

# HENSOTHERM<sup>®</sup> 7 KS Gewebe 1000 E

TECHNICAL DATASHEET / INSTALLATION INSTRUCTIONS Flexible cable bandage for the wrapping of cables and cable support systems to form a fire penetration seal and encapsulation

- Fire resistance class up to EI 120 tested in accordance with EN 1366-3, ETA 22-0125
- Reduces release of fumes, encapsulates toxic combustion gases
- No burning dripping of cable sheaths and insulation
- Suitable for both indoor and protected outdoor installations
- Protective coating only on the inside, outside easy to clean
- No protective film over the coating fast installation, no waste
- Simple, economical solution











### **Product details**

Weight:	1.2 kg/m² 14.4 kg/roll
Installation temperature range:	5°C to 40°C
Temperature resistance:	-40 °C to 80 °C
Initial foaming:	approx +150 °C
Storage and transport:	5°C to +30°C
Application temperature range:	-20°C to 40°C
VOC according to LEED:	< 0.005 mg/m³
Overpaintability:	Yes
Durability:	Use category X (includes all other types)

### Advantages

- Fire resistance tested according to EN 1366-3 up to El 120, see ETA 22/0125
- Possible applications include endless cable wrapping of HENSOTHERM® 7 KS Gewebe for simple trimming with knife or scissors
- No protective film over the coating fast installation, no waste
- Extremely flexible, only 1 mm thick
- For use in conditions exposed to weathering (use category X, includes all other types), resistant to long term exposure to high temperatures, moisture, water immersion, solvents, UV-radiation in indoor and protected outdoor areas
- Fire protection coating on the inside, outside of resistant fibreglass fabric easy to wet-clean
- No pretreatment or cleaning of cable systems necessary prior to wrapping
- Installations with metal strips or wires simplify retrofits and inspections
- No measurements of layer thickness necessary during installation (unlike fire protection coatings)
- Also suitable for confined spaces, tight corners/branches, and restricted accessibility
- Fulfils eco-bau 1 and Minergie-eco requirements
- Nonhazardous material as defined in Germany's hazardous substances ordinance GefStoffV: free of asbestos, lead, mercury, and chromium
- Contains no solvents, silicone, halogens, or plasticisers
- Thermal activation as low as approx 150 °C
- Simple installation and assembly
- Green Product, VOC Emissions Class A+
- Roll contains 12 metre length 1 metre wide



### Fire protection penetration seals



# Fire protection penetration seals of electrical wiring in cable carriers (cable trays)

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Other potential applications as fire protection wrappings for electrical wiring and cable carriers



### Intended use

Buildings, and especially modern residential and office units, house a wide variety of electrical wiring. Many of this wiring's jackets and insulations are combustible, and as a result promote the spread of fire. Also, burning pieces may detach from cable jackets and insulations, and toxic and highly corrosive combustion gases may be released that form poisonous atmospheres and attack and compromise technical equipment and other materials.

**HENSOTHERM® 7 KS Gewebe 1000 E** is an A2 glass filament woven fabric which is coated on one side with the intumescent **HENSOTHERM® 7 KS** fire protection coating. **HENSOTHERM® 7 KS Gewebe 1000 E** is classified according to EN 1366-3 for the temporary or permanent sealing of electrical cables, electrical installation pipes and cable support structures (ETA 22/0125) in order to reinstate the fire safety of solid wall structures that are provided with openings for supply lines.

### Fire protection penetration seals of electrical wiring in cable carriers (cable trays)

**HENSOTHERM® 7 KS Gewebe 1000 E** is classified El 120 according to EN 1366-3 for the temporary or permanent sealing of electrical cables, electrical installation pipes, flexible installation conduits, sleevescable and support structures (see ETA 22/0125 for details) in order to reinstate the fire safety of rigid wall structures that are provided with openings for supply lines for a max fire resistance time of 120 minutes.

Applications				
Fitting	Cables	max Ø [mm]		
	Cables	≤80.0		
	Cable bundles	≤100.0		
	EIP / flexible electrical installation conduits	≤20.0		
	Cable trays	≤400.0		

Technical details	
Assessment / ETA Tested in accordance with	ETA 22/0125 EN 1366-3 testing
Fire resistance classification	EI 120
Construction elements	Rigid (solid) walls
Minimum construction element thickness	In rigid walls: ≥10 cm
Annular gap filling	Gypsum filler



### Fire protection penetration seals of electrical wiring in cable carriers (cable trays)

### 1. Construction details

**Construction element:** The wall must have a minimum thickness of 100 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 650 kg/m<sup>3</sup>. The supporting structure must have been classified for the required fire resistance duration as defined in EN 13501-2.

The annular gap around the cables and support structure is first completely filled with gypsum filler over the entire depth of the construction element from both sides of the wall. At least 500 mm wide strips of the **HENSOTHERM® 7 KS Gewebe 1000 E** are then wrapped aroud the cable carrier (cable tray) from the outside, at joint with the wall, on both sides. The **HENSOTHERM® 7 KS Gewebe 1000 E** must overlap by at least 4 cm at all length and cross joints. On both sides of the wall, the **HENSOTHERM® 7 KS Gewebe 1000 E** wraps are fixed with at least three metal cable ties, straps or galvanised winding wires ( $\geq 0.6$  mm).

Alternatively: Place the ends of HENSOTHERM<sup>®</sup> 7 KS Gewebe 1000 E opposite to each other on the top centre of the cable tray, and secure permanently in place at min 10 cm intervals with clips applied with a stapler or compressed air gun. The distance between the clips and the ends of HENSOTHERM<sup>®</sup> 7 KS Gewebe 1000 E must be no less than 2 cm.

The cable systems must be supported from both sides of the wall at a maximum spacing of 250mm.



### 1.1. Electrical piping, EIP with HENSOTHERM<sup>®</sup> 7 KS Gewebe 1000 E

Piping/ducting	Maximum diameter of each EIP (mm)	Maximum diameter of cable bundle (mm)	Maximum diameter of single cable (mm)	Classification
Electrical wiring on cable trays/carriers up to 400 mm width	-	100	80	EI 120
Electrical wiring in electrical installation pipes (EIP) / flexible conduits on cable trays/carriers up to 400 mm width	20	20	20	EI 120 C/C

### Permitted distances





1: Support structure, a1: Annular gap, a2: Distance between piping/seals

The minimum distance between the conduits (a2) is 0 mm. The annular gap (a1) is nominally 0 mm, whereby the remaining space is filled completely with gypsum plaster over its whole depth. The wiring and cable carriers must be supported from both sides of the wall at a maximum spacing of 250 mm.

Permitted distances between the penetration seals and other apertures or installations:

Other seals:	Minimum distance $\ge$ 20 cm when one or both adjoining apertures are larger than 40 x 40 cm, otherwise $\ge$ 10 cm.
Other apertures or installations:	Minimum distance $\geq 20cm$ when one or both adjoining apertures are larger than 40 x 40 cm, otherwise $\geq 10cm$

#### Retrofits

Subsequent changes to the electrical wiring or cable carriers in the form of retrofits or removals are permitted when wrapped or sealed with **HENSOTHERM® 7 KS Gewebe 1000 E**. When opening the fire protection wrapping, avoid damage to the **HENSOTHERM® 7 KS Gewebe 1000 E**. Damaged sections may have to be replaced. Make sure especially that each section of **HENSOTHERM® 7 KS Gewebe 1000 E** continues to overlap by no less than 4 cm in both directions, and that there are no gaps or abutting joins.

Following a retrofit, the system must be returned to its intended state. The specifications in the ETA / assembly instructions must be observed.

### Use and inspection

The fire protection properties of wrappings and penetration seals with **HENSOTHERM® 7 KS Gewebe 1000 E** are safeguarded over their service lives only when the system is maintained in perfect working order. All subsequently damaged or altered fire wrappings and seals must be reinstated exclusively with **HENSOTHERM® 7 KS Gewebe 1000 E**.

#### Disposal

The substances in **HENSOTHERM® 7 KS Gewebe 1000 E** must be handled like waste paints and varnishes. The applicable national laws and regulations must be observed.

#### Work safety

The use category of **HENSOTHERM® 7 KS Gewebe 1000 E** in relation to BWR 3 (Hygiene, health and environment) is IA1, S/W3. All products must be used in compliance with the pertinent local and national regulations. See the safety data sheet for details!

### Other potential applications as fire protection wrappings for electrical wiring and cable carriers

Fire hazards can be eliminated or reduced when electrical wiring (cabling), cabling systems, and cable carriers (cable trays) are fitted with a flexible wrapping of **HENSOTHERM® 7 KS Gewebe 1000 E**.

**HENSOTHERM® 7 KS Gewebe 1000 E** can be applied here as a full-surface cabling envelope in indoor and protected outdoor installations and can prevent cable fires by reducing the burning rate of cable jackets and insulations. **HENSOTHERM® 7 KS** fire protection coating foams heavily at temperatures above approx 150 °C and seals cavities around the cabling with a fire extinguishing insulant.

Complete wrapping of electrical wiring (cabling), cable systems, and cable carriers (cable trays) with **HENSOTHERM® 7 KS Gewebe 1000 E** can also reduce the release of toxic fumes, which are encapsulated instead.

Electrical wiring (single and cable bundle) without cable carriers (cable trays)



- 1. Use a knife or scissors to cut **HENSOTHERM® 7 KS Gewebe 1000 E** to the required width and length. IMPORTANT! Allow for at least 4 cm of overlap and any additions for subsequent installations!
- 2. The single or cable bundle or wiring/flexible pipes must be wrapped completely with the uncoated (white) side on the outside and the coated (grey black) side on the inside. Each section of **HENSOTHERM® 7 KS Gewebe 1000 E** must overlap by at least 4 cm in both directions.
- 3. Secure the **HENSOTHERM®** 7 KS Gewebe 1000 E wraps in place with metal cable ties, straps, or galvanised winding wires (≥ 0.6 mm) at intervals no less than 40 cm. **HENSOTHERM®** 7 KS Gewebe 1000 E must be wound so tightly around the single or cable bundle and, if necessary, secured in place with additional strapping that there are no gaps or abutting joins, particularly at connectors, branches, tight corners, suspensions, or fasteners.

**Optionally:** Place the ends of **HENSOTHERM® 7 KS Gewebe 1000 E** opposite to each other on each side, and secure permanently in place at min 10 cm intervals with clips applied with a stapler or compressed air gun. The distance between the clips and the ends of **HENSOTHERM® 7 KS Gewebe 1000 E** must be no less than 2 cm.

**Optionally:** In the case of single sided covers on electrical wiring routed on solid mineral substrates, **HENSOTHERM® 7 KS Gewebe 1000 E** may also be secured to walls and floors with metal rails and bolts.

Electrical wiring in cable carriers (cable trays), installation prior to routing



Prior planning may also install HENSOTHERM® 7 KS Gewebe 1000 E even before the wiring is routed.

- 1. Optionally: Insert metal cable ties, straps, or galvanised winding wires (≥ 0.6 mm) at intervals ≤ 40 cm in the cable tray.
- 2. Use a knife or scissors to cut **HENSOTHERM® 7 KS Gewebe 1000 E** to the required width and length. IMPORTANT! Allow for at least 4 cm of overlap and any additions for subsequent installations!
- 3. With the uncoated (white) side on the outside and the coated (grey black) side on the inside, place **HENSOTHERM® 7 KS Gewebe 1000 E** on the wiring in the cable tray, or slide it under wiring that has been routed previously. Each section of **HENSOTHERM® 7 KS Gewebe 1000 E** must overlap by at least 4 cm in both directions.
- 4. Route the wiring, making sure to preserve the overlaps in **HENSOTHERM® 7 KS Gewebe 1000 E**.
- 5. Secure the **HENSOTHERM®** 7 KS Gewebe 1000 E wraps in place with metal cable ties, straps, or galvanised winding wires (≥ 0.6 mm) at intervals no less than 40 cm. **HENSOTHERM®** 7 KS Gewebe 1000 E must be wound so tightly around the single or cable bundle and, if necessary, secured in place with additional strapping that there are no gaps or abutting joins, particularly at connectors, branches, tight corners, suspensions, or fasteners.

**Optionally:** Place the ends of **HENSOTHERM® 7 KS Gewebe 1000 E** opposite to each other on the top centre of the wiring, and secure permanently in place at min 10 cm intervals with clips applied with a stapler or compressed air gun. The distance between the clips and the ends of **HENSOTHERM® 7 KS Gewebe 1000 E** must be no less than 2 cm.





Electrical wiring in cable carriers (cable trays), installation after routing, complete wrapping



- 1. Use a knife or scissors to cut **HENSOTHERM® 7 KS Gewebe 1000 E** to the required width and length. IMPORTANT! Allow for at least 4 cm of overlap and any additions for subsequent installations!
- 2. With the uncoated (white) side on the outside and the coated (grey black) side on the inside, wind **HENSOTHERM® 7 KS Gewebe 1000 E** around the cable trays. Each section of **HENSOTHERM® 7 KS Gewebe 1000 E** must overlap by at least 4 cm in both directions. Rule of thumb for cuts: 2 x width cm + 2 x height cm of cable tray + min 4 cm overlap.
- 3. In the event of only a small number of cables giving rise to distances ≥ 4 cm between the wiring and wrapping, an additional layer of **HENSOTHERM® 7 KS Gewebe 1000 E** must be placed on the wiring over the whole width of the cable tray.





4. Secure the **HENSOTHERM® 7 KS Gewebe 1000 E** wraps in place with metal cable ties, straps, or galvanised winding wires (≥ 0.6 mm) at intervals no less than 40 cm. **HENSOTHERM® 7 KS Gewebe 1000 E** must be wound so tightly around the cable trays — and, if necessary, secured in place with additional strapping — that there are no gaps or abutting joins, particularly at connectors, branches, tight corners, suspensions, or fasteners.

**Optionally:** Place the ends of **HENSOTHERM® 7 KS Gewebe 1000 E** opposite to each other on the top centre of the cable tray, and secure permanently in place at min 10 cm intervals with clips applied with a stapler or compressed air gun. The distance between the clips and the ends of **HENSOTHERM® 7 KS Gewebe 1000 E** must be no less than 2 cm.

Electrical wiring in cable carriers (cable trays) installed with side arm, installation after routing, complete wrapping



- 1. In the case of electrical wiring in vertical cable systems (riser lines), strips at least 10 cm wide of **HENSOTHERM<sup>®</sup> 7 KS Gewebe 1000 E** are first made with scissors or a knife, and their sides cut to receive the cable clips and profile rails. The strips are secured in place with metal strapping or galvanised winding wire (≥ 0.6 mm).
- 2. Afterwards, use a knife or scissors to cut **HENSOTHERM® 7 KS Gewebe 1000 E** to the required width and length. IMPORTANT! Allow for at least 4 cm of overlap on all strips and any additions for subsequent installations!
- 3. With the uncoated (white) side on the outside and the coated (grey black) side on the inside, wind **HENSOTHERM® 7 KS Gewebe 1000 E** around the whole cable tray or wiring. Each section of **HENSOTHERM® 7 KS Gewebe 1000 E** must overlap by at least 4 cm in both directions. Rule of thumb for cuts: 2 x width cm + 2 x height cm of cable tray + min 4 cm overlap.
- 4. In the event of only a small number of cables giving rise to distances ≥ 4 cm between the wiring and wrapping, an additional layer of **HENSOTHERM® 7 KS Gewebe 1000 E** must be placed on the wiring over the whole width of the cable tray.



5. Secure the **HENSOTHERM®** 7 KS Gewebe 1000 E wraps in place with metal cable ties, straps, or galvanised winding wires (≥ 0.6 mm) at intervals no less than 40 cm. **HENSOTHERM®** 7 KS Gewebe 1000 E must be wound so tightly around the cable trays or wiring — and, if necessary, secured in place with additional strapping — that there are no gaps or abutting joins, particularly at connectors, branches, tight corners, suspensions, or fasteners.

**Optionally:** Place the ends of **HENSOTHERM® 7 KS Gewebe 1000 E** opposite to each other on the top centre of the cable tray, and secure permanently in place at min 10 cm intervals with clips applied with a stapler or compressed air gun. The distance between the clips and the ends of **HENSOTHERM® 7 KS Gewebe 1000 E** must be no less than 2 cm.

### Electrical wiring in riser lines



- 1. In the case of electrical wiring in vertical cable systems (riser lines), strips at least 10 cm wide of **HENSOTHERM® 7 KS Gewebe 1000 E** are first made with scissors or a knife, and their sides cut so as to receive the cable clips and profile rails. The strips are secured in place with metal strapping or galvanised winding wire (≥ 0.6 mm).
- 2. Afterwards, use a knife or scissors to cut **HENSOTHERM® 7 KS Gewebe 1000 E** to the required width and length. IMPORTANT! Allow for at least 4 cm of overlap on all strips and any additions for subsequent installations!
- 3. With the uncoated (white) side on the outside and the coated (grey black) side on the inside, wind **HENSOTHERM® 7 KS Gewebe 1000 E** around the whole cable tray or wiring. Each section of **HENSOTHERM® 7 KS Gewebe 1000 E** must overlap by at least 4 cm in both directions. Rule of thumb for cuts: 2 x width cm + 2 x height cm of cable tray + min 4 cm overlap.
- 4. In the event of only a small number of cables giving rise to distances ≥ 4 cm between the wiring and wrapping, an additional layer of **HENSOTHERM® 7 KS Gewebe 1000 E** must be placed on the wiring over the whole width of the cable tray.



5. Secure the **HENSOTHERM®** 7 KS Gewebe 1000 E wraps in place with metal cable ties, straps, or galvanised winding wires (≥ 0.6 mm) at intervals no less than 40 cm. **HENSOTHERM®** 7 KS Gewebe 1000 E must be wound so tightly around the cable trays or wiring — and, if necessary, secured in place with additional strapping — that there are no gaps or abutting joins, particularly at connectors, branches, tight corners, suspensions, or fasteners.

**Optionally:** Place the ends of **HENSOTHERM® 7 KS Gewebe 1000 E** opposite to each other on the top centre of the cable tray, and secure permanently in place at min 10 cm intervals with clips applied with a stapler or compressed air gun. The distance between the clips and the ends of **HENSOTHERM® 7 KS Gewebe 1000 E** must be no less than 2 cm. Electrical wiring in riser lines

Our technical advisers will be pleased to assist you with your enquiries. Further details can be downloaded from: **www.rudolf-hensel.de** 

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