



**HKO**  
HEAT PROTECTION | TRUST THE EXPERTS

**PRODUCT INDEX**

**TRUST THE EXPERTS**

# About HKO

HKO GmbH was founded in Oberhausen in 1974. In the beginning, HKO GmbH focussed on selling heat protection products, primarily as replacements for asbestos fibres used in industrial applications. After asbestos fibres were classified as highly toxic, HKO began to develop and establish fibreglass textiles as a replacement for asbestos, and performed pioneering work in this area.

Over the past 30 years, our company, which began with just 5 employees, has turned into an innovative developer and leading international producer of future-oriented and sustainable specialty products for use in extreme temperature ranges. Our modern production facilities in Germany and China, our sales and engineering offices in France and the USA, as well as our large number of cooperation and distribution partners across the world are a reflection of our internationally recognized expertise.





We are known not only for our high quality standards, but also for our intelligent advice and attentive professional services provided by our sales, technology, research and development experts.

Highly skilled staff – a sure guarantee for intelligent solutions

## YOUR NEEDS ARE OUR DRIVING FORCE

The number of patents we register and apply – which is well above the industry average – is furthermore testimony of the close collaboration between our sales and technology departments. Provided with the latest laboratory equipment, our engineers and technicians' passion for and knowledge about their work are a sure guarantee that our research and development work always yields results that will serve both the market and our customers efficiently for the long term. Our close partnerships with renowned universities and leading institutes furthermore ensure that our research projects are highly diverse.

All of our production and engineering staff constantly participate in additional training – which is our way of assuring that our products are always of the highest quality and of ensuring our quality standards for the future. Our innovative and modern production facilities and procedures furthermore are a sure guarantee that we are able to meet our customers' requirements with flexibility, in line with market requirements, and to offer them tailor-made solutions.

Last but not least, we are also very aware that efficient logistics and distribution services are also vital for long-term and consistently successful collaborations. As a result, we take great pride in our modern storage system, which is testimony to the fact that we always guarantee the availability of our standard products to provide reliable delivery of customer specific components and items. Our global logistics system enables us to deliver our products rapidly and reliably to any place that our customers' may need them.

Our customers' needs are our driving force – both for now and the future. As one of our customers, you will come to know us as a reliable, forthcoming and solution-driven partner.





Our products

## TRUST THE EXPERTS!

Our family of technical textiles ranges from narrow textiles, fabrics, needle mats and 3D moulded components to custom-made fabric solutions. Our extensive and innovative finishing, coating and lamination solutions are the result of extensive research and product development work that has put us at the forefront of the industry. In doing this, we are also ensuring that HKO Group continues to be a technological market leader in the industry.

This means that our products, which are designed for temperature ranges from 350°C to around 1.600°C, are products you can trust.

## **Hakosil / 200 °C**

Hakosil 3500 gaskets are produced from a mix of elastomers and inert fillers, and further reinforced with aramid and inorganic fibres. Hakosil gaskets are resistant to most of the fluids used in industry as per their resistance specifications.

## **Hakamid®, Hakanit® / 350 °C**

Hakamid® and Hakanit® products are made from aramid fibres, and can also be supplied with various other fibres mixed in.

## **Thermo-E-Glass / 550 °C**

E-Glass is a high quality specialty product and forms the basis of all our Thermo E-Glass products. It has a high thermal resistance rating and excellent electrical insulating properties.

## **Haktoherm®-800, Silontex® / 750 °C**

These products are made from calcium silicate fibres and have a filament diameter in excess of 6 µ. They offer excellent protection against liquid metals and molten metal splashes in the light and heavy metal industry.

## **Hakotherm®-1200, Silicatherm® / 1.000 °C**

Hakotherm® 1200 and Silicatherm® products are made from silicate fibres. They are produced from continuous filament yarn with a filament diameter in excess of 6 µ.

## **Hakoplan-1100-Bio / 1.100 °C**

Hakoplan-1100 Bio is an insulating board made from bio-soluble, mineral  $\text{SiO}_2$ , CaO-based fibres and contains traces of  $\text{MgO}$ ,  $\text{Fe}_2\text{O}_3$  und  $\text{Al}_2\text{O}_3$ . These insulating boards have excellent properties and are suitable for use in the steel industry, in industrial, furnace, and boiler construction and the electro-technical industry.

## **Silicatex® / 1.200 °C**

Our Silicatex® products are made from high purity silicate fibres ( $\text{SiO}_2$  content approx. 98.9 %). Due to their high long-term heat resistance, all of our Silicatex® products offer excellent protection against liquid metal splashes and hot waste products.

## **CMS-Bio / 550 °C / 1.000 °C / 1.260 °C**

CMS-Bio products are made from calcium magnesium silicate fibres. The pure fibre is white and fleecy, is highly temperature resistant and has low thermal conductivity. In order to make them into textile products, they have to be mixed with organic fibres such as glass or chrome. The ignition loss of these products is around 15 - 20 %. As these products are bio-soluble, they do not have hazardous substance ratings.



# Narrow textiles



550 °C

## Thermo-E-Glass yarn

- Textured and/or twisted
- 34 tex – 4.000 tex optionally available with chrome steel reinforcement



550 °C

## Thermo-E-Glass overbraided rope

- Ø 3 – 40 mm



750 °C

## Silontex® yarn

- Textured and twisted
- 300 tex x 2 – 1,250 tex x 3
- Optionally available with chrome steel reinforcement



550 °C

## Thermo-E-Glass knitted rope

- Ø 3 – 30 mm
- Rope colours available: white and anthracite



1.000 °C

## Hakotherm®-1200 yarn

- Textured and/or twisted
- 66 tex – 2,000 tex
- Textured 1,620 tex
- Twisted 2,000 tex
- Optionally available with chrome steel reinforcement



550 °C | 1.000 °C

## CMS-Bio rope

- Bio-soluble rope reinforced with either glass or chrome steel
- Ø 3 – 50 mm



350 °C

## Hakamid® rope

- Twisted
- Ø 3 – 30 mm



1.000 °C

## CMS-Bio ISO rope

- With chrome steel reinforcement
- Ø 12 – 60 mm open meshes
- Ø 12 – 100 mm closed meshes



550 °C

## Thermo-E-Glass rope

- Twisted
- Ø 3 – 30 mm



750 °C

## Silontex® rope

- Twisted
- Ø 3 – 30 mm



750 °C



**Silontex® overbraided rope**

- Ø 3 – 40 mm

350 °C



**Hakamid® braided packing**

- Square or rectangular section, 5 – 80 mm square
- Round section, Ø 6 – 80 mm

1.000 °C



**Hakoherm®-1200 rope**

- Twisted
- Ø 3 – 30 mm

550 °C



**Thermo-E-Glass braided packing**

- Square section, 5 – 80 mm square
- Round section, Ø 3 – 80 mm
- Rectangular section on request

1.000 °C



**Hakoherm®-1200 overbraided rope**

- Ø 3 – 40 mm

550 °C | 1.000 °C



**CMS-Bio braided packing**

- Bio-soluble rope reinforced with either glass or chrome steel
- Square or rectangular section, 5 – 80 mm square
- Round section, Ø 4 – 80 mm

1.000 °C



**Hakoherm®-1200 knitted rope**

- Ø 3 – 30 mm

750 °C



**Silontex® braided packing**

- Square section, 5 – 80 mm square
- Round section, Ø 4 – 80 mm
- Rectangular section on request

350 °C – 1.000 °C



**Knitted ropes with knitted metal sleeve**

- Available in Hakamid® to Hakoherm®-1200

750 °C



**Silontex® tubular braided packing**

- Ø 15 – 120 mm round section
- Optionally available with chrome steel reinforcement
- The core can optionally be produced from CMS-BIO, Hakoherm®- 800 or Hakoherm®-1200
- Square section on request

# Narrow textiles



1.000 °C

## Hakotherm®- 1200 braided packing

- Square section, 4 – 80 mm square
- Round section, Ø 4 – 80 mm
- Rectangular section on request



550 °C | 1.000 °C

## CMS-Bio sleeve

- Bio-soluble rope reinforced with either glass or chrome steel
- 5 – 60 mm internal diameter



1.000 °C

## Hakotherm®- 1200 tubular braided packing

- Round section, Ø 12 – 120 mm
- Optionally available with chrome steel reinforcement
- The core can optionally be produced from CMS-BIO, Hakotherm®-800 or Hakotherm®-1200
- Square section on request



750 °C

## Silontex® sleeve

- Braided, 6 – 120 mm internal diameter
- Woven, 10 – 140 mm internal diameter
- Pre-fabricated sleeves with a coarse seam on one side



350 °C

## Hakamid® sleeve

- Braided, 10 – 120 mm internal diameter
- Woven, 10 – 140 mm internal diameter
- Pre-fabricated sleeves with a coarse seam on one side



350 °C | 750 °C

## Fire protection sleeve

- 10 – 300 mm internal diameter



550 °C

## Thermo-E-Glass sleeve

- Braided, 6 – 120 mm internal diameter
- Woven, 10 – 140 mm internal diameter
- Pre-fabricated sleeves with a coarse seam on one side



1.000 °C

## Hakotherm®-1200 sleeve

- Braided, 6 – 120 mm internal diameter
- Woven, 10 – 140 mm internal diameter
- Pre-fabricated sleeves with a coarse seam on one side



550 °C

## Thermo-E-Glass filament sleeve

- Braided
- 0.5 – 200 mm internal diameter
- Also available as an impregnated or silicone coated sleeve



350 °C - 1.000 °C

## Braided or knitted hollow wire tube

- Available in various material combinations
- Tube jackets are available in Hakamid®, Thermo E-Glass, Silontex® and Hakotherm®-1200



1.000 °C



**Silicatherm® sleeve**

- Pre-fabricated sleeves with a coarse seam on one side

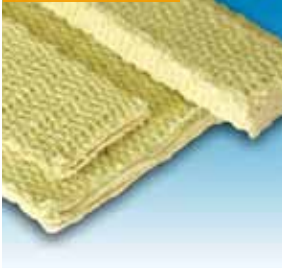
550 °C



**Thermo-E-Glass hemstitch seam tape**

- Thickness: 2 – 6 mm
- Width: available on request
- Available with various hemstitch seams

350 °C



**Hakamid® tape**

- With/without brass reinforcement
- Thickness: 2 – 20 mm
- Width: available on request

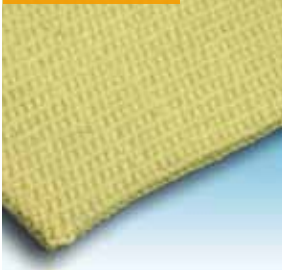
550 °C



**Thermo-E-Glass fine webbing**

- Thickness: 0.1 – 0.4 mm
- Width: available on request

350 °C



**Hakamid® pneumatic belt**

- For conveying channels
- Thickness: 4.5 mm
- Width: 150 – 750 mm
- Other thicknesses and widths available on request

550 °C



**Thermo-E-Glass knitted tape**

- Thickness: 2 – 4 mm
- Width: 8 – 30 mm
- Also available with one-sided adhesive coating for ease of installation

550 °C



**Thermo-E-Glass tape**

- Plain/twill weave
- Woven in a single layer
- Thickness: 1 – 3 mm
- Width: available on request
- Also available with one-sided adhesive coating for ease of installation

550 °C | 1.000 °C



**CMS-Bio tape**

- Bio-soluble fabric reinforced with either glass or chrome steel
- Plain/twill weave
- Thickness: 2 – 5 mm
- Width: 10 – 200 mm

550 °C



**Thermo-E-Glass tape**

- Plain weave
- Woven in a multiple layers
- Thickness: 4 – 30 mm
- Width: available on request

750 °C



**Silontex® woven tape**

- Plain/twill weave
- Woven in a single layer
- Thickness: 2 mm and 3 mm
- Width: 15 – 300 mm

# Narrow textiles



750 °C

## Silontex® woven tape

- Plain weave
- Woven in a multiple layers
- Thickness: 4 – 30 mm
- Width: available on request



1.000 °C

## Hakothersm®-1200 fine tape

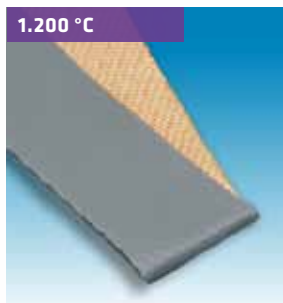
- Thickness: 0.2 – 0.5 mm
- Width: available on request



750 °C

## Silontex® hemstitch seam tape

- Thickness: 2 – 6 mm
- Width: available on request



1.200 °C

## Silicatex®tape

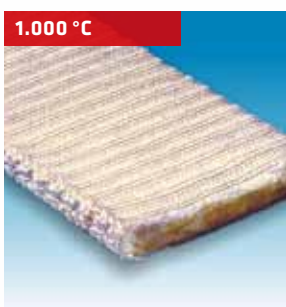
- With one-sided fray resistant coating and cut edges
- Widths available on request



1.000 °C

## Hakothersm®-1200 woven tape

- Plain/twill weave
- Woven in a single layer
- Thickness: 2 mm and 3 mm
- Width: 10 – 300 mm



1.000 °C

## Hakothersm® 1200 woven tape

- Plain weave
- Woven in a multiple layers
- Thickness: 4 – 30 mm
- Width: available on request



1.000 °C

## Hakothersm®-1200 hemstitch seam tape

- Thickness: 2 – 6 mm
- Width: available on request



up to 350 °C



### Hakamid® fabric

- Available in different blends and weaves
- Temperature resistance depends on the other fibres included in the fabric
- Thickness: approx. 0.2 – 2.2 mm
- Weight: approx. 150 – 750 g/m<sup>2</sup>

up to 250 °C



### Hakanit® Finishes

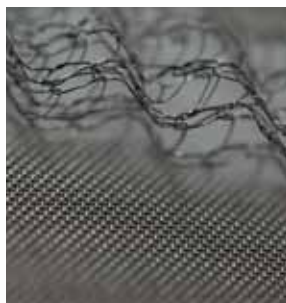
- Lamination of transfer film
- Lamination of aluminized PES and PET foils
- Types of finish/coating: roughing, (thermal) finish, hydrophobic and oleophobic finish, fire-retarding finish, silicone, PU etc.
- Temperature resistance depends on the fibre blend and finish

up to 350 °C



### Hakamid® fabric with aluminium coating/laminate film

- Aluminium transfer foil
- 6 µ and 12 µ polyester foil, aluminized on one or both sides
- High ability to reflect heat radiation
- Conforms to DIN EN ISO 11612
- Resistant to abrasion and creasing
- Flexible and supple



### Woven and knitted wire mesh fabric

- Available in various types of steel, e.g. 1.4301
- Wire diameter, mesh widths and thicknesses available on request
- Knitted fabrics are also available as corrugated fabrics

up to 350 °C



### Hakanit® knitted fabrics

- Available in different blends and weaves
- Temperature resistance depends on the other fibres included in the fabric
- Weight: approx. 120 – 1,300 g/m<sup>2</sup>
- Thickness: approx. 0.5 – 5.0 mm
- Available as a sleeve and as broadcloth

550 °C | 1.000 °C



### CMS-Bio fabric

- Bio-soluble
- With glass or chrome steel reinforcement
- approx. 300 – 1,700 mm wide
- 1.6 – 10 mm thick

up to 350 °C



### Hakanit® knitted, synthetic and natural fibres

- Available in different fibres and weaves
- Comfortable to wear
- Good insulating characteristics
- Temperature resistance depends on the other fibres included in the fabric
- Weight: approx. 120 – 1,300 g/m<sup>2</sup>
- Thickness: approx. 0.5 – 5.0 mm

550 °C



### Thermo-E-Glass fabric TG 410

- Made from textured/twisted yarns
- 2/2 twill weave
- Weight: approx. 430 g/m<sup>2</sup>
- Thickness: approx. 1.3 mm
- Shoot: effect yarns
- Standard width: 1,000 – 2,000 mm, other widths available on request

up to 350 °C



### Hakanit® knitted fabrics, knitted cuff material

- Available in various fibre blends
- Weave: ribs
- Diameter: approx. 50 – 80 mm
- Weight: approx. 40 – 100 g/m
- Thickness: approx. 0.5 – 1.0 mm
- Temperature resistance depends on the fibre blend
- Comfortable and supple

550 °C



### Thermo-E-Glass fabric TG 650 L

- Made from textured yarns
- Plain weave
- Weight: approx. 650 g/m<sup>2</sup>
- Thickness: approx. 0.9 mm thick
- Standard width: 1,000 – 2,000 mm, other widths available on request



# Woven & knitted fabrics



550 °C

## Thermo E-Glass fabric TG 950

- Made from textured yarns
- Crowfoot weave
- Weight: approx. 950 /m<sup>2</sup>
- Thickness: approx. 1.5 mm



550 °C

## Thermo E-Glass fabric TG 2000 L

- Made from textured yarns
- Plain weave
- Weight: approx. 2,000 g/m<sup>2</sup>
- Thickness: approx. 3.0 mm



550 °C

## Thermo E-Glass fabric TG 1000 L

- Made from textured/twisted yarns
- Plain weave
- Weight: approx. 1,000 g/m<sup>2</sup>
- Thickness: approx. 1.5 mm
- Also available in twill and matt weave



550 °C

## Thermo E-Glass filament fabric TG 100, TG 120, TG 180, TG 200

- Plain weave
- Weight: approx. 100 – 200 g/m<sup>2</sup>
- Thickness: approx. 0.2 mm



550 °C

## Thermo E-Glass fabric TG 1150 P / TG 1950

- Made from textured yarns
- Matt weave
- Weight: approx. 1,150 – 1,950 g/m<sup>2</sup>
- Thickness: approx. 1.6 – 3.0 mm thick
- Special fabric for compensator construction



550 °C

## Thermo E-Glass filament fabric TG 430

- Crowfoot weave
- Weight: approx. 430 g/m<sup>2</sup>
- Thickness: approx. 0.5 mm



550 °C

## Thermo E-Glass fabric TG 700 L V4A / TG 1000 L V4A / TG 1100 L V4A / TG 1250 P V4A

- Made from textured/twisted yarns with V4A wire
- Plain/matt weave
- Weight: approx. 700 – 1,100 g/m<sup>2</sup>
- Thickness: approx. 0.9 – 1.4 mm



550 °C

## Thermo E-Glass filament fabric TG 460 V4A / TG 600 V4A

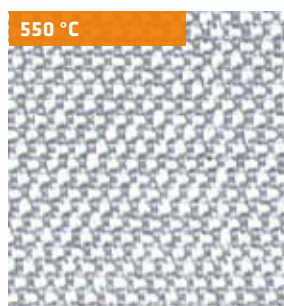
- With V4A wire
- Crowfoot weave
- Weight: approx. 460 – 600 g/m<sup>2</sup>
- Thickness: approx. 0.5 mm



550 °C

## Thermo E-Glass fabric TG 1250 K / TG 3000 K

- Made from textured yarns
- Twill weave
- Weight: approx. 1,250 – 3,000 g/m<sup>2</sup>
- Thickness: approx. 1.7 – 4.5 mm



550 °C

## Thermo E-Glass filament fabric TG 550 L V4A

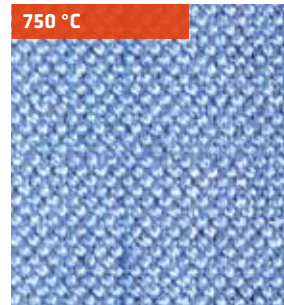
- With V4A wire
- Plain weave
- Weight: approx. 530 g/m<sup>2</sup>
- Thickness: approx. 0.5 mm

Standard width: 1,000 – 2,000 mm, other widths available on request



**Thermo-E-Glass filament fabric  
TG 600 / TG 810**

- Check binding
- Weight: approx. 600 – 800 g/m<sup>2</sup>
- Thickness: approx. 0.6 – 0.9 mm thick



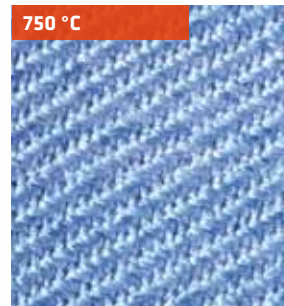
**Silontex® fabric S 110 L / S 140 L**

- Made from textured and twisted yarns
- Plain weave
- Weight: approx. 1,100 – 1,350 g/m<sup>2</sup>
- Thickness: approx. 1.8 – 2.3 mm



**Thermo-E-Glass filament fabric  
TG 660/TG 870**

- 1/7 satin weave
- Weight: approx. 660 – 870 g/m<sup>2</sup>
- Thickness: approx. 0.7 – 0.8 mm



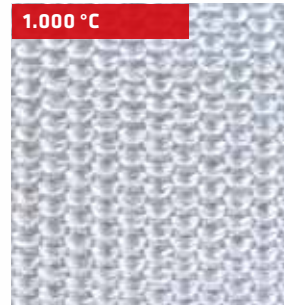
**Silontex® fabric S 200 K**

- Twill weave
- Weight: approx. 2,000 g/m<sup>2</sup>
- Thickness: approx. 3.2 mm



**Thermo-E-Glass filament fabric  
TG 660 V4A**

- With V4A wire
- 1/7 satin weave
- Weight: approx. 660 g/m<sup>2</sup>
- Thickness: approx. 0.7 mm



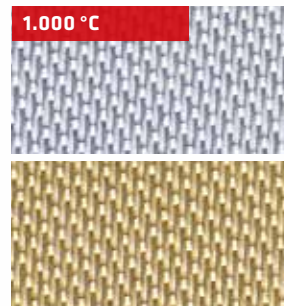
**Hakotherm®-1200 fabric**

- Weight: approx. 740 – 2,000 g/m<sup>2</sup>
- Thickness: approx. 1 – 3 mm
- Optionally also available with V4A wire



**Thermo-E-Glass filament fabric  
TG 670 RBO V4A**

- With V4A wire
- Twill weave
- Weight: approx. 660 g/m<sup>2</sup>
- Thickness: approx. 0.7 mm



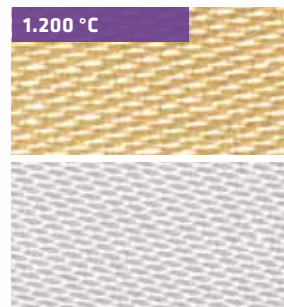
**Silicatherm® fabric HS 180, HS300,  
HS 650, HS 900, HS 1250**

- Weight: approx. 180 – 1,250 g/m<sup>2</sup>
- Also available tempered / pre-shrunk (type T)



**Thermo-E-Glass filament fabric  
TG 1000 KK**

- Made from twisted yarns
- Crowfoot weave
- Weight: approx. 1,000 g/m<sup>2</sup>
- Thickness: approx. 1.4 mm
- Special fabric for compensator construction



**Silicatex® fabric 650, 1250**

- Satin weave
- Weight: approx. 650 – 1,250 g/m<sup>2</sup>
- Thickness: approx. 0.7 – 1.3 mm
- Also available tempered / pre-shrunk (type 650T, 1250T)

Standard width: 1,000 – 2,000 mm, other widths available on request



# Coatings, finishes & laminations

200 °C



## G1, G2, Alufix, Alufix on both sides

- Silver-grey, flame-retardant PU coating
- Solvent and halogen free
- For increasing slip and fray resistance
- Can be supplied in various colours
- Comes with a range of approvals and test reports

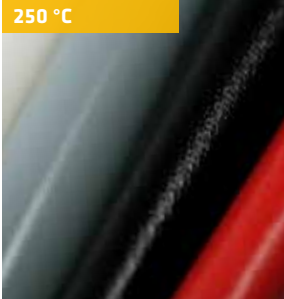
600 °C



## HTM 600

- Highly flame-retardant finish
- Soft grip, dust proof
- Increases slip resistance

250 °C



## Silicone

- Silicone rubber coating on one/ both sides
- Good light, weather, UV and oxidation resistance
- Largely resistant to oils, greases, acids and lye
- Good electrical insulation properties
- Can be supplied in various colours

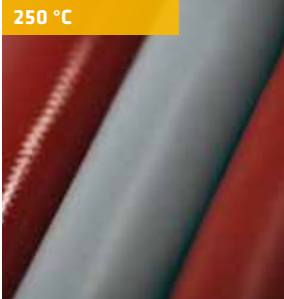
700 °C



## MT

- Fabric stabilisation on both sides
- Highly flame-retardant finish
- Highly fray resistant
- Good abrasion resistance
- Solvent and halogen free
- Can be supplied in various colours

250 °C



## Transfer silicone

- Applied by transfer
- Available in a range of surface finishes

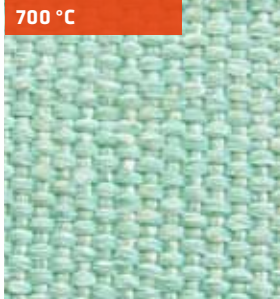
## High-temperature silicone

- Improved temperature characteristics

## Silicone G

- Waterproof
- Extremely flexible
- Can be tailored to requirements
- Elastic

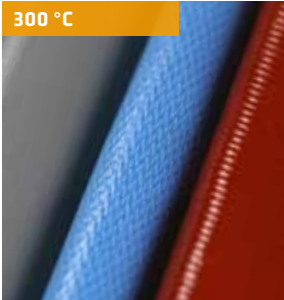
700 °C



## CS

- Highly flame-retardant finish
- Highly slip and fray resistant
- Can be supplied in various colours
- Comes with a range of approvals and test reports

300 °C



## Topcoat

- Silicone rubber top coat with a dry, soft grip
- For improving sliding properties

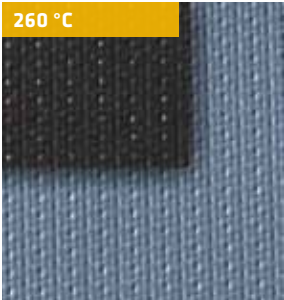
750 °C



## HT 90

- White, inorganic special finish
- Very rigid fabric

260 °C



## PTFE

- Extremely resistant to nearly all chemicals, acids and solvents
- Excellent non-stick properties
- Low friction coefficient
- Available as a static and antistatic finish

1.000 °C



## AR / FH1000

- Golden-brown fabric finish
- Increases abrasion and fray resistance
- Optionally available on one or both sides





#### SF

- Increases seam slip resistance for sewing during production
- Protects against fraying/abrasion



#### Aluminium / stainless steel foil

- High chemical resistance
- Good to excellent heat reflection capacity
- Maximum contact heat (adhesive) up to 250°C, standard approx. 170°C
- Maximum temperature resistance:
  - Aluminium foil: up to approx. 600°C,
  - stainless steel foil up to approx. 1,000°C
- Available in various finishes



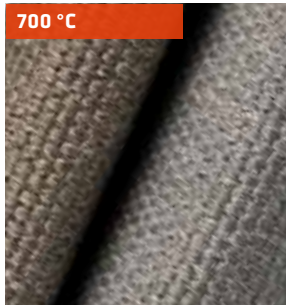
#### Caramelisation

- Thermally de-sized
- Colour: brown
- Soft to the touch



#### Aluminium pigmented transfer foil

- Flexible and pliable
- Good heat reflection capacity
- Easy to work with
- Maximum application temperature approx. 180°C to 200°C
- Resistances depends on application
- Finish: matt or gloss



700 °C

#### G-Tec / G-Tec Ultra

- Above average abrasion and vibration resistance
- Highly flame-retardant
- **G-Tec**
  - Grey special finish
- **G-Tec Ultra**
  - Minimises smoke thanks to an additional, multi-stage chemical treatment process



#### Al-PET foil

- Single or both side aluminium pigmented PET foil (6 µ or 12 µ)
- Good heat reflection capacity
- Good chemical resistance, gas proof
- Max. contact heat up to approx. 180°C (adhesive)
- Max. application temperature of the PET foil up to approx. 200°C



200 °C

#### Oleophob

- Makes products oil proof at room temperature for three months (HKO in-house method)
- Makes non-tempered materials oil resistant with grade 8 (in connection with AATCC 118)
- Makes products resistant to organic acids, hard water and diesel and petrol fuels



#### Self-adhesive coating

- Excellent for use as an assembly aid
- Available in various finishes
- Protects materials from fraying
- Suitable for laminating fabrics and needle mats
- Temperature resistances depend on the application and are available on request



#### Talpatex

- Black, non-flammable, intumescent coating
- Available with various expansion temperature with different matrixes

# Fibres, felts, fibre mats



350 °C

## Hakamid® felts

- Thickness: approx. 0.6 – 35 mm
- Surface weight: approx. 60 – 25,000 g/m<sup>2</sup>
- Volume weight: approx. 0.08 – 0.40 g/cm<sup>3</sup>



750 °C

## Hakotherm®-800 needle stitch-boned mat Type NGMA

- Thickness: approx. 4 – 12 mm
- Surface weight: approx. 400 – 2,900 g/m<sup>2</sup>
- Stitched with glass sewing yarn



500 °C | 750 °C | 1000 °C | 1100 °C

## Stuffing fibres

- Stuffing fibres made of
  - Thermo-E-Glass
  - Hakotherm®-800
  - Hakotherm®-1200
  - CMS-Bio



1.100 °C

## CMS-Bio fibre mats

- Bio-soluble
- Volume weight: approx. 96 – 128 kg/m<sup>3</sup>
- Thickness: approx. 12 – 50 mm



500 °C

## Thermo-E-Glass needle mat Type NE

- Thickness: approx. 3 – 50 mm
- Surface weight: approx. 300 – 8,000 g/m<sup>2</sup>
- Also available as low odour / emission versions (Type NES A)



1.000 °C

## Hakotherm®-1200 needle mat Type SK

- Thickness: approx. 3 – 50 mm
- Surface weight: approx. 300 – 8,000 g/m<sup>2</sup>
- Also available as a Hakotherm®-1300 needle mat Type SI, with a temperature resistance of up to approx. 1,100 °C



600 °C

## Thermo-E-Glass needle stitch-boned mat Type NGME

- Thickness: approx. 4 – 12 mm
- Surface weight: approx. 400 – 2,900 g/m<sup>2</sup>
- Stitched with glass yarn



1.000 °C

## Hakotherm®-1200 stitch-boned mat Type NGMS

- Thickness: approx. 4 – 12 mm
- Surface weight: approx. 400 – 2,900 g/m<sup>2</sup>
- Stitched with glass sewing yarn



750 °C

## Hakotherm®-800 needle mat

- Thickness: approx. 3 – 50 mm
- Surface weight: approx. 300 – 8,000 g/m<sup>2</sup>



## Needle mats with laminate

- Aluminium or stainless steel foils, smooth, perforated or embossed, laminated on one or both sides
- Up to 25 mm thickness as rolls, above 25 mm thickness as panels
- Self-adhesive coating with paper or foil liner, scrim-reinforcement available
- Various temperature resistances

# Gaskets and insulating boards, papers, moulded and stamped parts

200 °C



## Hakosil-3500 gaskets

- Format: 1,500 x 1,500 mm
- Available thicknesses: 0.5 – 3.0 mm

1.100 °C



## CMS-Bio fibre boards

- Bio-soluble
- 270 – 330 kg/m<sup>3</sup> / 3 – 15 mm thickness
- 200 – 250 kg/m<sup>3</sup> / 15 – 75 mm thickness
- Formats: 610 x 1,000 mm and 1,250 x 1,000 mm
- Other sizes and thicknesses on request

1.100 °C



## CMS-Bio paper

- Bio-soluble
- Thickness: 0.5 – 10.0 mm

1.000 °C



## Hakothersm®-1200 boards

- Thickness: 5 – 200 mm
- Formats: 1,200 x 1,000 mm and 610 x 1,000 mm
- Other sizes and thicknesses on request

1.100 °C



## Hakoplan-1100-Bio insulating boards

- Format: 1,000 x 1,000 mm
- Available thicknesses: 2 – 10 mm
- Ceramic fibre-free



## Moulded 3D parts and pipe sleeves

- Temperature resistant from 550°C to 1,100°C
- Made of Thermo E-Glass, Hakothersm®-800, Hakothersm®-1200, Hakothersm®-1300 and Hakothersm®-1200 Turbo
- 3D formed part made of vibration-resistant needle mats
- Contains inorganic bonding agent



## Stamped parts

- Temperature resistance 550°C – 1,100°C
- Two-dimensional part
- Stamped from Thermo E-Glass, Hakothersm®-800, Hakothersm®-1200, Hakothersm®-1300
- Available with self-adhesive finish for easy installation



**Illustrated Brochure  
 Thermal Insulations  
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 Fire and Heat Protection  
 Automotive  
 Personal Protective Equipment  
 Furnace Constructions**



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HKO Heat Protection Group is an expert in all matters related to thermal insulation, high temperature seals and fire and heat protection.

Our illustrated brochure provides a brief overview of our company, products and areas of operation.

More information on the individual areas of application can be found in our three dedicated brochures:

- HKO materials for thermal insulation, reducing heat loss, and protecting sensitive parts.
- Sealing materials for use on movable and stationary interfaces, to prevent the passage of fluids and gasses, and the loss of heat
- Textile solutions for preventing and reducing the creation, spread and effects of fire and major heat.

Three further brochures inform you in detail about products for the automotive industry, personal protective equipment and furnace constructions.

Please do not hesitate to contact us for any further information. If you have questions concerning our products, your application requirements, or need our assistance in solving your specific problem – we are here for you.

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