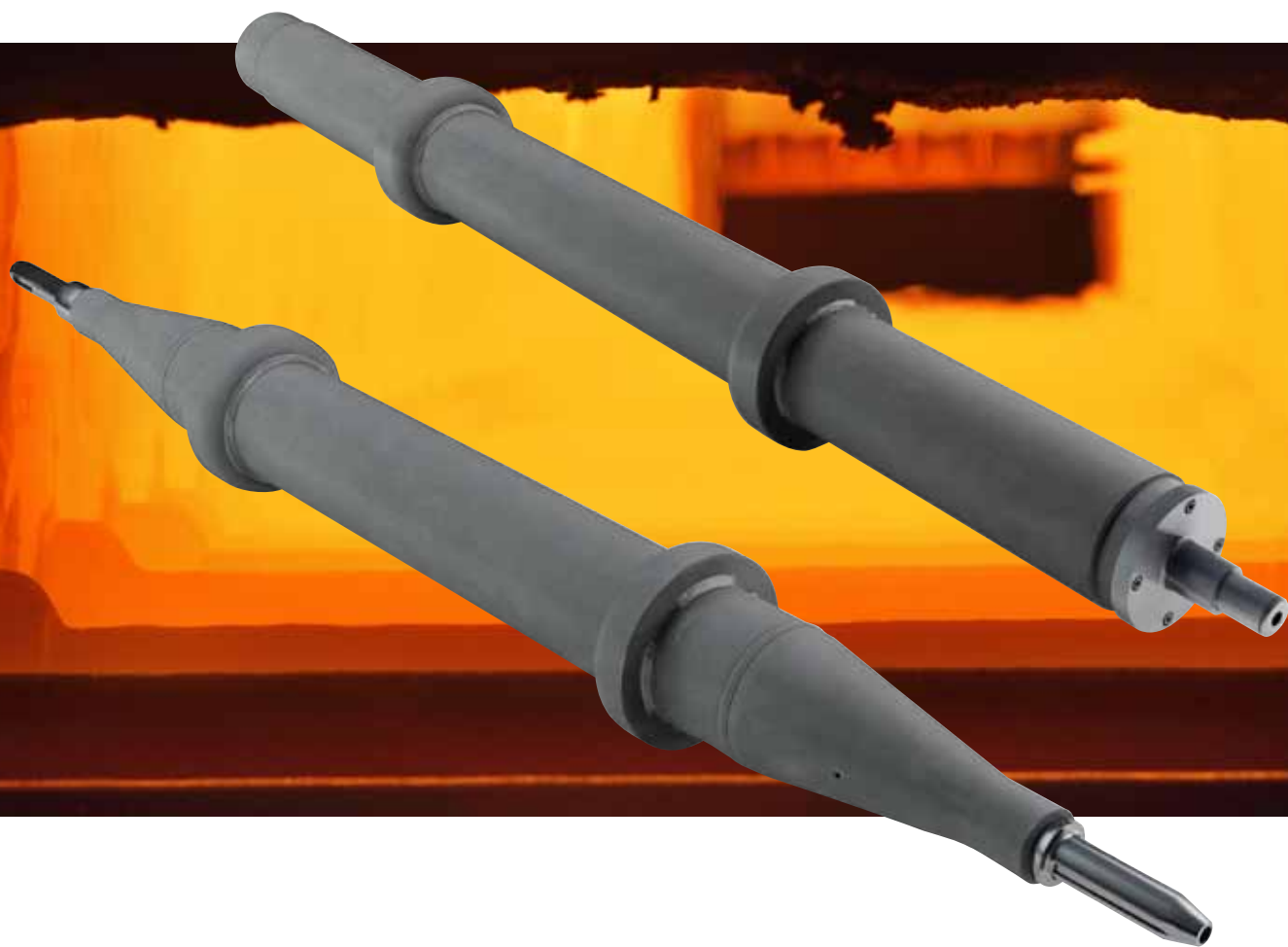


**Furnace rollers
Boost your performance
with Kanthal APMT™**



KANTHAL

Choose furnace rollers that last. And last.

KEY BENEFITS:

- Higher productivity
- Cleaner operation
- Higher process temperature capability
- Improved surface quality of produced tube
- Longer service life
- Maintenance-free operation
- Fewer inspections required

If you had an opportunity to sharply reduce or eliminate the stoppages caused by your furnace rollers, run your furnaces at higher temperatures and use less water (and, in some cases, no water) for cooling purposes – all in a cleaner working environment that uses less energy – would you take it?

No doubt you would. Used to transport, for example, stainless tubes that are annealed in roller hearth furnaces, furnace rollers made from Kanthal APMT™, a FeCrAl (iron-chromium-aluminum) alloy will turn this opportunity into reality. Kanthal APMT is noted for its unique combination of high creep strength and excellent resistance to oxidation at high temperatures, critical for high-performance furnace rollers.

Get four times the performance

Furnace rollers made from Kanthal APMT are demonstrating that they can significantly outperform traditional NiCr (nickel-chromium) alloy rollers. In fact, customers are reporting that rollers made from Kanthal APMT are outlasting competing products by four times.

The reason? Excessive oxidation on traditional rollers in standard high temperature furnaces with open-flame burners limit their lifespan to sometimes only six to twelve months of operation before reconditioning is required. This also involves frequent maintenance stoppages and stocking of large numbers of spare rollers.

Furthermore, traditional rollers that run through the furnace can compromise the quality of the tubes they transport. The rough and uneven surface formed on conventional NiCr furnace rollers can cause surface defects and compromise the surface quality of produced tubes. This, of course, is a critical factor in the production of tubes, giving a poorer yield and adding extra production costs. Kanthal APMT, together with a new roller design, offers a superior surface that actually improves the quality of the manufactured tube products!

Get more productivity with hotter furnaces

Equally important, furnace rollers made from Kanthal APMT can withstand higher temperatures of up to 1250°C (2280°F). And despite the higher temperature capabilities, these rollers require less (if any) water for cooling purposes, reducing energy requirements and making the furnace designed with Kanthal APMT furnace rollers a greener approach to tube manufacturing.



Stark comparison

Pictured (above) are NiCr (nickel-chromium) standard rollers after one year of service (top) and rollers made from Kanthal APMT after four years of service.



Furnace rollers made from Kanthal APMT™ are setting new performance standards in the tube manufacturing industry. Used to transport stainless steel tubes annealed in roller hearth furnaces, the new furnace rollers made from Kanthal APMT can operate at higher temperatures and last up to four times longer than conventional furnace rollers. They also require less water cooling (and, in some applications, no water cooling at all), making it a greener option.

Potential savings of two million euro per week.

Let's say your furnace is producing 200 tons of stainless steel tubes per week. In the simplest terms, this means you are producing the equivalent of about two million euro per week, if we conservatively estimate a value of about 10 euro per kilo for stainless tubes.

In the event three or four of your rollers crack, bend or cause surface problems, you may need to shut down your furnace, potentially costing your operation up to two million euro a week.

Furnace rollers made from Kanthal APMT are specifically designed to remain straight and rigid at high operating temperatures, thus reducing the tendency to sag and bend – problems commonly associated with conventional metallic tube materials. They also experience less elongation of the roller compared to nickel-chromium rollers, as well as better capability to withstand the impact on bearings and welds etc.

Of course, no product can guarantee 100 percent uptime. However, due to its longer life and superior mechanical and oxidation properties, furnace rollers made from Kanthal APMT can greatly diminish the chances of maintenance downtime while also enabling you to run your furnaces at higher temperatures and boost productivity.

Some early successes

Development of furnace rollers based on Kanthal APMT was initiated in 2004, when engineers at Sandvik wanted to try a new approach to resolving production and maintenance problems on one of their production lines.

The results were as expected: furnace rollers made from Kanthal APMT had a service life of four years compared to one to two with conventional furnace rollers. Other benefits were a product with superior surface as well of those listed on page two.

But the drastic reduction of maintenance costs and the boosting of productivity were particularly noteworthy. Engineers reported that maintenance stoppages were halved in the furnaces where the products were installed. Also, the ability to operate furnace rollers in temperatures of up to 1250°C (2280°F), without diminishing its service life, meant a much higher number of quality tubes could be produced.

Different sizes and design

Kanthal APMT is a powder metallurgical dispersion strengthened alloy. Furnace rollers made from Kanthal APMT are offered over a wide range of sizes, from outer diameters of 26 to 350 mm (1 to 13.8 in). The rollers can be delivered both in the conventional roller design as well as in our improved design, based on seamless extruded tubes, depending on the application and furnace type.

Contact us

To get in contact with you local representative visit www.kanthal.com or show this QR-code to your smartphone.



**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, Kanthal and Kanthal APMT 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.



Sandvik Materials Technology
Sandvik Heating Technology AB, Box 502, 734 27 Hallstahammar, Sweden, Phone +46 220 210 00, Fax +46 220 211 66
www.kanthal.com, www.smt.sandvik.com