

**KANTHAL®**

Part of Sandvik Group

# ADVANCED STRUCTURE SILICON CARBIDE HEATING ELEMENTS

GLOBAR® AS



# GLOBALAR® AS ELEMENTS STRENGTH, RELIABILITY AND PERFORMANCE

**Kanthal is the heating technology brand within Sandvik; the world's leading manufacturer of silicon carbide (SiC) heating elements. Our advanced structure silicon carbide heating element, Globalar® AS, is a high performer in the Globalar® elements range.**

Globalar® AS element material offers optimized particle size distribution, uniform pore distribution, and a consistency of structure unmatched by comparable products in the market today.

The material offers higher mechanical strength, greater consistency and repeatability of performance, and greater resistance to chemical attack, opening up new areas of application, and improving the performance in existing furnaces and equipment.

Globalar® AS elements are designed to be interchangeable with the majority of standard products in the market, so upgrading performance of equipment is as easy as replacing the existing heating elements with Globalar® AS. No changes to the equipment or power supply will be required.

## KEY APPLICATIONS

### PRIMARY ALUMINUM INDUSTRY

- Tilting holding furnaces

### FLAT GLASS INDUSTRY

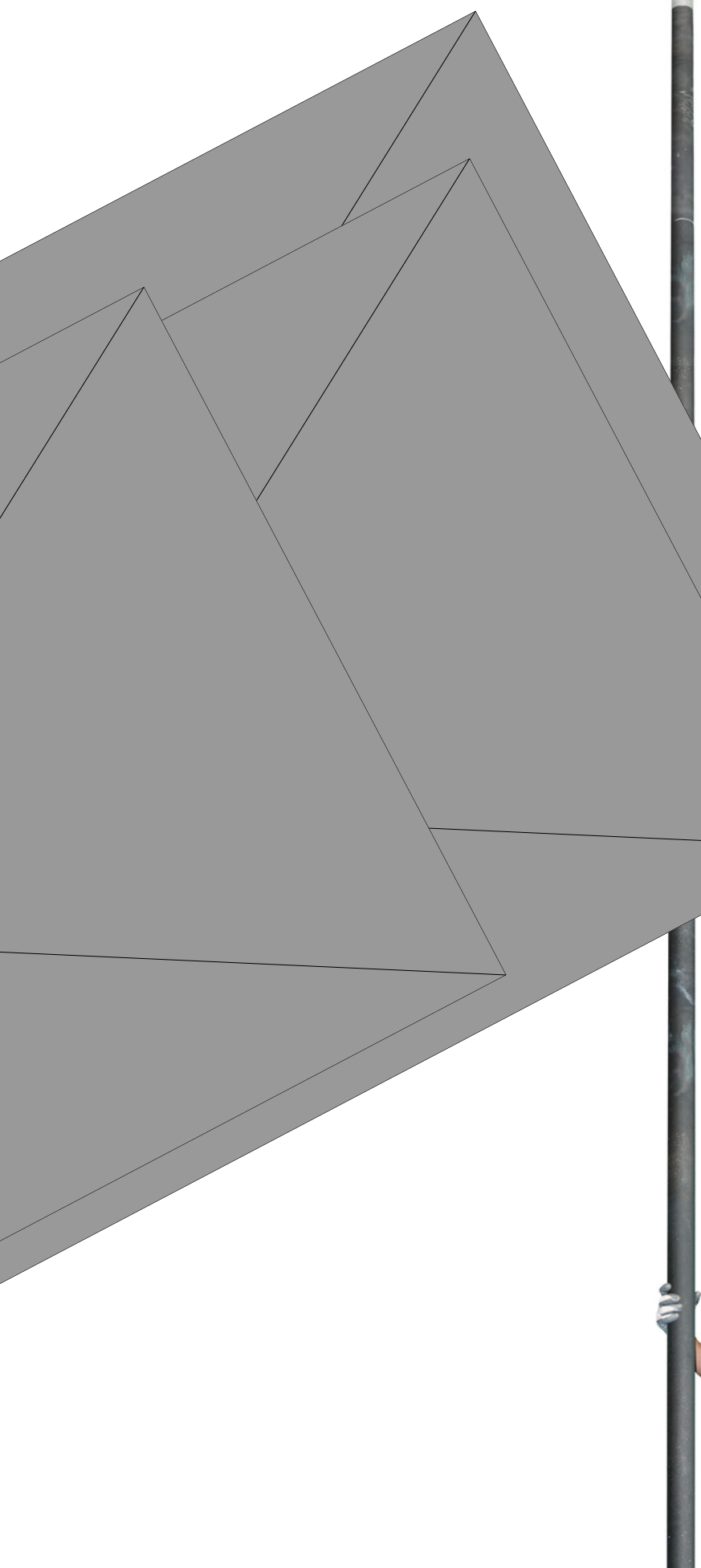
- Horizontal float elements

### CERAMICS AND ELECTRONICS INDUSTRY

- Wide tunnel furnaces
- Ferrite production

### STEEL INDUSTRY

- Continuous annealing lines
- Continuous galvanizing lines



#### **LONG SPAN ELEMENTS**

- Low thermal mass
- Quicker responding furnace
- Improved furnace efficiency

#### **ONE-PIECE HOT ZONE**

- Span wider furnaces
- Increased productivity
- Up to 3500 mm (137.8 in) one-piece hot zone
- Above 3500 mm (137.8 in) available on request

#### **SIMPLE INSTALLATION**

- No supports required
- Easy replacement

#### **LIGHT WEIGHT PER KW**

- Simplified furnace design

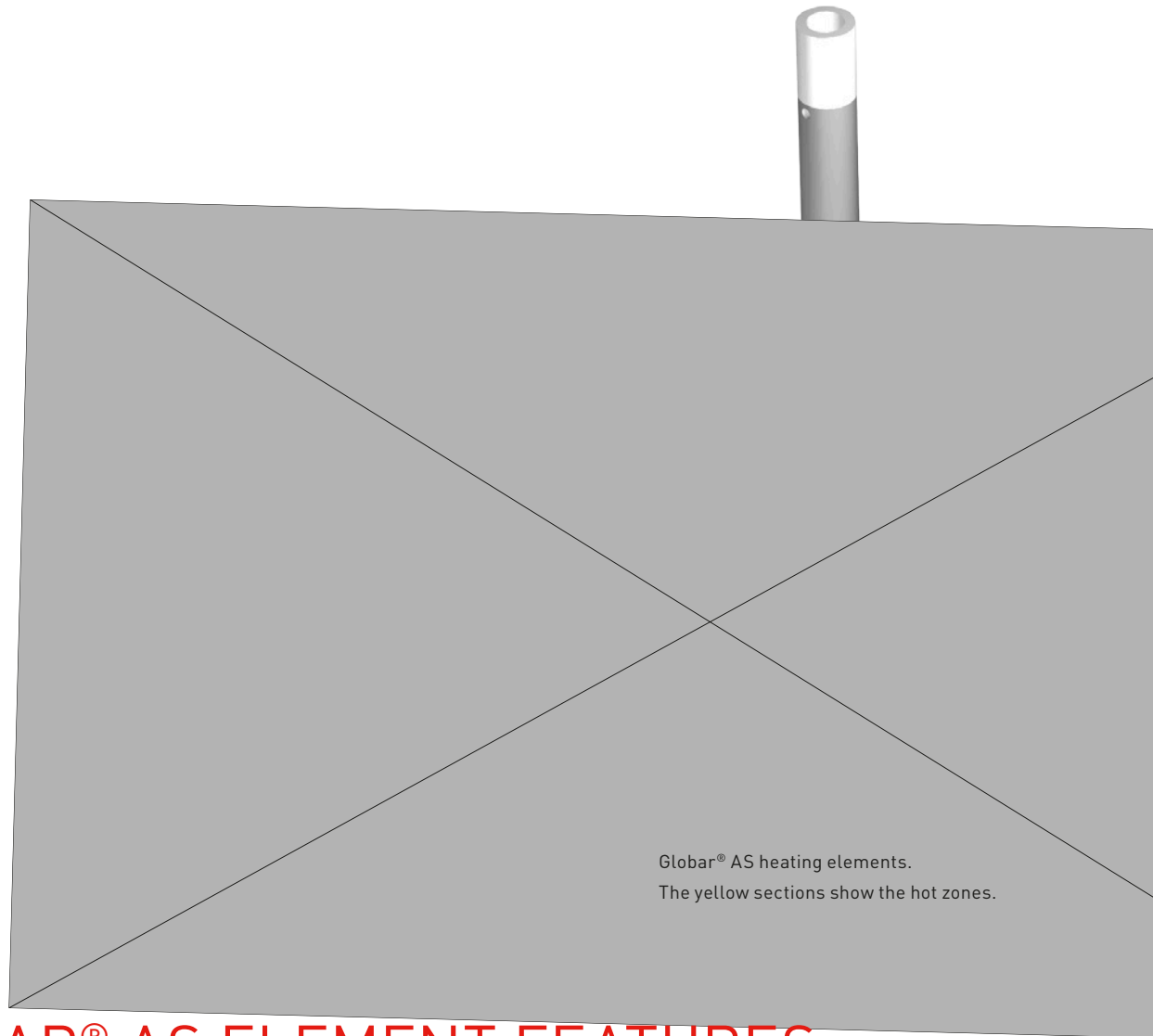
#### **RESISTANT TO MECHANICAL SHOCK**

- Advanced structure
- Tough and reliable performance

#### **CYCLIC OPERATION**

- Reduced downtime
- Reduced maintenance costs
- Increased productivity
- Improved OEE





Globalbar® AS heating elements.  
The yellow sections show the hot zones.

## GLOBALBAR® AS ELEMENT FEATURES

### DESIGNED FOR HIGHER MECHANICAL STRENGTH

Globalbar® AS is stronger than any competitive element on the market. This allows for longer, lighter and more efficient elements to be manufactured – extending the range of applications into which Globalbar® elements can be applied.

A key feature of Globalbar® AS is the consistency of the material properties. According to Weibull's modulus (a measure of the repeatability of mechanical properties in brittle materials), Globalbar® AS elements have been measured as 14, while most silicon carbide heating elements typically are measured as <10.

### DESIGNED FOR CYCLIC USE

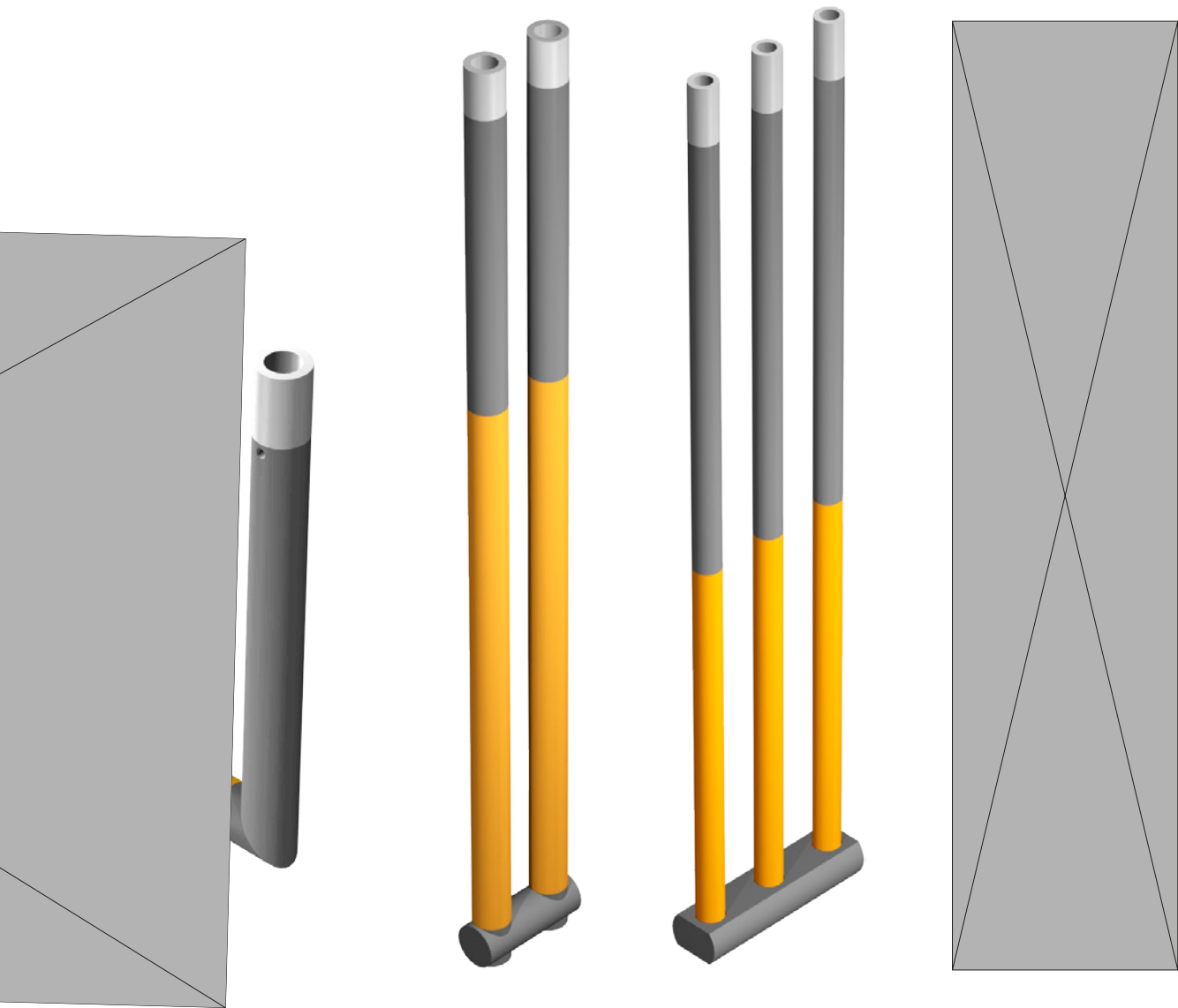
Most silicon carbide elements are designed to deliver optimum performance when used continuously. Cyclic operation is known to reduce element life. Globalbar® AS is designed to minimize the effects from cyclic use.

When tested aggressively at 1425°C (2600°F), Globalbar® AS elements returned over 40% more cycles than the best performing competitor.

### DESIGNED TO RESIST CHEMICAL ATTACK

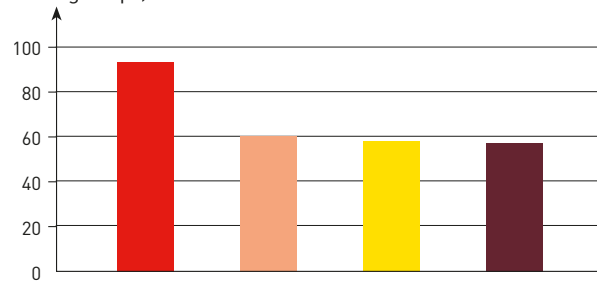
Globalbar® AS is exceptionally resistant to aggressive furnace conditions. The pore structure of a Globalbar® AS element is more closed than the structure of many alternative products, limiting the penetration of surface contaminants and condensates into the material. This is especially important when the element is exposed to alkali glass deposits and drips. In applications with heavy glass deposits, the switch to Globalbar® AS elements has prolonged the life of the heating element by a factor of 10.

Glazed elements are available for additional protection.



### IMPROVED STRENGTH

Strength 3pt, MPa

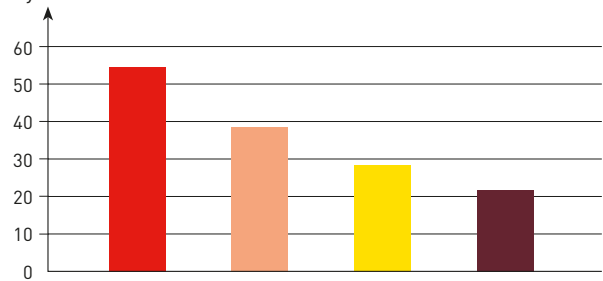


■ Globar® AS  
■ Manufacturer A ■ Manufacturer B ■ Manufacturer C

3pt bending strength comparison.

### IMPROVED ELEMENT LIFE IN CYCLIC OPERATION

Cycles



■ Globar® AS  
■ Manufacturer A ■ Manufacturer B ■ Manufacturer C

Cyclic test: Globar® AS vs. other manufacturers' elements.  
100 hour cycles at 1425°C (2600°F).

# GLOBALAR<sup>®</sup> AS AVAILABILITY

Globalar<sup>®</sup> AS elements are available to order in both single rod and multi-leg forms, in a range of sizes that are interchangeable with all standard Kanthal elements, and products from other manufacturers.

## ORDERING

The minimum information required when ordering Globalar<sup>®</sup> AS elements is as follows:

### ROD TYPE ELEMENTS

Element type (Globalar<sup>®</sup> AS)  
Diameter, mm  
Hot zone length, mm  
Overall length, mm  
Nominal resistance,  $\Omega$

## TOTAL SERVICE

Kanthal continues to provide total service – a complete service that makes your life easier. We not only supply a product, we offer our competence, advice and assistance and an after-sales service program second to none.

### MULTI-LEG ELEMENTS

Element type (Globalar<sup>®</sup> AS-B/U/CU/W/M)  
Diameter, mm  
Hot zone length, mm  
Cold end length, mm  
Leg center distance, mm  
Support slot position  
Nominal resistances,  $\Omega$

