

## FURNACE ROLLERS KANTHAL® APM AND KANTHAL® APMT

### INSTRUCTIONS



#### **IMPORTANT!**

**Instructions for storage, installation, operation and maintenance of Kanthal® APM and Kanthal® APMT furnace rollers.**

**PLEASE READ THESE INSTRUCTIONS PRIOR TO UNCRATING AND INSTALLATION.**

#### **GENERAL INFORMATION**

Kanthal® APM and Kanthal® APMT furnace rollers are produced through a powder metallurgy process route that gives the material high mechanical strength at elevated temperature.

However, at room temperature the APM/APMT materials and especially the welds between roller and shafts and roller to flanges exhibit reduced toughness. In order to avoid damage, care must be taken during handling and installation of the rollers.

Kanthal® APM and Kanthal® APMT rollers are delivered in a pre-oxidized condition, i.e., the rollers have a very thin surface layer of aluminum oxide. It is important to keep this oxide layer intact and to keep it clean from contamination.

#### **STORAGE**

The rollers should preferably be stored in a tempered storage room at temperatures exceeding +5°C (41°F) and in the crates as delivered with the lids closed. They must never be stored in such way that the rollers are exposed to direct rain or moisture. If stored at temperatures below +5°C (41°F) (not recommended) the crate with the rollers should, prior to installation, be brought into the location of the furnace and be kept there for at least 24 hours prior to handling.

## INSTALLATION

Avoid any kind of sharp impact or mechanical shock during lifting, transportation and installation. The roller surface must be clean and contact with oil, grease or similar agents avoided.

During handling and installation use only clean lifting slings (polyester type) and clean gloves. When the roller is inserted through the furnace wall special care should be taken to avoid damage, such as scratches and contamination, to the roller surface oxide. Do not force the roller into position with sledge hammers or iron-bar levers.

If the roller surface gets contaminated it must be cleaned, which is best done with a cloth soaked in acetone, ethanol or chemically clean gasoline/petrol.

Before the rollers are brought into operation their alignment in the furnace, both to the horizontal plane as well as perpendicular to the furnace longitudinal direction, must be checked and adjusted.

Please check that the bearing house socket on the roller expansion side does not jam and that it slides easily on the roller shaft. The rollers must have the possibility to expand and contract during operation.

## OPERATION

Rollers must always be kept rotating at furnace temperatures above 400°C (752°F). In the event of furnace problems or production disruptions the furnace must immediately be discharged to unload the rollers.

## MAINTENANCE

If reconditioning of a Kanthal® APM or Kanthal® APMT roller surface by turning or grinding becomes necessary, such an operation must always be followed by cleaning the roller surface (as described above) and subsequent re-oxidation of the roller surface to re-create the aluminum oxide.

Re-oxidation should be done in a furnace under air atmospheric conditions at a temperature of 1050°C (1922°F) for 8 hours. Furnace atmospheric conditions should be providing an unlimited supply of air during the complete re-oxidation process. If additional information is needed or anything is unclear, contact your local representative who can be found at [www.kanthal.com](http://www.kanthal.com).

Welding of APM/APMT materials has to be performed with the right filler metal and by following special procedures for pre-heating and post weld heat treatment. It is recommended that all welding on Kanthal® APM or Kanthal® APMT rollers is done by Kanthal. Technical support and information on welding procedures, etc., can be provided by Kanthal. Please contact your local Kanthal sales representative.

### Disclaimer:

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 datasheet is only valid for Kanthal materials.