in advanced stainless steels and special alloys, and of medical implants, steel belt-based systems and industrial heating solutions.

Kanthal is a Sandvik owned brand, under which world class heating technology products and solutions are offered. Sandvik and Kanthal are trademarks owned by Sandvik Intellectual Property AB.

#### Quality management

Sandvik Materials Technology has quality management systems approved by internationally recognized organizations. We hold, for example, the ASME Quality Systems Certificate as a materials organization, approval to ISO 9001, ISO/TS 16949, ISO 17025, and PED 97/23/EC, as well as product approvals from TÜV, JIS and Lloyd's Register.

#### Environment, health and safety

Environmental awareness, health and safety are integral parts of our business and are at the forefront of all activities within our operation. We hold ISO 14001 and OHSAS 18001 approvals.

Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice.

This printed matter is only valid for Sandvik material. Other material, covering the same international specifications, does not necessarily comply with the mechanical and corrosion properties presented in this printed matter.

