



HENSOTHERM® Service Transit Ready-to-use fire seal for wiring

HENSOTHERM® Service Transit is an easy-to-install, preassembled fire seal solution designed to carry single and bundled electrical wiring with or without PVC ducts, at the same time reinstating the fire-protection properties of flexible and solid wall structures.

- Fire resistance class up to EI 180 tested in accordance with EN 1366-3 (ETA 22-0542)
- Fast, frictional installations possible without annular gap seal
- For single and bundled wiring with or without PVC ducts (EIR)
- Easy retrofits, up to 100% utilisation of internal cross section
- Environmentally and user friendly, low emissions



TECHNICAL INFORMATION





Intended use

Buildings, and especially modern residential and office units, house a wide variety of electrical wiring. **HENSOTHERM® Service Transit** (or **HENSOTHERM® ST** for short) is an easy-to-install, preassembled fire seal that has been tested up to EN 1366-3 class EI 180 and is designed to reinstate the fire-protection properties of flexible and solid walls and floors penetrated by wiring with or without PVC ducts. **HENSOTHERM® Service Transit** can also serve as a transitional solution in the construction phase or as an empty or reserve seal for later installations.

HENSOTHERM® Service Transit consists of a high-density, tearproof plastic duct lined with graphite-based intumescent **HENSOTHERM® 7 KS Gewebe**. This lining expands under the action of heat from a fire to seal cavities around the routed wiring and ducts. In addition, a ceramic wool plug (Superwool® Plus Blanket 12 kg/m³, 25 mm) prevents the passage of cold smoke and gases.

HENSOTHERM® Service Transit may not be cut to or along its length when being installed, except when installed in minimum 150 mm thick rigid walls. See page 3 for applicable types and classification.

HENSOTHERM® Service Transit is designed for both indoor and outdoor applications sheltered from the rain (usage category X, weather-resistant) with virtually identical fire-protection properties. Category X compliant products also fulfil the requirements applying to all other classes Y₁, Y₂, Z₁, and Z₂.

Compatible service lines		max Ø
	Single cables	≤21 mm
	Cable bundles	≤90 mm
	Rigid ducts (EIR) of PVC, single, with/without cables ≤21 mm	≤32 mm
	Rigid ducts (EIR) of PVC, bundled, with / without cables ≤32 mm	≤90 mm

Applications of HENSOTHERM® ST 250 mm length

Compatible structural elements HENSOTHERM® ST 250	Thickness
Flexible or rigid wall (≥ 650 kg/m ³)	≥ 100 mm
Rigid floor (≥ 650 kg/m ³)	≥ 150 mm

Applications of HENSOTHERM® ST 400 mm length

Compatible structural elements HENSOTHERM® ST 400	Thickness
Rigid floor (≥ 650 kg/m ³)	≥ 200 mm

Product image	Product name	Diameter / length	Container / packaging size	Article number / EAN
	HENSOTHERM® ST 250-63	D: 63 mm L: 250 mm	24 ×	4250153545507
	HENSOTHERM® ST 250-90	D: 90 mm L: 250 mm	12 ×	4250153545514
	HENSOTHERM® ST 250-110	D: 110 mm L: 250 mm	9 ×	4250153545521
	HENSOTHERM® ST 400-63	D: 63 mm L: 400 mm	36 ×	4250153545538
	HENSOTHERM® ST 400-90	D: 90 mm L: 400 mm	16 ×	4250153545545
	HENSOTHERM® ST 400-110	D: 110 mm L: 400 mm	9 ×	4250153545552
	HENSOMASTIK® Acrylic		310 ml cartridge box of 20 ×	4250153545903

TECHNICAL INFORMATION

Classification											
Type	Construction element	Variant installation / routed service lines	Empty			Single cables ≤ 21 mm or bundles thereof			PVC ducts ≤ 32 mm with cables ≤ 21 mm		PVC ducts ≤ 32 mm empty / without cables
			63 mm	90 mm	110 mm	63 mm	90 mm	110 mm	63 mm	110 mm	
HENSOTHERM® ST length 250 mm	Flexible wall ≥ 100 mm	Friction fitted, without annular gap	EI 120	EI 120	EI 120	EI 60	EI 90	EI 90	EI 60	EI 90	EI 90
			EI 90	EI 90	EI 90	EI 90	EI 90	EI 90	EI 90	EI 90	EI 90
			EI 120	EI 120	EI 120	EI 60	EI 90	EI 90	EI 60	EI 90	EI 90
	Rigid wall ≥ 100 mm	Annular gap filled with HENSOMASTIK® Acrylic, min 12.5 mm deep with rock wool backfill min 12.5 mm deep	EI 90	EI 90	EI 90	EI 90	EI 90	EI 90	EI 90	EI 90	EI 90
			EI 120	EI 120	EI 120	EI 60	EI 90	EI 90	EI 60	EI 90	EI 90
			EI 90	EI 90	EI 90	EI 90	EI 90	EI 90	EI 90	EI 90	EI 90
Rigid wall ≥ 150 mm	Cut < 10 mm width along the length for post-installation, friction fitted, without annular gap	-	-	-	-	EI 90	EI 90	-	EI 90	-	
		EI 180	EI 180	EI 180	EI 180	EI 180	EI 180	EI 180	EI 180	EI 180	
		EI 180	EI 180	EI 180	EI 180	EI 180	EI 180	EI 120	EI 120	EI 180	
Rigid floor ≥ 150 mm	Friction fitted, without annular gap	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	
		EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	
		EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	
HENSOTHERM® ST length 400 mm	Rigid floor ≥ 200 mm	Friction fitted, without annular gap	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	
			EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	EI 120	

TECHNICAL INFORMATION

Environmental and emissions data

HENSOTHERM® Service Transit and its intumescent lining of **HENSOTHERM® 7 KS Gewebe** have been tested for their low emissions, their environmental and user friendliness, and their compliance with most of the pertinent rules and regulations applying to building materials.

Rules and regulations	Assessment
VOC regulation (France)	Class A
CMR constituents (France)	Compliant
DIBt ABG/AgBB guidelines	Compliant
LEED v4.1 (USA)	Compliant
Emissions class for construction products (Finland)	M1
Minergie (A/P) Eco, ecobau (Switzerland)	eco1
Airborne sound insulation (type ST 400-90)	$R_{w,max} - 66$ dB

Join	Emissions rate after 3 days	Emissions rate after 28 days
TVOC	$\leq 5 \mu\text{g}/\text{m}^3$	$\leq 5 \mu\text{g}/\text{m}^3$
TSVOC	$\leq 5 \mu\text{g}/\text{m}^3$	$\leq 5 \mu\text{g}/\text{m}^3$
Hp value	0	0.01
Carcinogens	No ($< 1 \mu\text{g}/\text{m}^3$)	No ($< 1 \mu\text{g}/\text{m}^3$)

Retrofits

Following its installation, **HENSOTHERM® Service Transit** can take additional lines. After this retrofit work, the penetration seal must be reinstated in its original functional state. This must comply with the specifications in the Technical Assessment (ETA) and the installation instructions. The ceramic wool plug must be removed and its length adjusted to the diameter of the routed service lines. It can then be reinserted at the centre of **HENSOTHERM® Service Transit** where it can seal the cavities around the lines effectively against smoke.

If the routed service lines have also been removed, either a new and complete or unshortened ceramic wool plug (Superwool® Plus Blanket 128 kg/m³, 25 mm) must be installed or the entire **HENSOTHERM® Service Transit** seal replaced.

Inspection and maintenance

The penetration seal's fire-protection properties provided by **HENSOTHERM® Service Transit** are retained over the whole service life only when the system is maintained in proper working order. Recommended therefore are regular inspections and examinations of potential damage. Penetration seals that have been damaged or otherwise changed following their installation may be reinstated exclusively with original **HENSOTHERM® Service Transit** components. The user or the company that installed the product is obliged to refer the developer or commissioning party thereto.

Reuse

HENSOTHERM® Service Transit can be reused, also more than once, when it and its intumescent lining of **HENSOTHERM® 7 KS Gewebe** is undamaged. Specifically, **HENSOTHERM® Service Transit** may not be cut to or along its length when being removed. When the seal is being refitted, it must be reinstated in its original functional state. This may require a new and complete or unshortened ceramic wool plug (Superwool® Plus Blanket 128 kg/m³, 25 mm). This must comply with the specifications in the Technical Assessment (ETA 22/0542) and the installation instructions.

Disposal

HENSOTHERM® Service Transit, including the annular-gap sealant **HENSOMASTIK® Acrylic**, must be introduced to disposal processes for paints and coatings. The national laws and regulations must be observed.

Labelling

Every **HENSOTHERM® Service Transit** seal is shipped with two self-adhesive labels pointing out that the ceramic wool plug must be reinserted after every removal. Affix these directly to both sides of the fire-protection seal.

Under the laws of Germany and Switzerland, a notice must be affixed permanently to the wall or floor in the direct vicinity of the freshly installed penetration seal. This notice must name the product system and the fitter responsible. This notice is also recommended urgently for other countries. Subsequent companies can then consult this for the products used and potential sources of information.



Work safety

HENSOTHERM® Service Transit and **HENSOMASTIK® Acrylic** must be applied and used in compliance with the pertinent local and national legislation. Giscode: M-DF01

TECHNICAL INFORMATION

Permissible supporting construction elements

The supporting construction element must be classified for the required fire resistance duration in accordance with EN 13501-2.

The specific structural elements that can support a **HENSOTHERM® ST 250 (length 250 mm)** penetration seal are:

1. Flexible walls: The wall must have a minimum thickness of 100 mm and consist of a wood or steel strut frame lined on both sides with at least two layers of 12.5 mm thick gypsum plasterboard type F, EN 520. There must be a minimum distance of 100 mm between the seal and the supports, and this gap must be filled with at least 100 mm of Class A1 or A2 insulating material (as defined in EN 13501/-1).

2. Rigid walls: The wall must have a minimum thickness of 100 mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m³.

3. Rigid floors: The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m³.

The specific structural elements that can support a **HENSOTHERM® ST 400 (length 400 mm)** penetration seal are:

1. Rigid floors: The floor must have a minimum thickness of 200 mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m³.

Maximum seal size

For single routings that do not form a frictional connection in the supporting construction element, the width of the annular gap must be 10–20 mm. This and the diameter of the **HENSOTHERM® Service Transit** used then determine the maximum seal size.

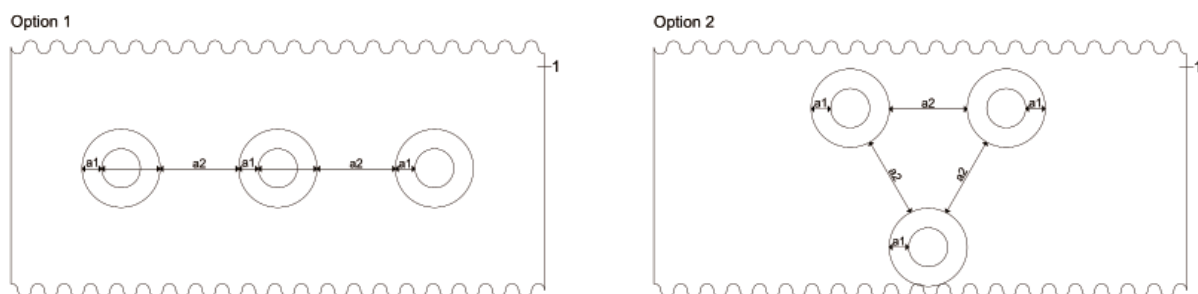
Larger and/or angled penetrations may be filled with **cement mortar MG III** to the depth of the component. The installed **HENSOTHERM® Service Transit** then forms a frictional connection. The minimum distances between the fire seal and other apertures or installations must be observed.

HENSOTHERM® Service Transit may be occupied to 100 % of its internal cross section (applying to all types, diameters, and lengths).

Permitted distances and first support

All service lines must be supported at maximum 250 mm away from both faces of the wall constructions or from the upper face of floor constructions. Only one **HENSOTHERM® Service Transit** may be installed per penetration.

Permitted distances between the fire seal and other apertures or installations:



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

Other fire seals:	≥ 20 cm when one or both adjoining apertures are larger than 40 × 40 cm, otherwise ≥ 10 cm.
Other apertures or installations:	≥ 20 cm when one or both adjoining apertures are larger than 20 × 20 cm, otherwise ≥ 10 cm.

TECHNICAL INFORMATION

Construction details: Frictional, without annular gap

In flexible and solid walls and floors, **HENSOTHERM® Service Transit** can be inserted into a core drilled hole to form a positive connection. The two diameters must coincide. In other words, there must be no annular gap between the **HENSOTHERM® Service Transit** and the supporting structural element. **HENSOTHERM® Service Transit** is centred in the wall or floor so that it projects equally from both sides and its type label is visible.

When an annular gap is filled with **cement mortar MG III** to the full depth of the component, the next lower fire resistance class may apply to this variant installation with annular gap and **HENSOMASTIK® Acrylic** seal.



INSTALLATION OF SERVICE LINES:

Single cables may be routed through the centre or between any two plies of ceramic wool in **HENSOTHERM® Service Transit** or through a pierced hole. The ceramic wool may not be pushed out or displaced in the process. In the case of thicker wiring, PVC wiring ducts, or bundled wiring, the ceramic wool plug is pressed out from the centre with a blunt object, e.g. a folding rule or screwdriver handle, and carefully rolled apart. The length of the ceramic wool (Superwool® Plus Blanket 128 kg/m³, 25 mm) is adjusted to the diameter of the routed service lines, wrapped around these lines, and either inserted and recentred in **HENSOTHERM® Service Transit** or subsequently pressed in to seal the cavities around the service lines.

HENSOTHERM® Service Transit may be occupied to 100% of its internal cross section:

HENSOTHERM® Service Transit, type	ST 250-63 ST 400-63	ST 250-90 ST 400-90	ST 250-110 ST 400-110
Internal diameter / maximum occupation	approx 50 mm	approx 75 mm	approx 90 mm



TECHNICAL INFORMATION

Construction details: Annular gap filled with HENSOMASTIK® Acrylic

In flexible and solid walls and floors, the penetration seal with **HENSOTHERM® Service Transit** can be inserted into a core drilled hole of matching diameter and with an annular gap width of 10–20 mm. **HENSOTHERM® Service Transit** is centred in the wall or floor so that it projects equally from both sides and its type label is visible. The annular gap is first backfilled with loose stone wool ($\geq 40 \text{ kg/m}^3$). This defines the filling depth and prevents slippage and falling out. The filling depth must correspond at least to the following table of values.

Structural element	HENSOMASTIK® Acrylic filling depth	Stone wool insulation filling depth
Flexible or rigid walls 100 mm:	$\geq 12.5 \text{ mm}$	$\geq 12.5 \text{ mm}$
Rigid walls > 100 mm:	$\geq 15 \text{ mm}$	$\geq 25 \text{ mm}$
Rigid floors $\geq 150 \text{ mm}$:	$\geq 25 \text{ mm}$	$\geq 25 \text{ mm}$

Now **HENSOMASTIK® Acrylic** is applied on both sides to the requisite filling depth, flush with the wall or floor, and smoothed with a trowel. Once fully cured, **HENSOMASTIK® Acrylic** can be overcoated with most of the usual emulsion paints or acrylic resins.

Wool stuffing is unnecessary when the filling with **HENSOMASTIK® Acrylic** reaches to a correspondingly greater or to the full component depth. An annular gap < 10 mm must always be filled completely with **HENSOMASTIK® Acrylic**. In each of these cases, the next-lower fire-resistance class may apply to this variant frictional installation without annular gap filled with **HENSOMASTIK® Acrylic**.

Service lines are routed and retrofitted as described on page 6.



Please direct any questions to our Technical Support Team

The full product documentation and further details can be downloaded from our website at www.rudolf-hensel.de.

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