

**It's Super!**

# SuperStar



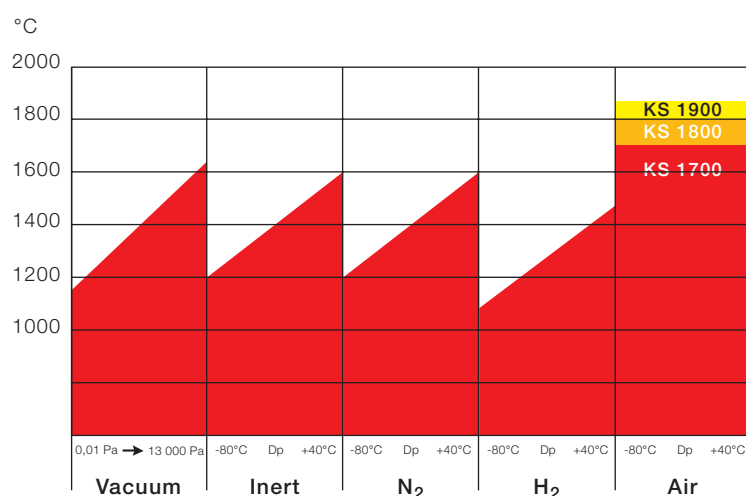
Say 'electric heating elements' and the response you'll get from almost any furnace specialist is 'Kanthal Super'. And no wonder. The brand has been a household name in this business for nearly 40 years.

It all began with the *Kanthal Super 1700*, which made it possible to use electric resistance elements at high furnace temperatures.

The later introduction of the *Kanthal Super 1800* extended these temperature limits another 100°C and added a further range of applications.

The next step was the outstanding *Kanthal Super 1900*: a true milestone for customers with extreme temperature demands. It's a heating element in a class by itself.

This trio of superstars constitutes a true success story. But even so, you've seen nothing yet!



These are the most common applications for the Kanthal Super 1700, 1800 and 1900 electric heating elements. No other company can match this diversity.

# SuperCharged



Many have tried to copy the Kanthal Super concept over the years. No one has succeeded. There is still only one make of electric heating element in this super class.

To reinforce the point, we are now introducing a number of pioneering innovations that put us even further ahead of the competition. Our enlarged Kanthal Super range offers furnace manufacturers and users many outstanding new features and advantages.

The reason for these innovations is simple: industrial heating processes are becoming ever more complex. This creates new problems that must be solved. New furnace atmospheres are being used. Furnace temperatures are often maintained at extremely high levels. Temperature cycles are becoming more sophisticated. Temperature accuracy and efficient operation are of key importance.

This new environment suits us perfectly. We're not just in the business of selling advanced heating elements. Our aim is to provide heating solutions that help our customers improve their productivity and profitability.



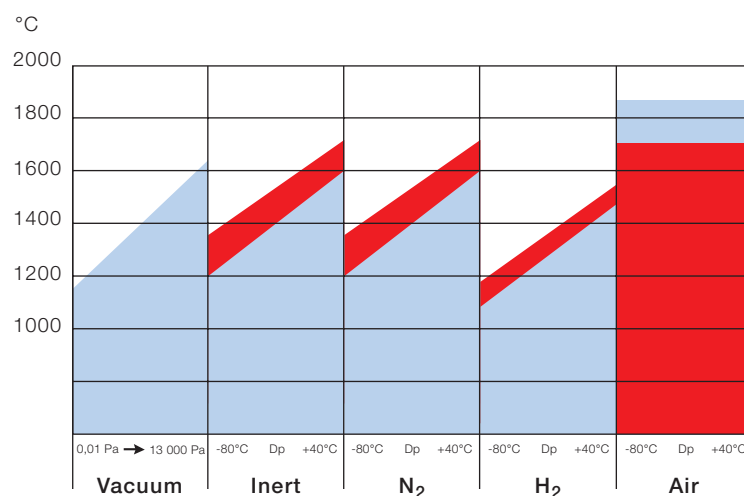
# SuperSafe

Reactive atmospheres attack electric heating elements. Especially at sustained high temperatures and at low dewpoints. Such conditions greatly reduce the life span of the element, sometimes by as much as half.

Now, thanks to the new *Kanthal Super RA* element, the rules are changing. The Kanthal Super RA has been specially developed for applications where the reactive environment adversely affects the life and efficiency of the heating element.

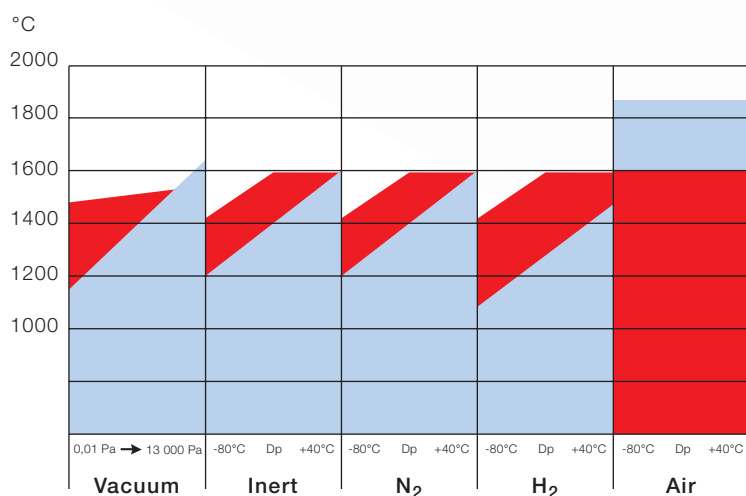
The new element offers substantially delayed temperature corrosion properties. This makes it twice as durable as a standard element. The Kanthal Super RA has a short start-up time, and it is economical to install since no protecting tubes are required. This all adds up to longer life, better heating efficiency and better operating economy.

In brief, this is the perfect solution for furnace users who want to play it safe. The Kanthal Super RA is a true problem solver, especially in giving new life to old furnaces.



The Kanthal Super RA can double the life of heating elements exposed to reactive atmospheres like nitrogen.

# SuperPower



The new Kanthal Super ER allows you to run your electric furnaces under extreme and changing conditions. It is a powerful tool for furnace owners who want to push the limits.

Any furnace operator would naturally welcome greater flexibility than a conventional furnace can offer. The dream, of course, is a furnace that can function in a wide range of different conditions. Ideally, this would be possible even during the same firing cycle.

The new *Kanthal Super ER* heating element is making this impossibility possible. It is designed to operate in furnaces with reducing atmospheres at very high temperatures, even when dewpoints go down to  $-60^{\circ}\text{C}$  or  $-80^{\circ}\text{C}$ . But it can equally well be used in oxidizing atmospheres.

This ability to change the use of a furnace from one type of firing operation to another is unique to the Kanthal Super ER. The element remains clean, metal emissions are extremely low, and it doesn't react with alumina supports, all of which makes for a very 'hygienic' furnace. The element also has an extremely low start current.

The Kanthal Super ER therefore presents new opportunities for any furnace operator who wants to improve performance economy.



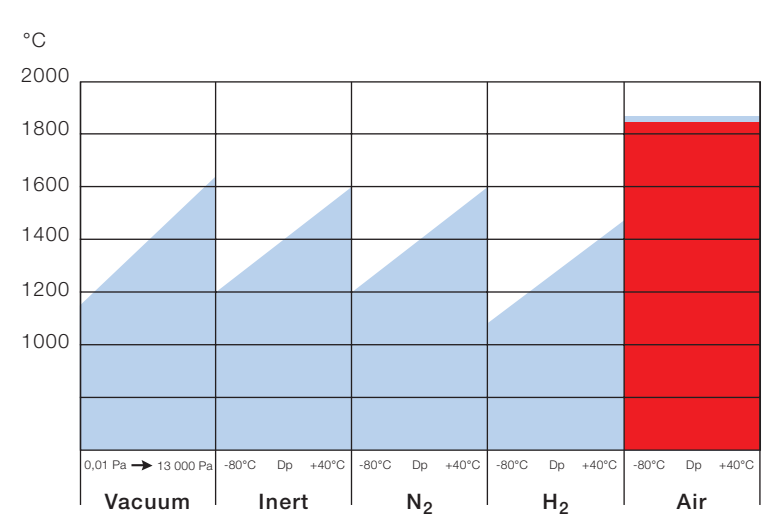
# SuperHot

Extremely high temperatures? And a cycling process? That's a challenging combination of factors even for the *Kanthal Super 1900*.

Nonetheless, rapidly changing temperatures are a common requirement, especially in smaller furnaces. And if your maximum temperature exceeds a certain level you will know that when the element is cooling, it can soon start to break up, thus reducing its life.

High temperatures and short temperature cycles require a new approach to selecting a heating element. Simply change to the Kanthal Super HT. This is a small-size element specially developed for a long life when you have a cycling process at temperatures right up to 1830 °C.

The hot news is that with the Kanthal Super HT in your furnace, you at least can stay cool.



The Kanthal Super HT makes 'impossible' conditions possible in laboratory furnaces and high-temperature sintering furnaces.



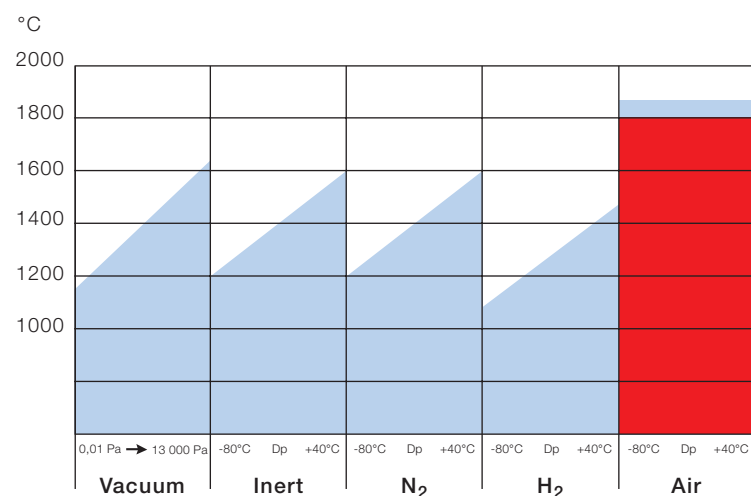
# SuperClean



Semiconductors. Electronics. Laboratories. R&D. Many production or experimental processes involving furnaces are highly sensitive to even the slightest contamination.

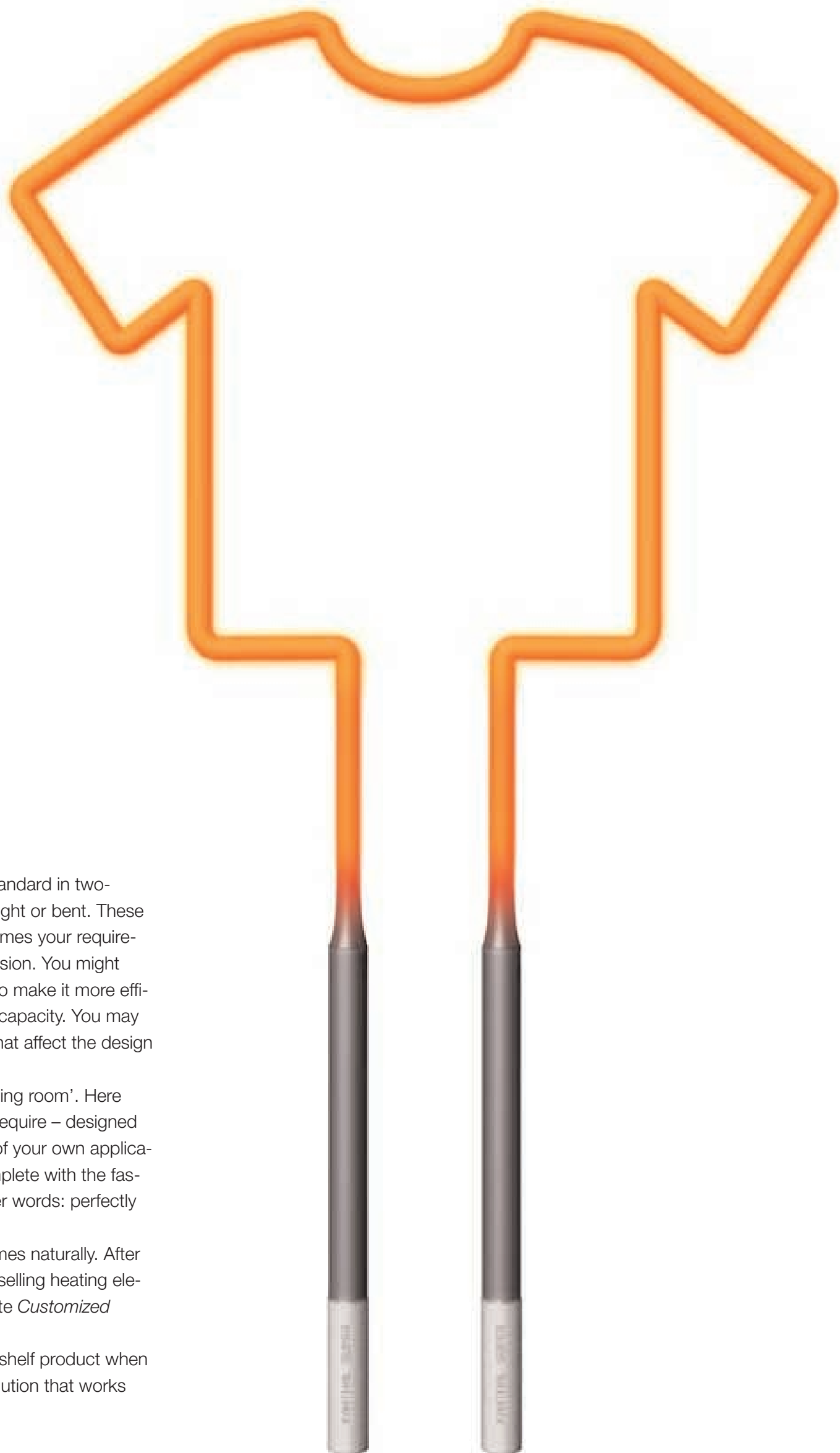
Conventional electric heating elements are known to spall or emit materials that can contaminate a process. We have a solution for such applications. It's a special element called the *Kanthal Super NC*, which has a clean and adherent glaze with a low risk of spalling.

Compared with a conventional element, the Kanthal Super NC reduces emission of Fe by a factor of three. Contamination caused by other metals is also reduced. Even more important, the element can be supplied with a certificate of analysis so that you know exactly what you are buying. You get a clean process – and can prove it.



Kanthal Super NC is used when heating performance without contamination is critical.

# SuperTailored



Kanthal Super elements come as standard in two-shank and four-shank versions, straight or bent. These cover most applications. But sometimes your requirements call for a specially tailored version. You might need to rebuild an existing furnace to make it more efficient. Or you may want to boost its capacity. You may have special requirements in mind that affect the design of the heating element.

No problem! Welcome to our 'fitting room'. Here you can get the exact element you require – designed to optimize the heating technology of your own application. And in any shape you like, complete with the fastening device of your choice. In other words: perfectly tailored to your specific needs.

To us at Kanthal, this service comes naturally. After all, we're not in the business of just selling heating elements. Our aim is to offer the ultimate *Customized Heating Solutions*.

Why choose a standard, off-the-shelf product when you can get a purpose-designed solution that works better and more economically?



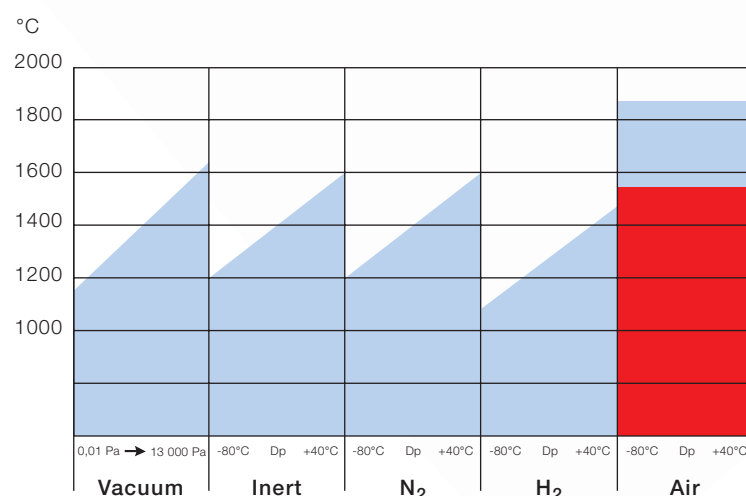
# SuperEconomy

The majority of all high-temperature heating elements installed worldwide are branded Kanthal Super. This is undoubtedly because customers have realized that there is just one original.

But there are applications for which many of our products are 'overqualified', and where a lower-cost solution would do. So we've done something about it.

The new *Kanthal Super LC* combines the best of both worlds. It's a Super element at a low, affordable price. Compared to the Kanthal Super 1700, its prime cost is substantially lower and it offers up to 30% savings on installation cost.

The secret? The Kanthal Super LC is based on a tube design. Despite some technical limitations with this type of design, it can be used effectively in a great many applications requiring air temperatures up to 1550°C. In these areas the Kanthal Super LC provides a powerful competitor to metallic resistance materials.



Here you can see the performance range of the Kanthal Super LC. It provides an economical solution at temperatures below 1550°C.

# SuperService



There is a lot more to a Kanthal Super heating element than meets the eye. It is backed by nearly 40 years of unsurpassed experience. But the most important item in Kanthal's offer to the market is our professionalism. Our ability to solve problems.

Many of our customers throughout the world are taking advantage of this expertise. They come to us with a problem and we help them to find the best possible solution.

How about you? Can we help you to find a better way? Our specialists are always close at hand. If you have a tricky heating problem, come to us. Our technicians and designers will take a close look at your problem. We will tailor an appropriate solution in our computerized design department. Then we'll simulate how it will work in practice, followed by a test run in our laboratories.

In the end you will get a proven solution that will increase both your efficiency and your productivity. That's what our service is all about.



# SuperSmart

You can, of course, just come to us to buy a standard element. You'll get a product that is second-to-none and backed by the undisputed world leader in the business.

But having chosen the right supplier, why not go a step further. Think of us as your heating partner. Someone you can consult on all issues connected with heating applications. Contact us for a discussion about anything from minor details to major problems. We are close at hand. And you can always rely on us for a professional assessment and sound advice.

Following this interaction we may well recommend that you buy a standard element. But it could just as easily trigger a whole new, more creative solution. The best ideas often result from a close collaboration with our customers.

So, the next time you have a heating problem, get in touch. It might just lead to something truly amazing.

# SuperClass!

As you know by now, Kanthal Super is in a class of its own. We can offer solutions to almost any heating challenge.

High temperatures. Reactive atmospheres. Reducing atmospheres. Low dewpoints. Clean processes. Complex designs. Lower installation costs. You name it. Kanthal Super is the brand that will help you to maximize your furnace performance.

Interested in a discussion? Or would you like to receive additional technical information? Super!

Just call your Kanthal office. You'll find our contact numbers here below. You can also visit [www.kanthal.com](http://www.kanthal.com) to find our addresses.

We look forward to hearing from you.

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