

KANTHAL HEATING CASSETTES

FOR HEATING OF AIR AND GAS UP TO 800 °C



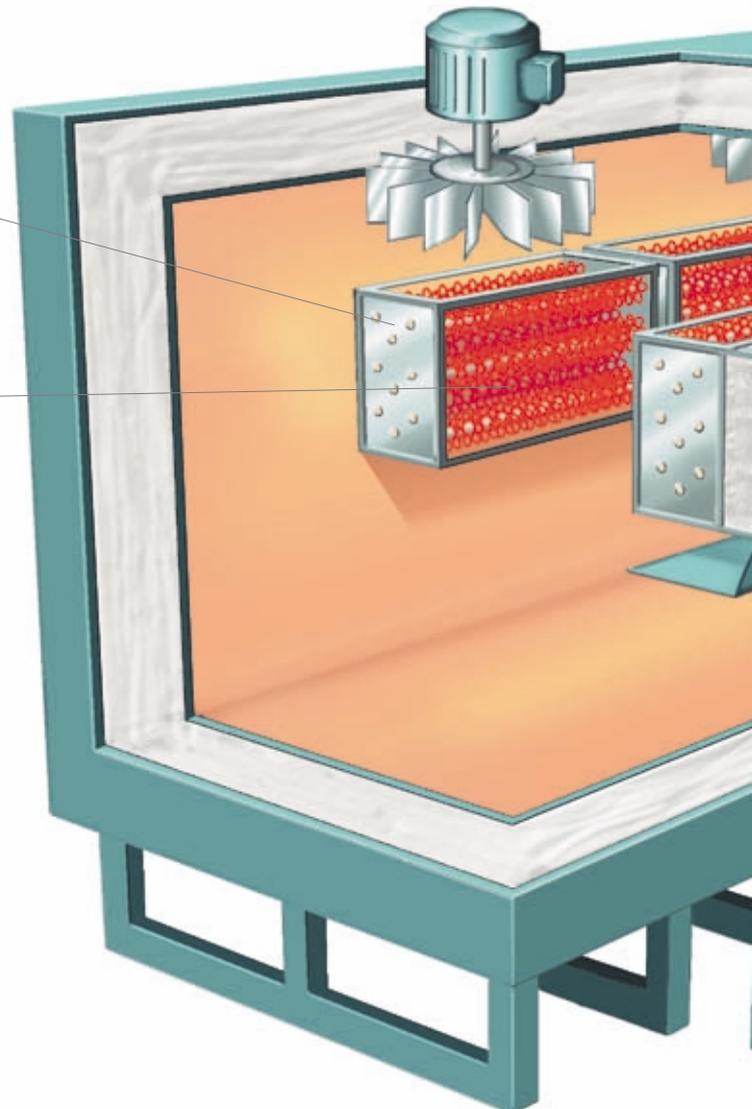
For industrial **heating** of air and gas **up to 800°C**

The common way to heat gases or air is to use tubular element which makes it possible to reach temperatures up to about 600 °C. With Kanthal Heating Cassette you can go up to 800 °C!

At temperatures below 800°C, the radiant heat from the heating elements is often insufficient to provide the circulation necessary to maintain a uniform temperature throughout the furnace. The furnace atmosphere must somehow be made to circulate, so that heat transfer by convection will take place. The Kanthal Heating Cassette is the solution of this problem.

The plug in cassettes can be located along the walls, in the roof or bottom.

Heating elements made of Kanthal AF heating wire wound into the form of a special spiral.



Excellent temperature equalization

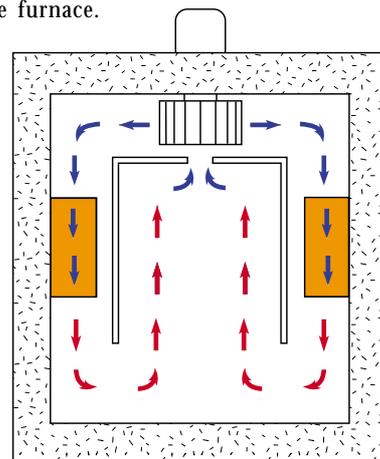
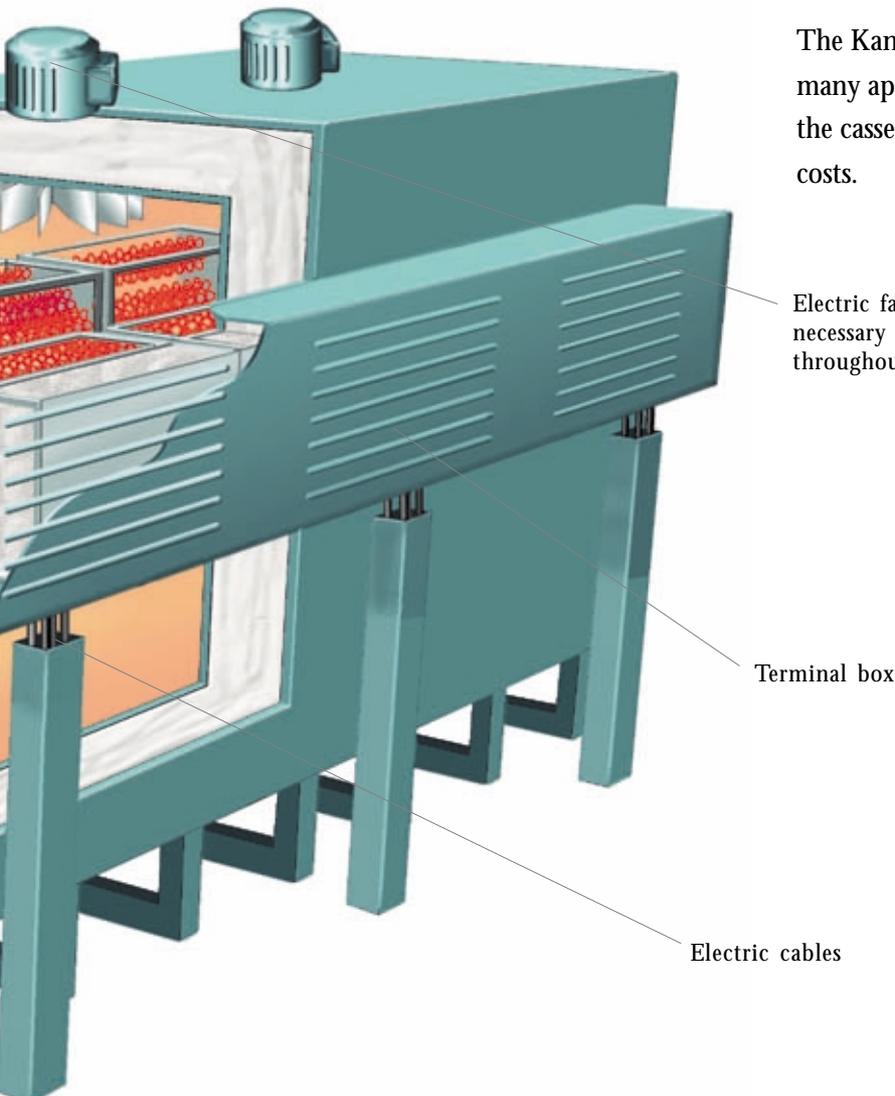
The air/gas is delivered by fans and is heated as it flows through the cartridges. With the system recirculating a high volume of air/gas several times through the heating unit you can achieve a very high degree of even temperature. There are examples where the temperature in the furnace chamber has been kept to within $\pm 1^\circ\text{C}$. As a result of this it is possible to treat extremely sensitive materials.

Quick heating and cooling

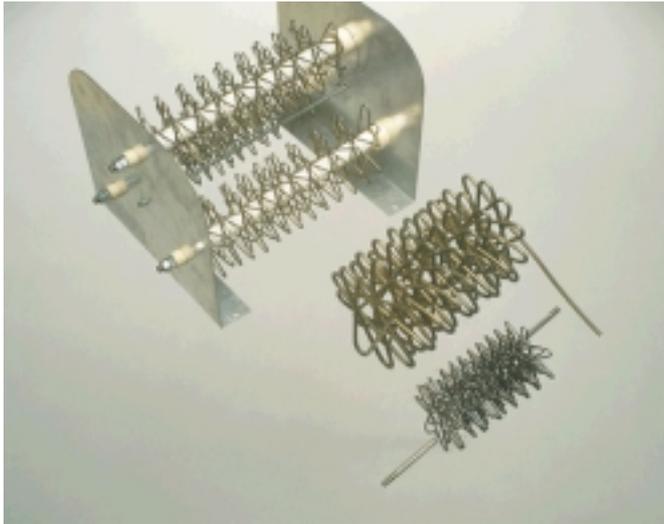
An important benefit is that the elements reach their working temperature virtually without delay and they also cool quickly. The elements can therefore be switched on for very short intervals, which provides major energy savings in certain applications, such as in shrinkfilm packaging.

Safe and reliable operation

The Kanthal Heating Cassette is a well-proven solution in many applications all over the world. Experience show that the cassettes are safe and reliable with low maintenance costs.



Unique heating elements with efficient heat transfer



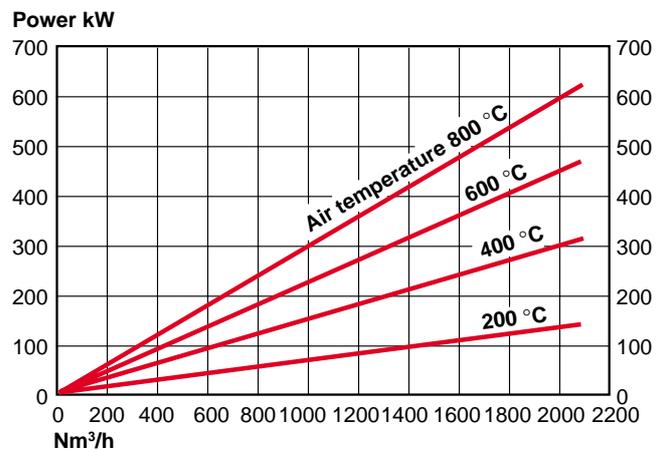
The heating elements are made in the form of a special spiral and mounted on ceramic tubes. By varying the wire diameter and/or the number of elements, cassettes of different ratings can easily be produced.

The unique element design permits higher thermal loads

The design of the heating element make it possible to pack considerable power into a small space. They are made of KANTHAL AF heating wire wound into the form of a special spiral and mounted on ceramic tubes which are then fitted into the cartridges.

The air is delivered by fans and is heated as it flows through the cartridges. Due to the compact design of the element, a very large proportion of its surface is in contact with the air. Heat transfer is efficient and the turbulence of the air around the element prevents overheating. As a result, these elements can withstand higher thermal loads than, for instance, tubular elements or conventional spiral elements on ceramic tubes. All of the elements in a cartridge are usually of the same length and diameter, but the rating can be varied by varying the wire diameter. Cartridges of different ratings can thus easily be produced by selecting the appropriate wire diameter or by varying the number of elements in the cartridge.

The diagram shows the needed power for different air/gas temperatures and flows when starting from room temperature.



Modular cassettes for any furnace application

Compact design

High power

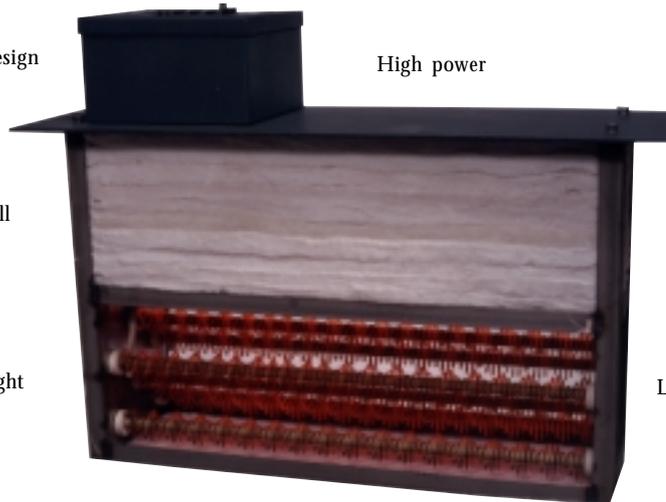
Easy to install

Modular standard system

Light weight

Long life heating elements

Plug-in units for existing or new furnaces/processes.



Designed to fit any furnace

There is a large freedom to design the Kanthal Heating Cassette for different applications. The lightness of the construction makes it in most cases possible to just fit it to the casing. There are examples of installations into tubes and the cartridge can be designed to fit in any existing furnace. In most cases the cassettes can be designed so it is possible to install them from outside the furnace. The plug in unit can be located along the walls, in the roof or bottom.

The pusher furnace at Hydro Aluminium Holmestrand, Norway. The 7-ton slabs are heated to 600 °C before rolling.





We can assist you

- in choosing suitable element material, element type, support systems and insulation
- with the design and calculation of the elements and heating system
- by supplying complete heating elements or heating systems ready for installation
- with the upgrading of old furnaces or the conversion of gas/oil heated furnaces to electricity

Simple installation and change

In all cases, the installation is very simple. The cassettes can be designed to fit in any furnace. All power connections are inside the terminal box. Just plug in the cassette, connect and switch on the furnace.

A change of cassette can in most cases be done from outside without cooling down the furnace and charge. If a unit should fail or if the rating is to be changed, the individual elements are very easy to replace. Existing furnaces can easily be converted to Kanthal Heating Cassette units without major modifications.



Just plug in, connect and switch on the furnace.



Kanthal Heating Cassettes are in operation in a great variety of furnaces and other processes for heating, drying, baking, roasting and sealing.

Exemples of applications

- heating of aluminium before rolling and prior to hardening
- heat treatment in the metallurgical industry
- drying of ore concentrates
- baking in large bakery ovens
- drying of materials in the wood processing industry
- roasting and drying in the food industry
- sealing and shrink-film packaging in the packing industry
- drying of various materials in the chemical industry
- drying and stoving of paints (stoving furnaces)

Ask for our reference list.

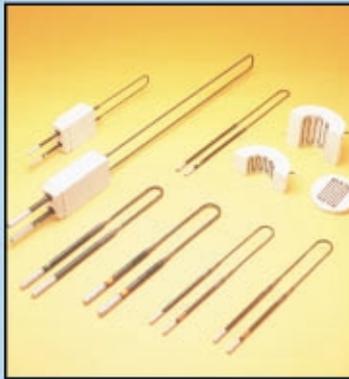
Systems and Services

Our broad range of resistance materials, finished elements, radiant tubes, construction material and other components cover almost any application up to 2000°C. You can get all your requirements from one supplier, as well as qualified technical advice.

We can also supply complete heating systems e.g. radiant tubes with integrated heating elements or inner tubes for gas heating, Fibrothal and Superthal heating units, Porcupine air heaters, Fibrothal complete systems for renovation of furnaces etc. A complete system saves time and resources.

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- with the design and calculation of the elements and heating system
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Kanthal Super, Superthal
Complete element assemblies and heating modules for max. element temperature 1850°C, 3360°F.



Wire and Strip
KANTHAL and NIKROTHAL highest quality material for max. element temp. 1425°C, 2590°F.



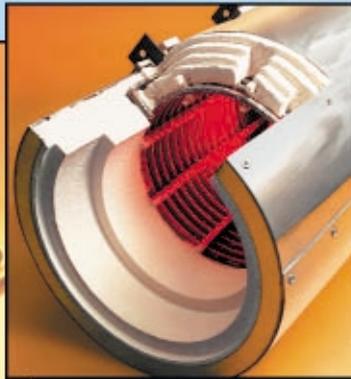
Metallic Elements
Ready-made metallic elements manufactured by Kanthal workshops.



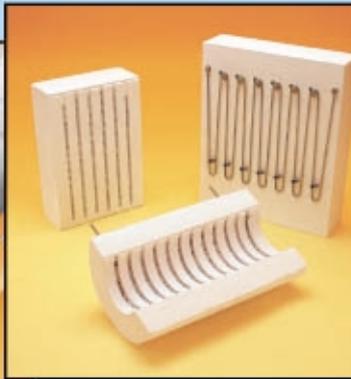
Tubothal
Long-life elements for all types of radiant tubes, ideally KANTHAL APM, up to 1300°C, 2370°F, furnace temperature.



Extruded Tubes
Kanthal extruded radiant tubes for gas or electrically heating furnaces.



Heating elements
Elements and systems for diffusion furnaces in the semiconductor industry.



FIBROTHAL
A complete modular building system for heating and insulation.



Silicon Carbide
Hot Rod, Crusilite, Globar, Silit and multileg silicon carbide heating elements for furnace temp between 700 and 1650°C, 1290 and 3000°F.

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