



# HKO

HEAT PROTECTION | [TRUST THE EXPERTS](#)

**TRUST THE EXPERTS**

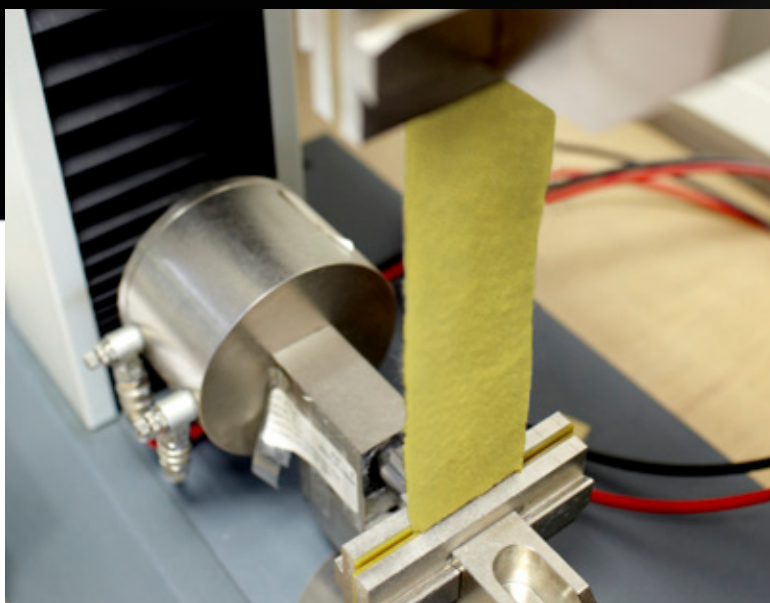
**PERSONAL PROTECTIVE EQUIPMENT**

## We deliver what we promise!

We use natural as well as high-tech fibres in the manufacture of our products. Our Hakamid® fabrics and Hakanit® knit fabrics are manufactured from many different fibres and fibre blends such as wool and cotton, E-Glass, silicate, para-aramid such as Kevlar®, Twaron®, regenerated fibres, meta-aramid such as Nomex® and Kermel®, Preox®, Cordura®, high-strength fibres such as polyester, polyamide and polyethylene as well as metallic fibres such as stainless steel and steel.

The HKO Group works in partnership with our customers which allows us to collaborate and design products for their respective conditions and applications.

Our research and development department works in close cooperation with renowned research institutes to complete new projects and create new products. It is our goal to improve existing products through the innovative uses of new yarn combinations and by utilising the most modern production techniques. Producing fabrics and knit fabrics for the protection of the human body is not only a continuous challenge, but it is also our responsibility. You can TRUST THE EXPERTS.



## Certificates

Adhering to laws and regulations is a basic requirement to ensure that our products are safe. We guarantee verified quality through our cooperation with accredited certifying authorities.

- Heat protection
- Welding protection
- Mechanical protection
- Chemical protection



Certificates and approvals which are in accordance with EC regulations for PPE are the bare minimum for our fabrics and knit fabrics and are part of our portfolio.

To us, protection means providing the best possible safety for workers, while minimizing the impact on the environment and nature.

By adhering to the most stringent regulatory conditions and by utilising regenerated raw materials we are preparing for the ecological requirements of the future.



# Applications and sectors

Our Hakamid® fabrics and Hakanit® knit fabrics were developed primarily for the protection of people and equipment. Beyond this, we are always aiming to manufacture products that are comfortable and soft to ensure maximum flexibility and comfort.

The products provided by the HKO Heat Protection Group are used in almost all industry sectors, such as the heavy metal and aluminium industry, foundries, automotive industry and glass industry. Our fabrics and knit fabrics are also used as personal protective equipment for the fire departments, military, police and in the sports sector.

Hakanit® fabrics and Hakamid® knit fabrics are suitable for the fabrication of equipment that covers from head to toe: Safety helmets, protective gloves, protective suits, safety shoes, protective covers and protective curtains. Our materials also provide protection for machines.









## FROM HEAD ...

For the fire departments, the military, and police flame-resistant protective clothing is indispensable. Additionally, protective clothing for industry must provide protection against arcing and splashes of molten metal.

The wearing comfort of personal protective equipment is a particularly important aspect in all application sectors. Research has shown that many workers are not wearing their protective clothing because they say it is uncomfortable.

The Hakamid® fabrics and Hakanit® knit fabrics made by the HKO Heat Protection Group not only offer the required resistance against fire and heat, but are also comfortable to wear. Our focus is always on manufacturing and developing products that are tailored to their application and that guarantee safety in all instances.



## 1 Protective hoods and helmets

- Products:
  - Hakamid® fabrics in the most varied designs, weights and weaves
  - Laminated Hakamid® fabrics
  - Hakanit® knit fabrics in the most varied designs, weights and weaves
- Sub-types: Hoods, helmets
- Applications:
  - Protective hoods for motor bike racing, industry and fire departments



## 2 Protective jackets

- Products:
  - Hakamid® fabrics in the most varied designs, weights and weaves
  - Laminated Hakamid® fabrics
  - Viscose fabrics
  - Hakowool fabrics
- Sub-types: Vests, shirts, coats, suits
- Applications:
  - Protective jackets and suits for industry (e.g., foundry)
  - Fire departments, military, and sport

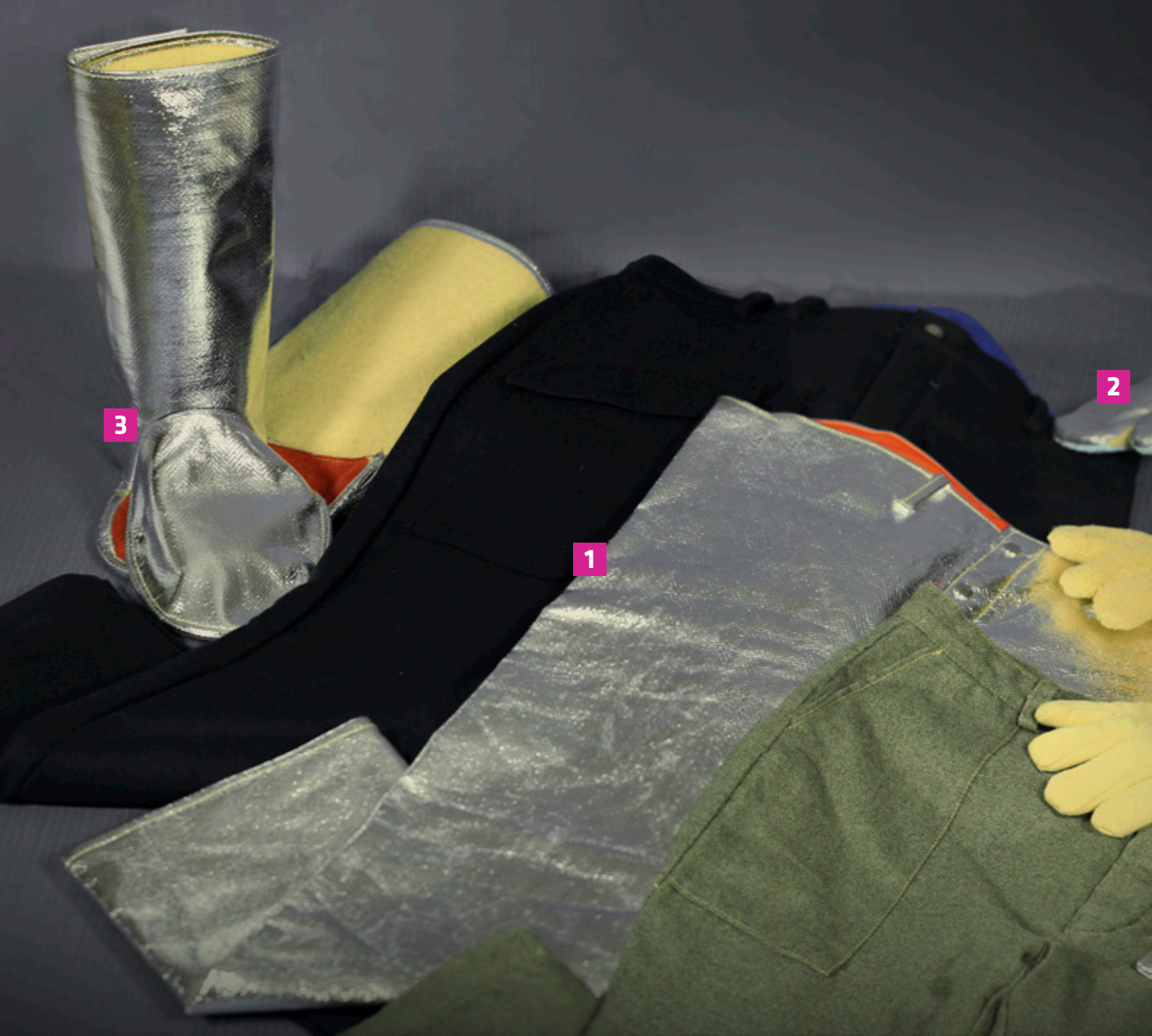


## 3 Protective sleeves

- Products:
  - Hakanit® knit fabrics
- Sub-types: Cuffs of gloves or clothing
- Application:
  - Protective sleeves for industry, e.g., glass industry, fire departments, military, and sport







## ... TO TOE – VERIFIED SAFETY

In order to demonstrate to our customers the safety of our products in writing, all products are tested by renowned institutes. You can be certain that our products deliver what they promise.

Our standard Hakamid® fabrics are tested and certified according to DIN EN ISO 11612, amongst others. They provide protection against

- Molten metal splashes
- Radiated heat
- Convective heat
- Contact heat

Our standard Hakanit® knit fabrics are primarily tested and certified according to EN 388. They provide protection with respect to abrasion, ripping and puncture. Moreover, they also provide excellent cutting resistance.



## 1 Protective trousers

- Products:
  - Hakamid® fabrics, also laminated
  - Viscose fabrics
  - Hakowool fabrics
- Sub-types: Underwear, bibs and brace overal
- Application:
  - Protective trousers for industry (e.g., foundry)
  - Fire departments, military and sport



## 2 Protective gloves

- Products:
  - Silontex® fabrics
  - Thermo- E-Glass fabrics with high-temperature finish
  - Hakanit® knit fabrics in different designs, weights and weaves
  - Hakamid® fabrics in different designs, weights and weaves
  - Laminated Hakamid® fabrics
  - Viscose fabrics, also laminated
  - Laminated Hakamid® fabrics and Hakanit® knit fabrics
- Sub-types: Mitts, hand-pads
- Application:
  - Protective gloves for industry
  - fire departments, military and sport



## 3 Protective gaiters / protective footwear

- Products:
  - Hakamid® fabrics in varying designs, weights and weaves
  - Laminated Hakamid® fabrics
  - Hakanit® knit fabrics in varying designs, weights and weaves
- Sub-types: Boots, shoe protectors
- Application:
  - fire departments and military

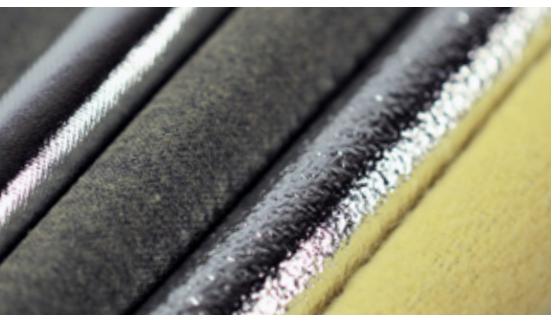


## FABRIC



### Hakamid® fabrics

- Can be supplied in different blends
- Temperature resistance up to 350 °C, depending on fibre blend
- Thickness: 0.2–2.2 mm
- Weight: approx. 150–750 g/m<sup>2</sup>
- Weave: Herringbone, twill weave, canvas, panama and atlas



### Aluminised Hakamid® fabrics /Foil lamination

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



### Silicon and PU coating

- Temperature resistant up to 300 °C



### High-temperature and fire protection equipment

- Temperature resistant up to 1000 °C



# KNIT FABRICS

## Hakanit® knit fabrics

- Available in different blends and weaves
- Temperature resistant up to approx. 350 °C, depending on fibre blend
- Weight: 120-1300 g/m<sup>2</sup>
- Thickness: 0.5-5.0 mm
- Knit fabrics are available in tubular form as well as broadcloth
- Weaves: Fleece, double face, interlock, terry/loops, ribs

## Hakanit® knit fabrics, synthetic and natural fibres

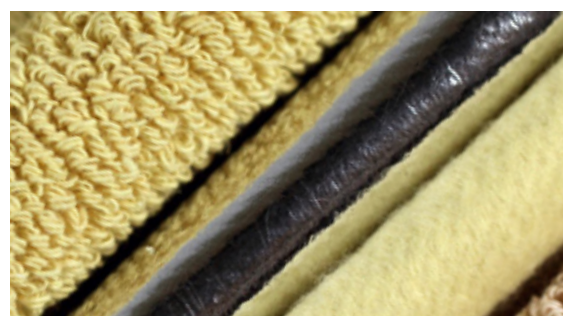
- Fibre types: Cotton, wool, polyacrylic etc.
- Weaves: Fleece, double face, interlock, terry/loops, ribs
- Comfortable to wear
- Good insulating characteristics (heat retention properties)
- Temperature resistant up to approx. 300° C, depending on fibre blend
- Weight: 120-1300 g/m<sup>2</sup>
- Thickness: 0.5-5.0 mm

## Hakanit® knit fabrics, knit cuff material

- Can be supplied in different blends
- Weave: Ribs
- Diameter: approx. 50-80 mm
- Weight: approx. 40-100 g/m
- Thickness: 0.5-1.0 mm
- Temperature resistance: 80 °C to 350 °C, depending on fibre blend
- Comfortable and supple

## Hakanit® knit fabrics finishes

- Laminations on different knit fabrics or constructions are possible
- Lamination of transfer film
- Lamination of aluminised PES and PET foils
- Coating of silicon and PU is possible
- Temperature resistant up to approx. 250°C, depending on fibre blend and finish
- Types of finish: Roughing, (thermal) finish, hydrophobic and oleophobic finish, fire-retarding finish etc.



**TRUST THE EXPERTS!**



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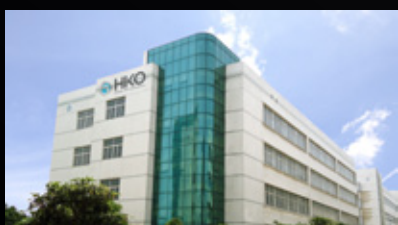
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