







# Kerfa GmbH

## Presentation

Hagen, 24. February 2014








	Page
Table of content	2
Overview products	3
Service	4
Advantages	5
Background	7
Product range	8
Refurbishment	12
Kerfa® specialities	14
Contact data	19
More information	20

## Kerfa® product range







-  Kerfa® SAVAC® electrical heating systems
-  Vacuum formed Kerfa® SAVAC® insulating systems for gas fired furnaces
-  Ready to install Kerfa® SHS (Special-Heating Systems)
-  Spare parts









## Kerfa® Serviceleistungen

-  Complete customer-specific production
-  Spare parts of all kind
-  Feasibility studies
-  Technical consultation during furnace engineering
-  Complete furnace linings
-  Modernization and relining of existing installations
-  Worldwide installation

## Advantages in **sourcing** being supplied by Kerfa®

-  Cost optimized delivery from producer
-  Support on site by Kerfa® specialists
-  Production at Hagen, Germany
-  Complete customer-specific production with high flexibility
-  Short delivery times by process optimized production
-  Complete service range for industrial furnaces

Customer benefits for **running cost** using Kerfa® products :

-  Energy savings by quicker heating<sup>1</sup>
-  Energy savings by quicker cooling<sup>1</sup>
-  Energy savings by fewer heat loss at furnace wall
-  Higher plant availability by faster temperature change<sup>1</sup>
-  Higher process stability<sup>1</sup>
-  <sup>1</sup> by lower heat storage

## Kerfa GmbH

Headquarter:

Germany, 58135 Hagen,

An der Kohlenbahn 30

Founded: 1980

Activities: Worldwide


Structure: Private owned

Products: Own production in Germany





Insulating half shell

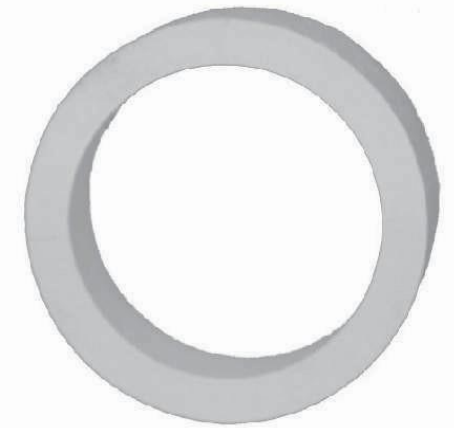
 Vacuum-formed Kerfa®  
SAVAC® **insulating systems**  
for gas-fired furnaces

 Vacuum-formed Kerfa®  
SAVAC® **insulating systems**  
for electrically heated furnaces

 Custom solutions

 Extensive accessories





 Spare parts



Insulation tube



Insulation end disc

-  Kerfa®-specific construction for increased **stability** and **durability**, even under vacuum.
-  **Minimal shrinkage** and high thermal **shock resistance**.
-  Dimensionally **stable** at high temperatures.
-  **Easy replacement** of vacuum-formed parts.



Insulation plate





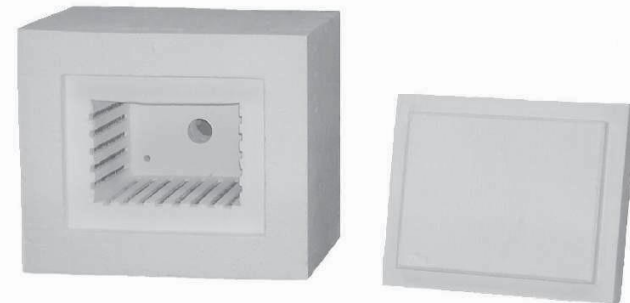
Heating tube  
(embedded heating wires)

 Electric Kerfa® SAVAC®  
**heating systems**, embedded

 Custom solutions

 Extensive accessories


 Spare parts



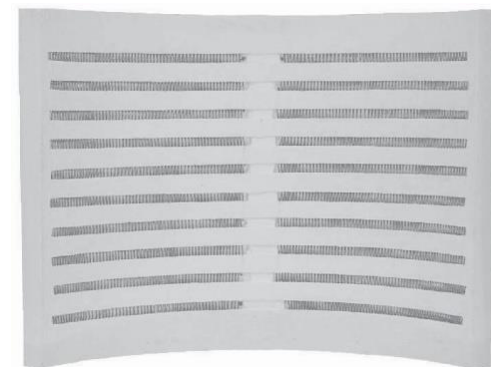
Heating muffles  
(embedded heating coil)



Individual custom solutions

 Kerfa® electric resistive heating featuring  
high **power density**.

 High temperature precision.



Heating segment  
(embedded heating coil)



Meander heating segment  
(steel hooks)

 Electric Kerfa® SAVAC®  
**heating systems**, suspended

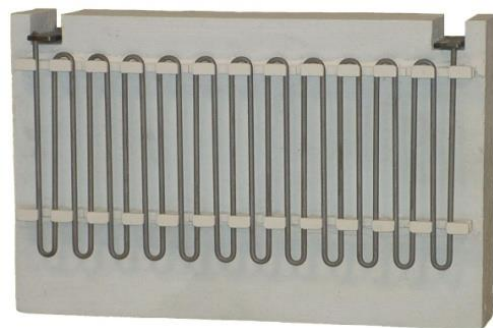
 Custom solutions

 Extensive accessories


 Spare parts



Meander heating segment  
(ceramic holder)



Meander heating segment  
(ceramic holder)

 Kerfa® electric resistive heating featuring  
high **power density**.

 High temperature precision.



Meander heating segment  
(steel hooks)



Kerfa® SHS -  
heating coil plug

🌀 Installation-ready Kerfa®  
SHS **special-heating-**  
**systems**

🌀 Custom solutions

🌀 Extensive accessories

🌀 Spare parts



Kerfa® SHS - cage  
element meander



Kerfa® SHS - heating coil  
on ceramic supporting  
tube

🌀 Kerfa® electric resistive heating featuring  
high **power density**.

🌀 High **temperature precision**.



Kerfa® SHS - meander  
heating element /  
heating coil

In existing furnaces a variety of different insulating materials are in usage as there are

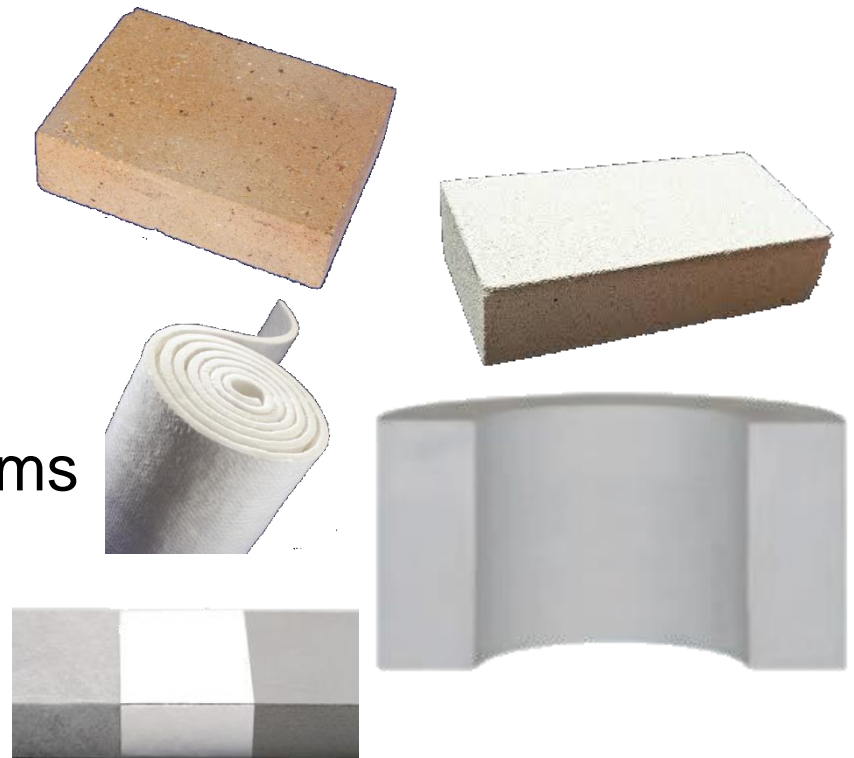
Chamotte

Insulating firebrick

Fibre blanket






Kerfa® SAVAC® insulating systems

Microporous board



Many of these insulating materials are having a low energy efficiency:

## Heat conductivity :

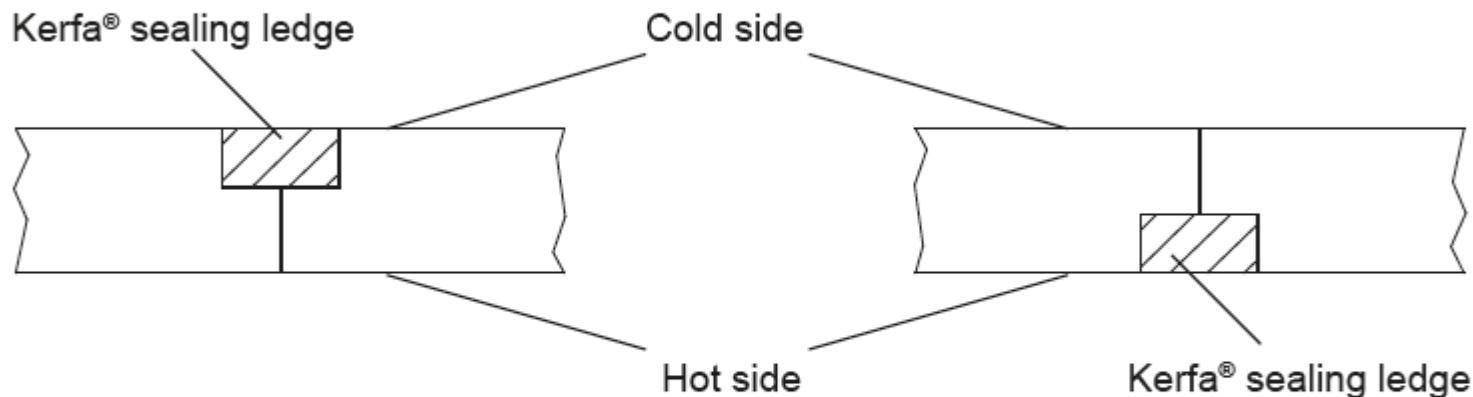
	$W/m\ K\ (600-1000^{\circ}C)$	% (Ref. FL)	
Chamotte <sup>1</sup>	~ 0,80 - 1,10	247%	
Insulating firebrick <sup>2</sup>	~ 0,34 - 0,39	100%	
Fibre blanket <sup>3</sup>	~ 0,14 - 0,30	60%	
<b>Kerfa® SAVAC® Insulating Systems</b>	<b>~ 0,13 - 0,21</b>	<b>47%</b>	
Microporous board <sup>4</sup>	~ 0,03 - 0,06	12%	

=> Using Kerfa® SAVAC® Insulating Systems **energy-** and **productivity advantages** will be triggered.

## Kerfa® sealing ledge

The Kerfa® sealing ledge prevents undetermined heat loss from taking place at the points at which two components (segments, plates, etc.) are in contact.

The Kerfa® sealing ledge can be placed either on the cold or the hot side of the vacuum molded component, whichever is preferred.



### ⇒ Customer benefits:

Minimum heat loss ensuring maximum exploitation of energy in furnace process area:

Lower surface temperature on furnace shell:

Reduced temperature in furnace installation room:

⇒ Reduced operating costs

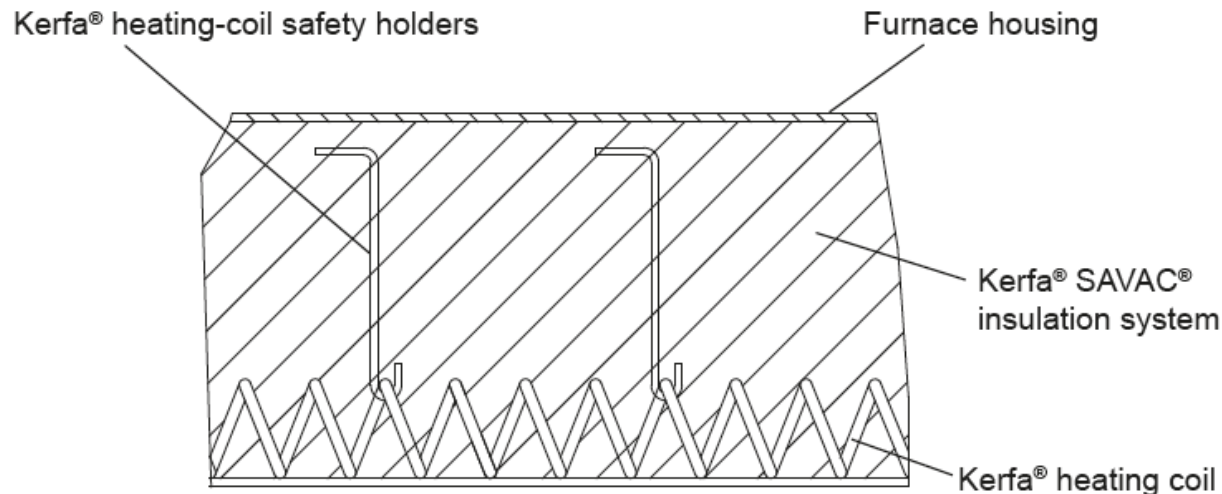
⇒ Lower risk of injury

⇒ Reduced operating costs

## Kerfa® heating-coil safety holders

Kerfa® heating-coil safety holders are used to permanently fix heating coils in system applications in ceiling areas.

For process temperatures of over 1,000°C, Kerfa® also recommends using heating-coil safety holders with side components.



### ⇒ Customer benefits:

Longer system service life:

No interruptions to the production process caused by detached heating coils and resultant repair:

Defined process temperature maintained in the furnace chamber:

⇒ Lower investment costs

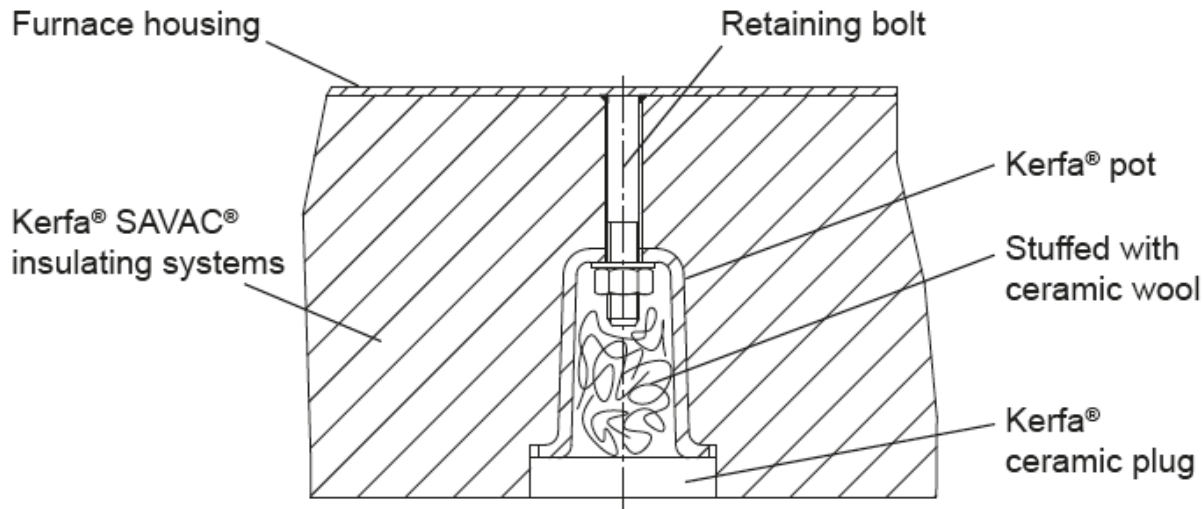
⇒ Reduced operating costs

⇒ Process stability



## Kerfa® heating and insulating system with ceramic pot

The Kerfa® ceramic pot is the ideal fixing system for ceiling or side-wall-mounted heating and insulating systems, and is optimized for energy efficiency.



### ⇒ Customer benefits:

Longer system service life:

Minimal heat loss:

High-stability mountings for heating and insulating systems:

Lower surface temperature on furnace shell:

Lower maintenance requirements:

⇒ Lower investment costs

⇒ Reduced operating costs

⇒ Lower investment costs

⇒ Lower risk of injury

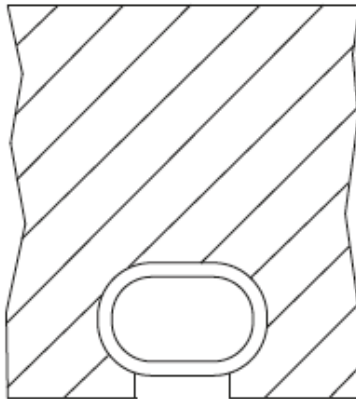
⇒ Reduced operating costs



## Kerfa® heating coils embedded, hollow-molded, open at front

This special Kerfa® product is available for heating plates, segments or half-shells.  
The heating coil can be round or oval.

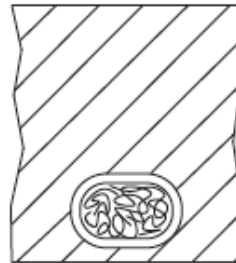
Hollow free of fibers



Heating coil embedded,  
hollow-molded, open at front

Hollow with fibers

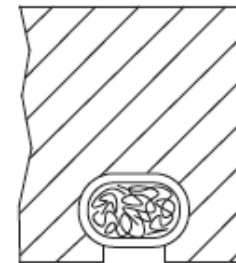
This construction suitable  
only for furnace tempera-  
tures up to 800°C



Heating coil embedded,  
closed at front

Hollow with fibers

This construction suitable  
only for furnace tempera-  
tures up to 950°C



Heating coil embedded,  
open at front

The standard surface loading for Kerfa® heating coils is 16 kW/m².  
Higher surface loadings are available on request.

### ⇒ Customer benefits:

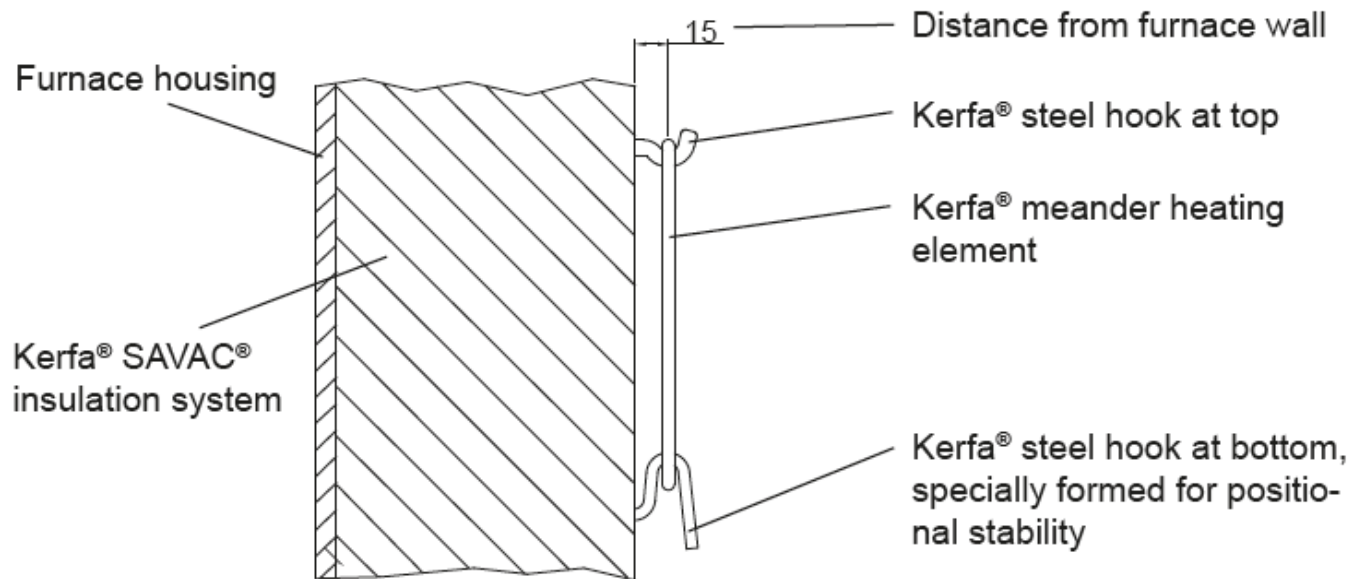
Lower heat accumulation for longer service life:

Higher energy efficiency:

⇒ Lower investment costs

⇒ Reduced operating costs

Kerfa® meander heating system suspended at a distance from the furnace wall with high positional stability



The standard surface loading for Kerfa® meander heating systems is 40 kW/m<sup>2</sup>. Higher surface loadings are available on request.

⇒ **Customer benefits:**

Smaller furnace dimensions:

Positionally stable suspension:

Lower maintenance requirements:

⇒ Lower investment costs

⇒ Process stability

⇒ Reduced operating costs

You will find the person directly in charge for you under:

**[www.kerfa.com](http://www.kerfa.com)**

at „Representatives“ or under +49 2331 9461 – 0

In our head quarter in Hagen following persons  
are available:

 **Kerfa®**  
  
Dipl.-Ing. (FH)  
**Dirk Göckener**  
Managing Director Sales  
  
**Kerfa GmbH**  
  
An der Kohlenbahn 30  
58135 Hagen  
Germany  
[www.kerfa.com](http://www.kerfa.com)  
  
Phone: +49 2331 9461 - 39  
Fax: +49 2331 9461 - 49  
Mobile: +49 178 81 26 41 8  
  
[dirk.goeckener@kerfa.com](mailto:dirk.goeckener@kerfa.com) **Kerfa®**  
  
**Dennis Dahlmann**  
Sales  
  
**Kerfa GmbH**  
  
An der Kohlenbahn 30  
58135 Hagen  
Germany  
[www.kerfa.com](http://www.kerfa.com)  
  
Phone: +49 2331 9461 - 22  
Fax: +49 2331 9461 - 20  
  
[dennis.dahlmann@kerfa.com](mailto:dennis.dahlmann@kerfa.com) **Kerfa®**  
  
**Petra Fudickar**  
Sales  
  
**Kerfa GmbH**  
  
An der Kohlenbahn 30  
58135 Hagen  
Germany  
[www.kerfa.com](http://www.kerfa.com)  
  
Phone: +49 2331 9461 - 21  
Fax: +49 2331 9461 - 20  
  
[petra.fudickar@kerfa.com](mailto:petra.fudickar@kerfa.com)

More information you will find under

[www.kerfa.com](http://www.kerfa.com)

As well as on our

**brochures,**

available as download (pdf)


or in **German, English,**

**Spanish, French, Russian,**

**Schwedish language**


which we will be happy to

send in paper version as well.




Kerfa®

Always hot




Kerfa®

Always hot



Kerfa®

Always hot



**Kerfa®**  
Systemlösungen für den Industrieofenbau

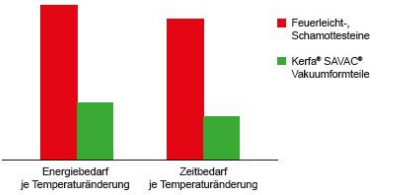
### Kerfa® Heiz- und Isoliersysteme

Kerfa®, Ihr Partner für den Industrieofen- und Gerätebau mit einer umfangreichen Palette innovativer Systemlösungen.

Kerfa® produziert effiziente und langlebige elektrische Widerstandsheizelemente sowie effiziente Heiz- und umweltverträgliche Isoliersysteme.

Die innovativen Kerfa® SAVAC® Isoliersysteme bestehen aus vakuumgeformten Keramik- oder Biofasern in unterschiedlicher Zusammensetzung. Sie werden nach kundenspezifischen Angaben gefertigt und bieten signifikante Kundenvorteile gegenüber herkömmlichen Materialien.

	Kerfa® SAVAC® Vakuumformteile	Feuerleicht-, Schamottesteine
Spezifisches Gewicht [kg/m³]	200	700 - 2.400
Spezifische Wärmekapazität [kJ/kg K]	0,90	0,96 - 1,09



Legend:   
■ Feuerleicht-, Schamottesteine   
■ Kerfa® SAVAC® Vakuumformteile

Energy requirement (Energiebedarf) and Time requirement (Zeitbedarf) per temperature change (je Temperaturänderung).

Die Kerfa® SAVAC® Biofasern werden nach EG – Richtlinien als nicht kreberregend eingestuft und sind frei von Gefahrstoffklassifizierungen.

Die Kerfa® Heizelemente bestehen aus hochwertigen Legierungen für hohe Leistungsdichten.

**Einsatzbereiche**

- Industrieöfen
- Laboröfen
- Schmelz- und Wärmehalteöfen für NE-Metalle
- Wärmebehandlungsanlagen
- Schutzgaserzeuger
- Wärmegeräte und Apparate

### calefacción y aislamiento productos especiales Kerfa®

Equipos industriales con una amplia gama de características robustas y eficientes así como sistemas de tuosos con el medio ambiente.

El aislamiento SAVAC® de Kerfa® se conforman al vacío a fibras biosolubles. Se fabrican según las especificaciones ventajas sobre los materiales convencionales.


Los productos de Kerfa® están clasificados según la norma europea y clasificados como material peligroso.

Kerfa® están fabricados con materiales de alta calidad de potencia.

Los hornos al vacío Kerfa® SAVAC® para horno a gas y hornos al vacío Kerfa® SAVAC® para horno eléctrico con elementos suspendidos Kerfa® SAVAC® están para su instalación.

La instalación de hornos Kerfa® SAVAC® en instalaciones existentes.

El mantenimiento de aleaciones no férricas.




### Kerfa® SAVAC® для промышленного нагрева

Системы промышленного и приборостроительного нагрева.

Изготовленные и экологически безопасные изоляционные материалы и электрические нагреватели.

SAVAC® изготовлены из керамического волокна вакуумного формирования. Изделия изготавливаются с учетом оптимальных преимуществ для клиентов в различных установках.

SAVAC® SAVAC® вакуумного формирования	Легкие огнеупорные кирпичи, шамотные кирпичи
200	700 - 2.400
0,90	0,96 - 1,09



Legend:   
■ Легкие огнеупорные кирпичи, шамотные кирпичи   
■ Изделия Kerfa® SAVAC®, изготовленные методом вакуумного формирования

Возможности применения изделий Kerfa® SAVAC® в нагревательных печах могут быть:

- «Сокращение производственных затрат»
- «Сокращение производственных затрат»
- «Сокращение капитальных затрат»
- «Сокращение производственных затрат»



Kerfa®

[www.kerfa.com](http://www.kerfa.com)