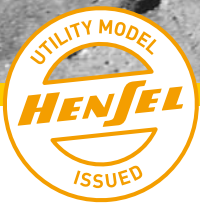


**HENSJEL**

FIRE PROTECTION SYSTEMS




## **HENSOTHERM® System für Schachtwand Fire protection solution for rigid shaft walls of cellular concrete $\geq 70$ mm**

TECHNICAL DATA SHEET / ASSEMBLY INSTRUCTIONS

Penetration seals for combustible, incombustible, and composite aluminium piping and electric wiring in flexible wiring pipes (EIR).

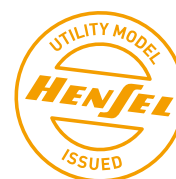
- Complete system for heating, sanitary, and electrical installations
- Simple, economical solution
- Fire resistance class up to EI 180 tested in accordance with EN 1366-3
- Registered design in Austria (AT16156U1) and other countries

# TECHNICAL INFORMATION

Applications		
Fitting	Cables	max Ø [mm]
	Cables	≤21.0
	Bundled cables	≤50.0
	EIR / flexible pipes   single	≤63.0
	Combustible pipes	≤ 75.0
	Composite aluminium pipes with PE or synthetic rubber insulation (FEF)	≤ 32.0 [PE] ≤ 32.0 [FEF]

## Advantages

- Fire resistance EN 1366-3 tested up to EI 180
- Endless pipe collar of HENSOTHERM® 7 KS Gewebe 100, simple trimming with blade/shears
- HENSOTHERM® 7 KS viskos from cartridge
- Suitable for most customary paint coatings when fully cured
- Suitable for installations in restricted spaces and with restricted access on one side
- Zero-gap pipe routing directly on the floor
- Additional design variants in drywall shafts of single planks (technical data sheet and assembly instructions available separately)
- Fulfills eco-bau 1 and Minergie-eco requirements
- 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+
- Registered design



## Piping with HENSOTHERM® 7 KS Gewebe 100



Combustible pipes of plastic

Page 5

## Piping with HENSOTHERM® 7 KS viskos



Composite aluminium pipes

Page 6

## Cabling and EIR / flexible piping with HENSOTHERM® 7 KS viskos





Electrical piping, EIR

Page 7

# TECHNICAL INFORMATION

System products listed separately

	Product	EAN	Packaging
	HENSOTHERM® 7 KS viskos	4250153511014	310 ml cartridge 20 x cartridge/carton
	HENSOTHERM® 7 KS viskos	4250153511038	600 ml tubular bag 12 x tube/carton
	HENSOTHERM® 7 KS Gewebe 100	4250153511090	Roll 10 m, width 100 mm, thickness 1 mm

## Intended use

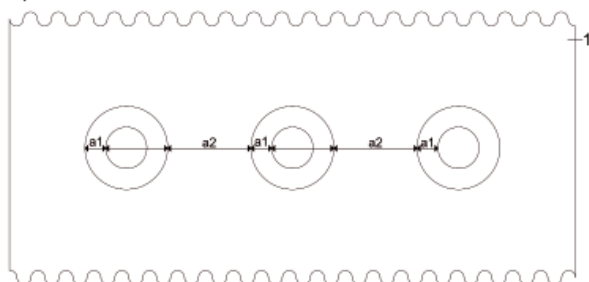
**HENSOTHERM® System für Schachtwand** (ETA 20/1307) presents fire protection solutions for indoor rigid shaft walls of cellular concrete  $\geq 70$  mm and is designed for the penetration sealing of combustible, incombustible, and composite aluminium pipes and electrical piping with **HENSOTHERM® 7 KS viskos** from cartridges or **HENSOTHERM® 7 KS Gewebe 100** with plaster-filled annular gap (EN 1366-3).

## Approved structural elements

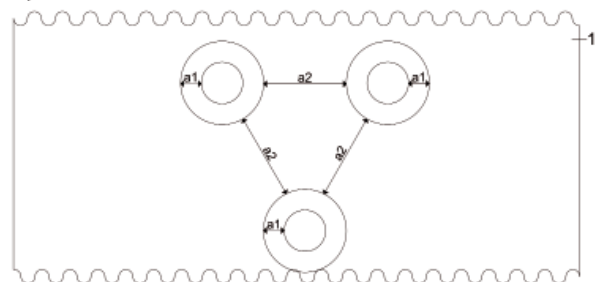
The specific design elements that can be treated with **HENSOTHERM® System für Schachtwand** are rigid, cellular concrete (shaft) walls with a minimum thickness of 70 mm and a minimum density of 625 kg/m<sup>3</sup> (EN 1366-3). The supporting structure must have been classified for the required fire resistance duration as defined in EN 13501-2. Technical data sheets with assembly instructions are available for additional design variants in drywall shafts of single planks.

## Permitted distances

Option 1



Option 2



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

The minimum distance between the piping (a2) varies from application to application. The nominal width of the annular gap (a1) is 0 or 20 mm, with the remaining space filled as described for the application. In some applications, the piping may be routed at zero distance (0 mm) from the floor. When not lying on the floor, the piping 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  $\geq 20$  cm when one or both adjoining apertures are larger than 40 x 40 cm, otherwise  $\geq 10$  cm.

### Other apertures or installations:

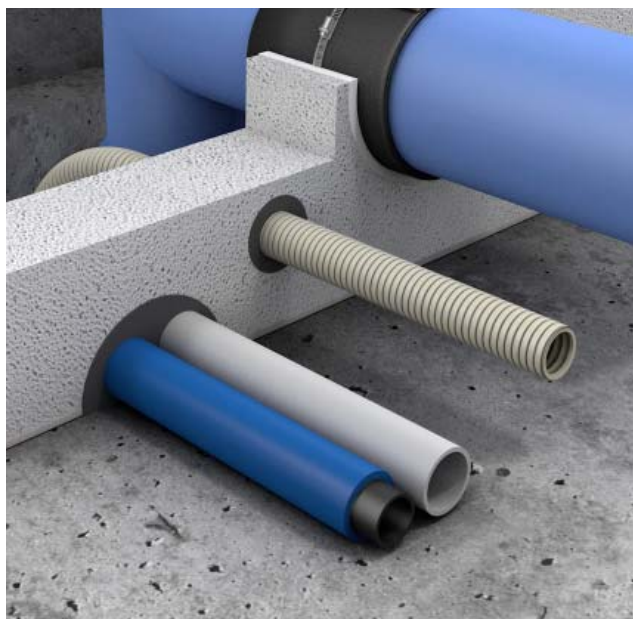
Minimum distance  $\geq 20$  cm when one or both adjoining apertures are larger than 40 x 40 cm, otherwise  $\geq 10$  cm.



## TECHNICAL INFORMATION

### Penetration seal with HENSOTHERM® 7 KS viskos

The annular gap is filled completely with **HENSOTHERM® 7 KS viskos**. The piping may be routed with zero spacing and directly on the floor. The design is also suitable for couplers when the application specifies this. Further details can be taken from the affected application's specifications given on the following pages.



#### Product characteristics of HENSOTHERM® 7 KS viskos

Density:	approx 1.3 g/cm <sup>3</sup>
Application temperature:	5 °C to 40 °C
Temperature resistance:	-40 °C to +140 °C
Drying time:	1 mm/day
Initial foaming:	approx +150 °C
Max total deformation:	10 %
DIN 4102 P1 building material class:	B2
Shelf life (at + 20 °C in dry environment):	12 months
Storage and transport:	5 °C to +30 °C
VOC according to LEED:	< 1 g/l
Application temperature range:	5 °C to 40 °C
Overcoatability:	Yes

### Penetration seals with HENSOTHERM® 7 KS Gewebe 100

The pipe or insulation is wrapped with the appropriate number of plies (see table) from a roll of **HENSOTHERM® 7 KS Gewebe 100** (with the batch number appearing on the outer side), aligned to the centre of the wall, and secured in place with a steel hose clip. The remaining annular gap is filled completely with plaster. **HENSOTHERM® 7 KS Gewebe 100** may be wound on a coupler when the application specifies this. Further details can be taken from the affected application's specifications given on the following pages.



# TECHNICAL INFORMATION

## Rigid structural walls 70 mm / Combustible piping with HENSOTHERM® 7 KS Gewebe 100

### 1. Construction details

**Structural element:** The wall must be at least 70 mm thick and be of cellular concrete with a minimum density of 625 kg/m<sup>3</sup> (EN 1366-3). The supporting structure must have been classified for the required fire resistance duration as defined in EN 13501-2.

**Penetration Seal:** Combustible pipes of plastic, also in conjunction with an in-wall coupler, wound with a length of HENSOTHERM® 7 KS Gewebe 100, centred in the wall, and secured with a steel hose clip. Minimum distance between the seals (a2) = 100 mm, annular gap (a1) nominally 0 mm, and any remaining space filled completely with plaster. Piping may be routed at 0 mm distance from the floor.

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



#### 1.1. Combustible piping with HENSOTHERM® 7 KS Gewebe 100

Piping/ducting	Diameter [mm]	Wall thickness [mm]	Annular gap [mm]	HENSOTHERM® 7 KS Gewebe 100 plies	Classification
Geberit Silent-PP	≤ 50	2.0	0–20	3	EI 120 U/U
Geberit Silent-PP	≤ 75	2.6	0–20	4	EI 120 U/U
Geberit Silent-Pro	≤ 50	3.0	0–20	3	EI 120 U/U
Geberit Silent-Pro	≤ 75	3.8	0–20	4	EI 180 U/U
Geberit Silent-Pro	≤ 110	4.5	0–20	6	EI 120 U/U
Pipelife MASTER 3 PLUS	≤ 50	2.0	0–20	3	EI 180 U/U
Pipelife MASTER 3 PLUS	≤ 75	2.1	0–20	4	EI 180 U/U
POLO-KAL NG	≤ 50	2.0	0–20	3	EI 120 U/U
POLO-KAL NG	≤ 75	2.6	0–20	4	EI 120 U/U
POLO-KAL NG	≤ 110	3.4	0–20	6	EI 120 U/U
POLO-KAL XS	≤ 50	2.0	0–20	4	EI 120 U/U
POLO-KAL XS	≤ 75	2.6	0–20	6	EI 120 U/U
POLO-KAL XS	≤ 110	3.4	0–20	6	EI 120 U/U
Rehau RAUPIANO PLUS	≤ 50	1.8	0–20	3	EI 180 U/U
Rehau RAUPIANO PLUS	≤ 75	1.9	0–20	4	EI 120 U/U
Rehau RAUPIANO PLUS	≤ 110	2.7	0–20	6	EI 120 U/U



**IMPORTANT** Test report nos. 2019-Efectis-R000938 and 2019-Efectis-R001682 list positive findings for the design of the fire seal, and an application has been filed for the supplement to ETA 20-1307.

# TECHNICAL INFORMATION

## Rigid structural walls 70 mm / Composite aluminium pipes with HENSOTHERM® 7 KS viskos

### 2. Construction details

**Structural element:** The wall must be at least 70 mm thick and be of cellular concrete with a minimum density of 625 kg/m<sup>3</sup> (EN 1366-3). The supporting structure must have been classified for the required fire resistance duration as defined in EN 13501-2.

**Penetration Seal:** Composite aluminium pipes with or without unbroken PE insulation. Minimum distance between seals (a<sub>2</sub>) = 0 mm; the annular gap filled completely with HENSOTHERM® 7 KS viskos. Piping may be routed at 0 mm distance from the floor.

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



#### 2.1. Composite aluminium pipes with HENSOTHERM® 7 KS viskos

Piping/ducting	Diameter [mm]	Wall thickness [mm]	Annular gap [mm]	Insulation (CS)	Classification
Frauenthal ALVA ACTA SIS	≤ 16	2.0	10–20	—	EI 120 U/C
Frauenthal ALVA ACTA SIS	≤ 32	3.0	10–20	—	EI 120 U/C
Geberit Mepla	≤ 26	3.0	10–20	9 mm PE	EI 180 U/C
Geberit Mepla	≤ 32	3.0	10–20	9 mm PE	EI 120 U/C
HakaGerodur HAKATHEN	≤ 16	2.0	10–20	—	EI 120 U/C
HakaGerodur HAKATHEN	≤ 32	3.0	10–20	—	EI 120 U/C
HERZ composite pipe PE-RT	≤ 16	2.0	10–20	—	EI 120 U/C
HERZ composite pipe PE-RT	≤ 32	3.0	10–20	—	EI 120 U/C
HERZ R+F PLANO	≤ 16	2.0	10–20	—	EI 120 U/C
HERZ R+F PLANO	≤ 32	3.0	10–20	—	EI 120 U/C
Pipelife RADOPRESS	≤ 16	2.0	10–20	—	EI 120 U/C
Pipelife RADOPRESS	≤ 32	3.0	10–20	—	EI 120 U/C
TECEflex	≤ 17	2.75	10–20	—	EI 120 U/C
TECEflex	≤ 32	4.0	10–20	—	EI 120 U/C
Winkler MT composite pipe	≤ 16	2.0	10–20	—	EI 120 U/C
Winkler MT composite pipe	≤ 32	3.0	10–20	—	EI 120 U/C



**IMPORTANT** Test report nos. 2019-Efectis-R000938 and 2019-Efectis-R001682 list positive findings for the design of the fire seal, and an application has been filed for the supplement to ETA 20-1307.

# TECHNICAL INFORMATION

## Rigid structural walls 70 mm / Electrical piping, EIR with HENSOTHERM® 7 KS viskos

### 3. Construction details

**Structural element:** The wall must be at least 70 mm thick and be of cellular concrete with a minimum density of 625 kg/m³ (EN 1366-3). The supporting structure must have been classified for the required fire resistance duration as defined in EN 13501-2.

**Penetration Seal:** Flexible wiring pipes (EIR) with and without single or bundled cables. Minimum distance between seals (a2) = 50 mm; the annular gap filled completely with HENSOTHERM® 7 KS viskos. Piping may be routed at 0 mm distance from the floor.

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



#### 3.1. Electrical piping, EIR with HENSOTHERM® 7 KS viskos

Piping/ducting	Maximum diameter of each EIR [mm]	Maximum diameter of bundled cables [mm]	Maximum diameter of single cable [mm]	Annular gap [mm]	Classification
Flexible wiring pipe (EIR) with/without (bundled) cables	63	50	21	0 – 20	EI 90 C/C *



**IMPORTANT** Test report no. 2019-Efectis-R000938 lists positive findings for the design of the fire seal, and an application has been filed for the supplement to ETA 20-1307.



## Notes

### Retrofits

Subsequent modifications may be made to piping sealed with **HENSOTHERM® System für Schachtwand**. 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 penetration seals with **HENSOTHERM® System für Schachtwand** products and product systems are safeguarded over their service lives only when the system is maintained in perfect working order. All subsequently damaged or altered fire seals on piping must be reinstated exclusively with **HENSOTHERM® System für Schachtwand** products and systems.

### Disposal

The substances in **HENSOTHERM® System für Schachtwand** must be handled like waste paints and varnishes. The applicable national laws and regulations must be observed.

### Work safety

The use category of **HENSOTHERM® System für Schachtwand** 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!

Our technical advisers will be pleased to assist you with your enquiries!

Complete product portfolios and further details can be downloaded from [www.rudolf-hensel.de](http://www.rudolf-hensel.de)

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