FIRE PROTECTION SYSTEMS

UTILITY MODEL HENSEL ISSUED

HENSOTHERM® 7 KS Gewebe 50
Fire protection solution for single pipe penetrations

TECHNICAL DATASHEET / ASSEMBLY INSTRUCTIONS

Intumescent fire-protection fabric for the penetration sealing of combustible and non-combustible pipes

- Fire resistance class up to EI 240 / tested in accordance with EN 1366-3
- For use in flexible walls, solid walls, and solid floors
- Combustible pipes, solar pipes, EIC / flexible pipes, and non-combustible pipes insulated with synthetic rubber or PIR shells
- ETA 20/1306

Member of DGNB
Deutsche Gesellschaft für Nachhaltiges Bauen
German Sustainable Building Council

ÉMISSIONS DANS L'AIR INTÉRIEUR A+

eco 1 ecobau Cert.

green product HENSEL

Made in Germany

TECHNICAL INFORMATION

Applications

Fitting	Cables	max Ø (mm)
	EIC / flexible conduits | Bundles	≤125.0
	Combustible pipes with and without synthetic rubber insulation	≤160.0
	Aluminium composite pipes	≤63.0
	Non-combustible pipes with synthetic rubber or PIR insulation	≤219.1 [steel] ≤89.0 [copper]
	Split AC ducts with control line	≤16.0
	Solar pipes	≤25.0
	Steel pipes with PIR insulation	≤139.7

Advantages

- All commercially available synthetic rubbers can be used (≥ d, s3, d0)
- Low-cost solution
- Flexible electrical installation conduits with and without cables
- Fire penetration seals for single penetrations of combustible and non-combustible pipes
- Fire resistance class up to EI 240
- Internal endless pipe collar of HENSOTHERM® 7 KS Gewebe 50, easy to cut with knife or scissors
- Custom installations, also without mineral wool

Spacings for single-pipe lead-throughs
See ETA 20/1306 of 1/1/2021 on page 31:
- Distance from other lead-throughs: ≥ 200 mm
- Distance of first support: ≤300 mm

Technical details

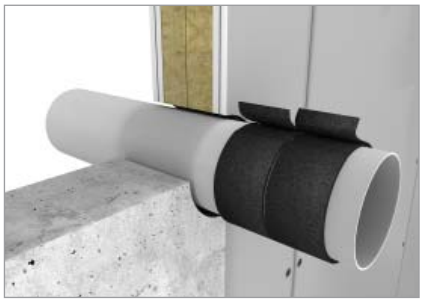
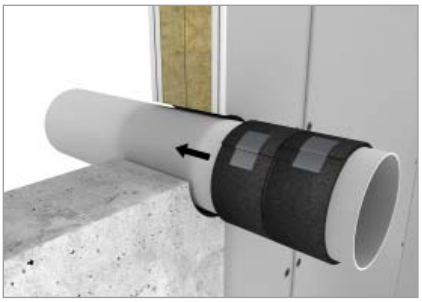
Assessment / ETA **Tested in accordance with**	ETA 20/1306 EN 1366-3
Fire resistance time	Up to EI 240
Substrate	Flexible wall, solid wall, solid floor
Minimum component thickness	Flexible and solid walls: ≥100.0 mm, floors: ≥150.0 mm
Max aperture size	Wide range of applications, see tables for details
Annular gap seal	HENSOMASTIK® 5 KS SP or A1 construction material (e.g. plaster)

Product	EAN	Packaging
HENSOTHERM® 7 KS Gewebe 50	4250153511052	Roll 15 m, width 50 mm, thickness 2 mm
HENSOMASTIK® 5 KS SP	4250153505235	12.5 kg
HENSOMASTIK® 5 KS SP	4250153505242	Cartridge 310 ml 20 cartridges = 1 carton

TECHNICAL INFORMATION

Installation in flexible or solid wall | Combustible pipes

Installation instructions: For combustible pipes, **HENSOTHERM® 7 KS Gewebe 50** is wrapped around the pipe in the appropriate number of layers (batch number facing outwards resp. visible). It is fixed in place with fabric adhesive tape, pushed into position and aligned flush with the construction element's surface.
HENSOTHERM® 7 KS Gewebe 50 is applied **from both sides** and **aligned flush with the wall.**Tolerance: **HENSOTHERM® 7 KS Gewebe 50 may protrude by up to 5 mm.**

For wall penetrations, the annular gap is sealed from both sides of the wall with **HENSOMASTIK® 5 KS SP,** alternatively with plaster or mortar (A1), at least 5 cm deep, as shown.

Apllication: Wall | Combustible pipes

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Geberit Silent-dB20	≤56	3.2	2	EI 120 U/U
Geberit Silent-dB20	>56 ≤75	3.6	3	EI 120 U/U
Geberit Silent-dB20	>75 ≤110	6.0	4	EI 90 U/U
Geberit Silent-PP	≤50	2.0	2	EI 120 U/U
Geberit Silent-PP	>50 ≤75	2.6	3	EI 120 U/U
Geberit Silent-PP	>75 ≤110	3.6	4	EI 120 U/U
Geberit Silent-PP	>110 ≤125	4.2	5	EI 120 U/U
Geberit Silent-Pro	≤50	3.0	2	EI 120 U/U
Geberit Silent-Pro	>50 ≤75	3.8	3	EI 120 U/U
Geberit Silent-Pro	>75 ≤110	4.5	4	EI 120 U/U
Geberit Silent-Pro	>110 ≤125	5.0	5	EI 120 U/U
PE-HD	≤56	3.0	2	EI 120 U/U
PE-HD	>56 ≤75	3.0	3	EI 120 U/U
PE-HD	>75 ≤110	4.3	4	EI 120 U/U
PE-HD	>110 ≤125	4.8	5	EI 120 U/U
POLO-KAL NG	≤50	2.0	2	EI 120 U/U
POLO-KAL NG	>50 ≤75	2.6	3	EI 120 U/U
POLO-KAL NG	>75 ≤110	3.4	4	EI 120 U/U
POLO-KAL NG	>110 ≤125	3.9	5	EI 120 U/U

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TECHNICAL INFORMATION

Application: Wall | Combustible pipes

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
POLO-KAL XS	≤50	2.0	2	EI 120 U/U
POLO-KAL XS	>50 ≤110	3.4	4	EI 120 U/U
POLO-KAL 3S	≤75	3.8	3	EI 120 U/U
POLO-KAL 3S	>75 ≤110	4.8	4	EI 120 U/U
POLO-KAL 3S	>110 ≤125	5.3	5	EI 120 U/U
Raupiano Plus	≤50	1.8	2	EI 120 U/U
Raupiano Plus	>50 ≤75	2.5	3	EI 120 U/U
Raupiano Plus	>75 ≤110	2.8	4	EI 120 U/U
Pipelife Master 3	≤50	1.8	2	EI 120 U/U
Pipelife Master 3	>50 ≤75	2.3	3	EI 120 U/U
Pipelife Master 3	>75 ≤110	3.0	4	EI 120 U/U
Pipelife Master 3	>110 ≤125	3.5	5	EI 120 U/U
Wavin SiTech+	≤50	1.8	2	EI 120 U/U
Wavin SiTech+	>50 ≤110	3.4	4	EI 120 U/U
Conel Drain	≤50	1.8	2	EI 120 U/U
Conel Drain	>50 ≤110	3.9	4	EI 120 U/U
PP-HT	≤50	1.8	2	EI 120 U/U
PP-HT	>50 ≤75	1.9	3	EI 120 U/U
PP-HT	>75 ≤110	2.7	4	EI 120 U/U
PVC-U	≤50	1.8–5.6	2	EI 120 U/U
PVC-U	>50 ≤75	1.9–5.6	3	EI 120 U/U
PVC-U	>75 ≤110	2.2–8.1	4	EI 120 U/U
PVC-U	>110 ≤125	2.5–9.3	5	EI 90 U/U
PVC-U	>110 ≤125	9.3	5	EI 120 U/U

Application: Wall | Aluminium composite pipes with synthetic rubber

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Insulation thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Geberit Mepla	≤16	2.0	11.5–13.5	1	EI 120 U/C
Geberit Mepla	≤16	2.0	13.0	1	EI 120 U/C
Geberit Mepla	>16 ≤40	3.5	13.0	1	EI 120 U/C
Geberit Mepla	>16 ≤40	3.5	13.0–25.0	1	EI 120 U/C
Geberit Mepla	>16 ≤40	3.5	13.5–36.5	1	EI 120 U/C
Geberit Mepla	>40 ≤63	4.5	13.0–25.0	2	EI 120 U/C EI 90 U/C
Geberit Mepla	>40 ≤63	4.5	14.0–40.5	2	EI 120 U/C
KE KELIT KELOX	≤16	2.0	11.5–13.5	1	EI 120 U/C
KE KELIT KELOX	≤16	2.0	11.5–25.0	1	EI 120 U/C
KE KELIT KELOX	>16 ≤40	4.0	13.0–25.0	1	EI 120 U/C
KE KELIT KELOX	>16 ≤40	4.0	13.5–36.5	1	EI 120 U/C
KE KELIT KELOX	>40 ≤63	6.0	13.0–25.0	2	EI 120 U/C
KE KELIT KELOX	>40 ≤63	6.0	14.0–40.5	2	EI 120 U/C
Pipelife Radopress	≤16	2.6	9.0 (LS)	1	EI 120 U/C
Pipelife Radopress	>16 ≤40	6.0	9.0–19.0 (LS)	1	EI 120 U/C

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TECHNICAL INFORMATION

Application: Wall | Aluminium composite pipes with synthetic rubber

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Insulation thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Uponor MLC	≤14	2.0	11.5–13.5	1	EI 120 U/C
Uponor MLC	>14 ≤40	4.0	13.5–36.5	1	EI 120 U/C
Uponor MLC	>40 ≤63	6.0	14.0	2	EI 120 U/C
Uponor MLC	>40 ≤63	6.0	14.0–40.5	2	EI 90 U/C

List of approved insulation types:

The following insulation types exhibit a fire behaviour better than or equivalent to those tested (reference D,s3-d0) and hence may be used as an alternative in the same tested/specified thicknesses (as of November 2020):

AF/ArmaFlex	Eurobatex	Flexen Heizung Plus	Kaiflex HFplus	K-FLEX ECO
HT/ArmaFlex	Eurobatex H	Flexen Kälte Plus	Kaiflex HTplus	K-FLEX H
ArmaFlex LS	Eurobatex HF		Kaiflex KKplus	K-FLEX SRC ECO
NH/ArmaFlex	Eurobatex Plus		Kaiflex LS	K-FLEX ST
SH/ArmaFlex	Eurobatex Plus UF		Kaiflex ST	K-FLEX ST/SK
ArmaFlex Ultima	Eurobatex Super			
ArmaFlex XG				

For installation in Switzerland, the corresponding fire classification must be observed when selecting the insulation.

Installation in flexible or solid wall | EIC / flexible pipes

Installation instructions: Installation is analogue to the work steps for combustible pipes in walls.

Application: Wall | EIC / Flexible electrical installation conduits

Pipe (manufacturer, type)	Max bundle diameter (mm)	Single pipe diameter (mm)	Max single cable diameter (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Bundled EIC / flexible electrical installation conduits with or without cables	125	25 + 32	< 21	5	EI 120 C/C

TECHNICAL INFORMATION

Installation in flexible or solid wall | Non-combustible

Installation instructions: For non-combustible pipes with insulation made of synthetic rubber, mineral wool or PIR, **HENSOTHERM® 7 KS Gewebe 50** is wrapped around the pipe in the appropriate number of layers (batch number facing outwards resp. visible), fixed in place with fabric adhesive tape, pushed into position and aligned flush with the construction element's surface.
For wall penetrations, **HENSOTHERM® 7 KS Gewebe 50** is applied from both sides and aligned flush with the wall. The annular gap is sealed from both sides of the wall with **HENSOMASTIK® 5 KS SP at least 5 cm deep, alternatively with plaster or mortar (A1), also at least 5 cm deep. Tolerance: HENSOTHERM® 7 KS Gewebe 50 may protrude by up to 5 mm.**

Application: Wall | Non-combustible pipes with synthetic rubber (CS)

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Insulation thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Copper, steel	≤15	1.0–7.5	13.0	1	EI 90 C/U
Copper, steel	≤15	1.0–7.5	11.5	1	EI 120 C/U EI 90 C/U
Copper, steel	≤15	1.0–7.5	10.0	1	EI 90 C/U
Copper, steel	>15 ≤42	1.2–14.2	13.0–25.0	2	EI 90 C/U
Copper, steel	>15 ≤42	1.2–14.2	20.0–36.5	2	EI 120 C/U EI 90 C/U
Copper, steel	>42 ≤54	1.5–14.2	19.0–25.0	2	EI 120 C/U EI 90 C/U
Copper, steel	>42 ≤54	1.5–14.2	13.5–38.0	2	EI 120 C/U EI 90 C/U
Copper, steel	≥15 ≤54	1.5–14.2	13.0–25.0	2	EI 90 C/U
Copper, steel	≥15 ≤54	1.5–14.2	25.0	2	EI 120 C/U
Copper, steel	>54 ≤89	2.0–14.2	19.0–50.0	2	EI 90 C/U
Copper, steel	>54 ≤89	2.0–14.2	50.0	2	EI 120 C/U
Steel	>15 ≤88.9	3.2–14.2	19.0–25.0	2	EI 90 C/U
Steel	>15 ≤88.9	3.2–14.2	18.0–41.5	2	EI 120 C/U EI 90 C/U
Steel	>54 ≤88.9	2.0–14.2	50.0	2	EI 120 C/U
Steel	>88.9 ≤219.1	6.3–14.2	19.0–50.0	2	EI 90 C/U
Steel	219.1	6.3	50.0	2	EI 90 C/U
ArmaFlex Duo Solar Pipe	20-25	0.8	14.0	2	EI 120 C/U
Isolante K-Flex Twin Solar Pipe	16	0.8	20.0	2	EI 120 C/U
Isolante K-Flex Twin Solar Pipe	≥16 ≤25	0.8	20.0	2	EI 90 C/U
Split AC duct (CU) with cabling	10+16	2.0	6.0	1	EI 60 C/U

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TECHNICAL INFORMATION

Application: Wall | Non-combustible pipes with synthetic rubber (CS)

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Insulation thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Würth Flexen Twin Solar Pipe	16	0.8	20.0	2	EI 120 C/U
Würth Flexen Twin Solar Pipe	≥16 ≤25	0.8	20.0	2	EI 90 C/U

List of approved insulation types:

The following insulation types exhibit a fire behaviour better than or equivalent to those tested (reference D,s3-d0) and hence may be used as an alternative in the same tested/specified thicknesses (as of November 2020):

AF/ArmaFlex	Eurobatex	Flexen Heizung Plus	Kaiflex HFplus	K-FLEX ECO
HT/ArmaFlex	Eurobatex H	Flexen Kälte Plus	Kaiflex HTplus	K-FLEX H
ArmaFlex LS	Eurobatex HF		Kaiflex KKplus	K-FLEX SRC ECO
NH/ArmaFlex	Eurobatex Plus		Kaiflex LS	K-FLEX ST
SH/ArmaFlex	Eurobatex Plus UF		Kaiflex ST	K-FLEX ST/SK
ArmaFlex Ultima	Eurobatex Super			
ArmaFlex XG				

For installation in Switzerland, the corresponding fire classification must be observed when selecting the insulation.

Installation instructions: Installation is analogue to the work steps for non-combustible pipes with insulation in walls.

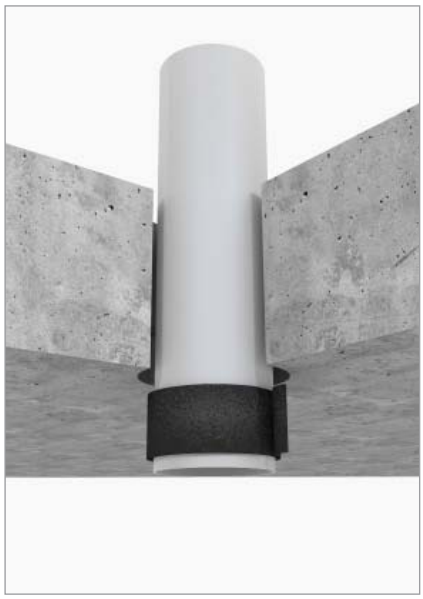
Application: Wall | Non-combustible pipes with with PIR insulation (LS or CS tested; see ETA) with and without PVC lamination

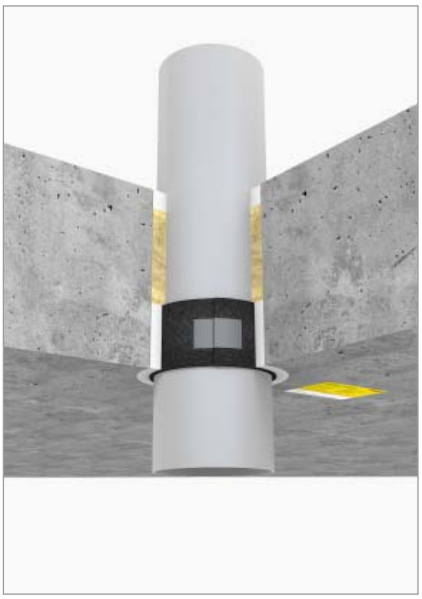
Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Insulation (manufacturer, type)	Insulation thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Steel	≤15	1.0–14.2	PIR	30.0	2	EI 120 C/U
Steel	>15 ≤54	1.5–14.2	PIR	30.0–60.0	2	EI 30 C/U
Steel	>54 ≤88.9	3.2–14.2	PIR	30.0–80.0	2	EI 30 C/U
Steel	88.9	3.2–14.2	PIR	30.0–80.0	2	EI 60 C/U
Steel	88.9	3.2–14.2	PIR	30.0	2	EI 90 C/U
Steel	>88.9 ≤139.7	4.0–14.2	PIR	30.0–80.0	2	EI 30 C/U
Steel	139.7	3.2–14.2	PIR	30.0	2	EI 60 C/U
Steel	139.7	3.2–14.2	PIR	80.0	2	EI 90 C/U

TECHNICAL INFORMATION

Floor installation | Combustible pipes

Installation instructions: For combustible pipes, **HENSOTHERM® 7 KS Gewebe 50** is wrapped around the pipe in the appropriate number of layers (batch number facing outwards resp. visible), fixed in place with fabric adhesive tape, pushed into position and aligned flush with the construction element's surface.
The HENSOTHERM® 7 KS Gewebe 50 is only applied from the underside of the floor and aligned flush with the floor.
Tolerance: HENSOTHERM® 7 KS Gewebe 50 may protrude by up to 5 mm.





For floor penetrations of combustible pipes, the annular gap is additionally filled with darning wool (loose stone wool insulation) up to the top of the floor and sealed with **HENSOMASTIK® 5 KS SP, at least 5 cm deep on the underside of the floor.** Alternatively, the annular gap can be filled with gypsum mortar or mortar (A1) in the full floor thickness.

Application: Floor | Combustible pipes

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Geberit Silent-db20	≤56	3.2	3	EI 240 U/U
Geberit Silent-db20	>56 ≤75	3.6	3	EI 240 U/U
Geberit Silent-db20	>75 ≤110	6.0	4	EI 240 U/U
Geberit Silent-db20	>110 ≤135	6.0	5	EI 240 U/U
Geberit Silent-PP	≤50	1.8	2	EI 240 U/U
Geberit Silent-PP	>50 ≤75	2.6	3	EI 240 U/U
Geberit Silent-PP	>75 ≤110	3.6	4	EI 240 U/U
Geberit Silent-PP	>110 ≤125	4.2	5	EI 240 U/U
Geberit Silent-Pro	≤50	3.0	2	EI 120 U/U
Geberit Silent-Pro	>50 ≤75	3.8	3	EI 120 U/U
Geberit Silent-Pro	>75 ≤110	4.5	4	EI 120 U/U
Geberit Silent-Pro	>110 ≤125	5.0	5	EI 120 U/U
PE-HD	≤56	3.0	2	EI 240 U/U
PE-HD	>56 ≤75	3.0	3	EI 240 U/U
PE-HD	>75 ≤110	4.3	4	EI 240 U/U
PE-HD	>110 ≤125	4.8	5	EI 240 U/U
PE-HD	>125 ≤160	6.2	6	EI 120 U/U
POLO-KAL NG	≤50	2.0	2	EI 240 U/U
POLO-KAL NG	>50 ≤75	2.6	3	EI 240 U/U

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TECHNICAL INFORMATION

Application: Floor | Combustible pipes

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
POLO-KAL NG	>75 ≤110	3.4	4	EI 240 U/U
POLO-KAL NG	>110 ≤125	3.9	5	EI 240 U/U
POLO-KAL XS	≤50	2.0	2	EI 120 U/U
POLO-KAL XS	>50 ≤75	2.6	3	EI 120 U/U
POLO-KAL XS	>75 ≤110	3.4	4	EI 120 U/U
POLO-KAL 3S	≤75	3.8	3	EI 240 U/U
POLO-KAL 3S	>75 ≤110	4.8	4	EI 240 U/U
POLO-KAL 3S	>110 ≤125	5.3	5	EI 240 U/U
Raupiano Plus	≤50	1.8	2	EI 240 U/U
Raupiano Plus	>50 ≤75	2.5	3	EI 240 U/U
Raupiano Plus	>75 ≤110	2.8	4	EI 240 U/U
Raupiano Plus	>110 ≤125	3.1	5	EI 240 U/U
Pipelife Master 3	≤50	1.8	2	EI 120 U/U
Pipelife Master 3	>50 ≤75	2.3	3	EI 120 U/U
Pipelife Master 3	>75 ≤110	3.0	4	EI 120 U/U
Pipelife Master 3	>110 ≤125	3.5	5	EI 120 U/U
Wavin SiTech+	≤50	1.8	2	EI 120 U/U
Wavin SiTech+	>50 ≤75	2.4	3	EI 120 U/U
Wavin SiTech+	>75 ≤110	3.4	4	EI 120 U/U
Conel Drain	≤50	1.8	2	EI 120 U/U
Conel Drain	>50 ≤75	2.2	3	EI 120 U/U
Conel Drain	>75 ≤110	2.7	4	EI 120 U/U
PP-HT	≤50	1.8	2	EI 240 U/U
PP-HT	>50 ≤75	1.9	3	EI 240 U/U
PP-HT	>75 ≤110	2.7	4	EI 180 U/U
PVC-U	≤50	1.8–5.6	2	EI 240 U/U
PVC-U	>50 ≤75	1.9–5.6	3	EI 240 U/U
PVC-U	>75 ≤110	2.2	4	EI 240 U/U
PVC-U	>75 ≤110	2.2–8.1	4	EI 180 U/U
PVC-U	>110 ≤125	2.5–9.3	5	EI 180 U/U
PVC-U	>110 ≤125	2.5	5	EI 240 U/U

Application: Floor | Combustible pipes + aluminium composite pipes with synthetic rubber (LS or CS tested; see ETA)

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Insulation thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
PE-HD[1]	110	4.3	13.0	5	EI 180 U/C
Geberit Mepla	≤16	2.0	13.0–13.5	1	EI 240 U/C
Geberit Mepla	≤16	2.0	13.0	1	EI 240 U/C
Geberit Mepla	>16 ≤40	3.5	13.5–36.5	1	EI 240 U/C
Geberit Mepla	>16 ≤40	3.5	13.0–25.0	1	EI 240 U/C
Geberit Mepla	>40 ≤63	4.5	14.0	2	EI 240 U/C EI 120 U/C
Geberit Mepla	>40 ≤63	4.5	40.5	2	EI 240 U/C
Geberit Mepla	>40 ≤63	4.5	13.0–25.0	2	EI 240 U/C

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TECHNICAL INFORMATION

Application: Floor | Composite aluminium pipes with synthetic rubber (LS or CS tested; see ETA)

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Insulation thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
KE KELIT KELOX	≤ 16	2.0	13.0-13.5	1	EI 240 U/C
KE KELIT KELOX	>16≤ 40	4.0	13.5	1	EI 240 U/C
KE KELIT KELOX	>16≤ 40	4.0	13.5-36.5	1	EI 180 U/C
KE KELIT KELOX	>40≤ 63	6.0	14.0-40.5	2	EI 240 U/C
Pipelife Radopress	≤ 16	2.0	9.0–19.0	1	EI 180 U/C
Pipelife Radopress	>16≤ 40	4.0	9.0–19.0	1	EI 180 U/C
Rehau Rautitan	≤ 16	2.6	9.0–19.0	1	EI 180 U/C
Rehau Rautitan	>16≤ 40	6.0	9.0–19.0	1	EI 180 U/C
Uponor MLC	≤ 14	2.0	11.5–13.5	1	EI 240 U/C
Uponor MLC	≤ 14	2.0	9.0–19.0	1	EI 180 U/C
Uponor MLC	>14≤ 40	4.0	13.5–36.5	1	EI 240 U/C
Uponor MLC	>14≤ 40	4.0	9.0–19.0	1	EI 180 U/C
Uponor MLC	>40≤ 63	6.0	14.0	2	EI 240 U/C EI 180 U/C
Uponor MLC	>40≤ 63	6.0	40.5	2	EI 240 U/C
Viega Raxofix	≤ 16	2.2	9.0–19.0	1	EI 180 U/C
Viega Raxofix	>16≤ 40	3.5	9.0–19.0	1	EI 180 U/C

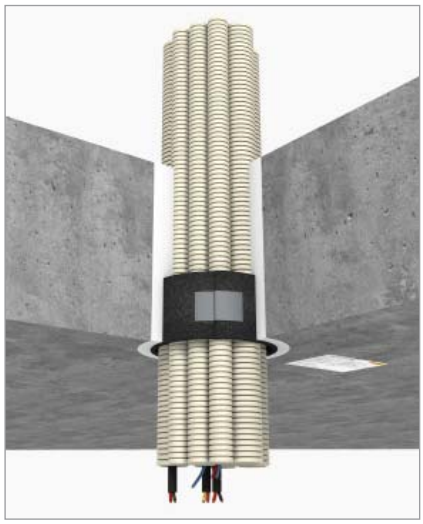
List of approved insulation types:

The following insulation types exhibit a fire behaviour better than or equivalent to those tested (reference D,s3-d0) and hence may be used as an alternative in the same tested/specified thicknesses (as of November 2020):

AF/ArmaFlex	Eurobatex	Flexen Heizung Plus	Kaiflex HFplus	K-FLEX ECO
HT/ArmaFlex	Eurobatex H	Flexen Kälte Plus	Kaiflex HTplus	K-FLEX H
ArmaFlex LS	Eurobatex HF		Kaiflex KKplus	K-FLEX SRC ECO
NH/ArmaFlex	Eurobatex Plus		Kaiflex LS	K-FLEX ST
SH/ArmaFlex	Eurobatex Plus UF		Kaiflex ST	K-FLEX ST/SK
ArmaFlex Ultima	Eurobatex Super			
ArmaFlex XG				

For installation in Switzerland, the corresponding fire classification must be observed when selecting the insulation.

Floor installation | EIC / flexible pipes



Installation instructions: Installation is analogue to the work steps for combustible pipes in floors.

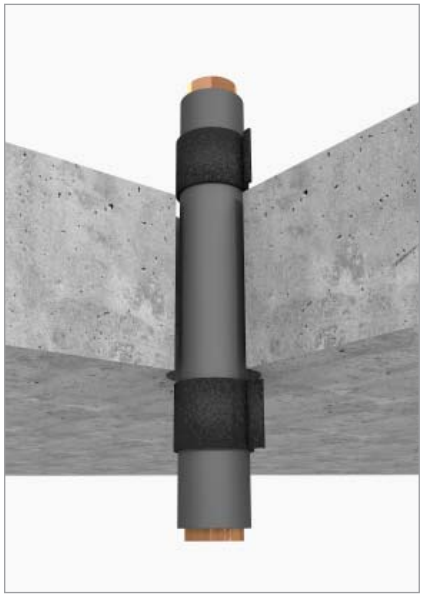
TECHNICAL INFORMATION

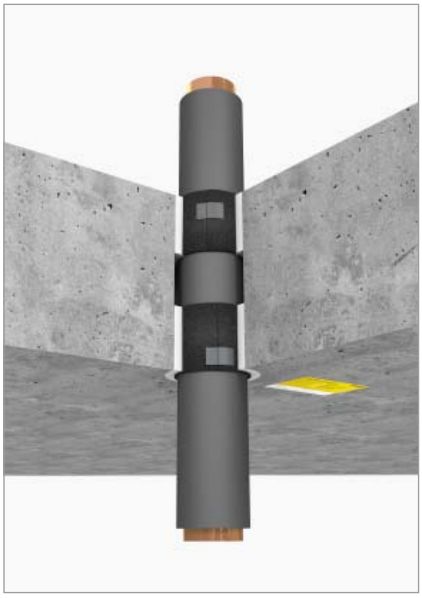
Application: Floor | EIC / Flexible pipes

Pipe (manufacturer, type)	Max bundle diameter (mm)	Single pipe diameter (mm)	Max single cable diameter (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Bundled EIC / flexible electrical installation conduits with or without cables	125	25 + 32	21	5	EI 120 C/C

Floor installation | Non-combustible pipes

Installation instructions: For non-combustible pipes with insulation made of synthetic rubber, mineral wool or PIR, **HENSOTHERM® 7 KS Gewebe 50** is wrapped around the pipe in the appropriate number of layers (batch number facing outwards resp. visible), fixed in place with fabric adhesive tape, pushed into position and aligned flush with the construction element's surface.
HENSOTHERM® 7 KS Gewebe 50 is applied from both sides and aligned flush with the underside and top of the floor. For non-combustible pipes, the annular gap is sealed from both sides, i.e. from the underside and top of the floor, with **HENSOMASTIK® 5 KS SP at least 5 cm deep.**
Tolerance: HENSOTHERM® 7 KS Gewebe 50 may protrude by up to 5 mm.





Alternatively, the annular gap can be **filled with plaster or mortar (A1)** in the full floor thickness.

Application: Floor | Non-combustible pipes with synthetic rubber

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Insulation (manufacturer, type)	Insulation case (length mm)	Insulation thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Armaflex Duo Solar Pipe	≥20 ≤25	0.8	Armaflex	CS	14.0	2	EI 180 C/U
Isolante K-Flex Twin Solar Pipe	≥16 ≤25	0.8	Isolante	CS	20.0	2	EI 180 C/U
Split AC duct (CU) + cabling	10+16	2.0	PE	CS	6.0	1	EI 120 C/U
Copper, steel	≤15	1.0–7.5	Armaflex AF	CS	11.5	1	EI 240 C/U
Copper, steel	≤15	1.0–7.5	See list*	CS	10.0	1	EI 120 C/U
Copper, steel	≤15	1.0–7.5	Armaflex NH	CS	13.0	1	EI 240 C/U
Copper, steel	>15 ≤42	1.2–14.2	Armaflex AF	CS	13.5	2	EI 240 C/U
Copper, steel	>15 ≤42	1.2–14.2	Armaflex AF	CS	13.5–36.5	2	EI 240 C/U
Copper, steel	>15 ≤42	1.2–14.2	See list*	CS	13.0–25.0	2	EI 120 C/U
Copper, steel	>15 ≤42	1.2–14.2	Armaflex NH	CS	13.0	2	EI 240 C/U EI 180 C/U
Copper, steel	>15 ≤42	1.2–14.2	Armaflex NH	CS	13.0–25.0	2	EI 180 C/U

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TECHNICAL INFORMATION

Application: Floor | Non-combustible pipes with synthetic rubber

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Insulation (manufacturer, type)	Insulation case (length mm)	Insulation thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Copper, steel	>42 ≤54	1.5–14.2	Armaflex AF	CS	13.5–38.0	2	EI 240 C/U EI 120 C/U
Copper, steel	>42 ≤54	1.5–14.2	Armaflex AF + Klimarock 20 mm on floor's upper side	CS + LI 250	38.0	2	EI 120 C/U
Copper, steel	>42 ≤54	1.5–14.2	Armaflex AF + Klimarock 20 mm	CS + LI 250	13.5	2	EI 180 C/U
Copper, steel	>42 ≤54	1.5–14.2	Armaflex AF	CS	38.0	2	EI 120 C/U
Copper, steel	>42 ≤54	1.5–14.2	See list* + Klimarock 20 mm on floor's upper side	CS + LI 250	13.0	2	EI 120 C/U
Copper, steel	>42 ≤54	1.5–14.2	See list* + Klimarock 20 mm	CS + LI 250	25.0	2	EI 120 C/U
Copper, steel	>42 ≤54	1.5–14.2	Armaflex NH	CS	13.0–25.0	2	EI 240 C/U EI 180 C/U
Copper, steel	>42 ≤54	1.5–14.2	Armaflex NH + Klimarock 20 mm on floor's upper side	CS + LI 250	13.0–25.0	2	EI 180 C/U
Copper, steel	54	1.5–14.2	Armaflex AF + Klimarock 20 mm on floor's upper side	CS + LI 250	13.5	2	EI 180 C/U
Copper, steel	54	1.5–14.2	Armaflex NH + Klimarock 20 mm	CS + LI 250	13.0–25.0	2	EI 180 C/U
Copper, steel	>54 ≤89	2.0–14.2	Armaflex AF + Klimarock 20 mm on floor's upper side	CS + LI 250	13.5–38.0	2	EI 90 C/U
Copper, steel	>54 ≤89	2.0–14.2	See list* + Klimarock 20 mm	CS + LI 250	19.0–50.0	2	EI 120 C/U
Copper, steel	>54 ≤89	2.0–14.2	Armaflex NH + Klimarock 20 mm	CS + LI 250	19.0–32.0	2	EI 120 C/U
Copper, steel	89	3.2–14.2	Armaflex AF + Klimarock 20 mm on floor's upper side	CS + LI 250	38.0	2	EI 120 C/U
Steel	>15 ≤54	1.5–14.2	Armaflex NH	CS	19.0–25.0	2	EI 240 C/U EI 180 C/U
Steel	>15 ≤88.9	3.2–14.2	Armaflex AF	CS	18.0–41.5	2	EI 240 C/U EI 90 C/U
Steel	>15 ≤88.9	3.2–14.2	Armaflex NH	CS	19.0	2	EI 180 C/U
Steel	>15 ≤88.9	3.2–14.2	Armaflex NH	CS	19.0–25.0	2	EI 240 C/U EI 120 C/U
Steel	>54 ≤88.9	3.2	Armaflex AF	CS	41.5	2	EI 60 C/U
Steel	88.9	3.2–14.2	Armaflex NH	CS	19.0	2	EI 240 C/U
Steel	>88.9 ≤219.1	6.3–14.2	Armaflex AF + Klimarock 20 mm on floor's upper side	CS + LI 250	19.0–50.0	2	EI 90 C/U
Steel	219.1	6.3–14.2	Armaflex AF + Klimarock 20 mm on floor's upper side	CS + LI 250	50.0	2	EI 120 C/U
Steel	>88.9 ≤219.1	6.3–14.2	See list* + Klimarock 20 mm	CS + LI 250	19.0	2	EI 120 C/U

TECHNICAL INFORMATION

Application: Floor | Non-combustible pipes with synthetic rubber

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Insulation (manufacturer, type)	Insulation case (length mm)	Insulation thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Steel	>88.9 ≤219.1	6.3–14.2	See list* + Klimarock 20 mm	CS + LI 250	19.0–50.0	2	EI 90 C/U
Würth Flexen Twin Solar Pipe	16	0.8	Fleece	CS	20.0	2	EI 180 C/U
Würth Flexen Twin Solar Pipe	≥16 ≤25	0.8	Fleece	CS	20.0	2	EI 120 C/U

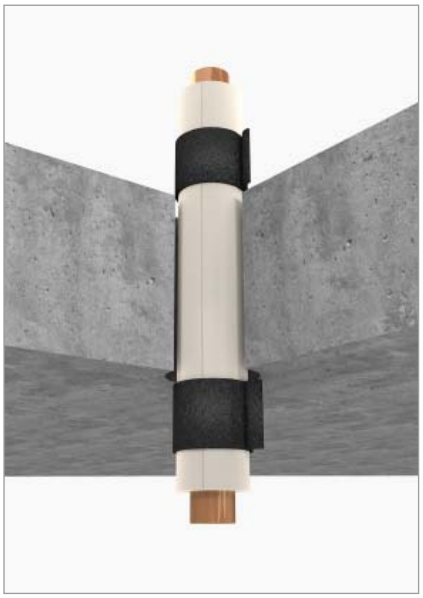
List of approved insulation types:

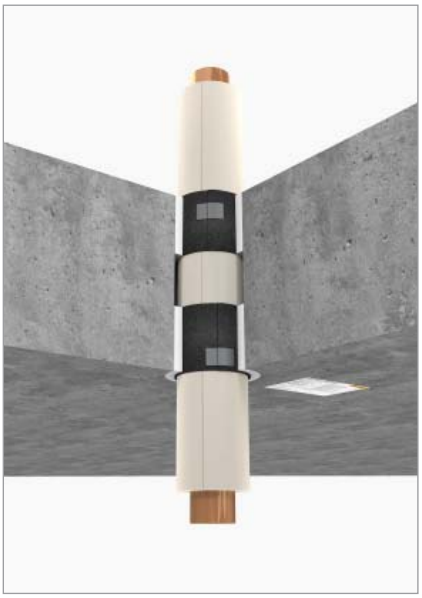
The following insulation types exhibit a fire behaviour better than or equivalent to those tested (reference D,s3-d0) and hence may be used as an alternative in the same tested/specified thicknesses (as of November 2020):

AF/ArmaFlex	Eurobatex	Flexen Heizung Plus	Kaiflex HFplus	K-FLEX ECO
HT/ArmaFlex	Eurobatex H	Flexen Kälte Plus	Kaiflex HTplus	K-FLEX H
ArmaFlex LS	Eurobatex HF		Kaiflex KKplus	K-FLEX SRC ECO
NH/ArmaFlex	Eurobatex Plus		Kaiflex LS	K-FLEX ST
SH/ArmaFlex	Eurobatex Plus UF		Kaiflex ST	K-FLEX ST/SK
ArmaFlex Ultima	Eurobatex Super			
ArmaFlex XG				

For installation in Switzerland, the corresponding fire classification must be observed when selecting the insulation.

Application: Floor | Non-combustible pipes with PIR insulation





Installation instructions: Installation is analogue to the work steps for non-combustible pipes with synthetic rubber insulation in floors.

Pipe (manufacturer, type)	Pipe diameter (mm)	Wall thickness (mm)	Insulation (manufacturer, type)	Insulation thickness (mm)	Layers of HENSOTHERM® 7 KS Gewebe 50	Classification
Copper, steel	≤15	1.0–7.5	PIR	30.0	2	EI 120 C/U

TECHNICAL INFORMATION

Applications: Floor | Non-combustible pipes with PIR shell

Pipe (manufacturer, type)	**Pipe diameter** (mm)	**Wall thickness** (mm)	**Insulation** (manufacturer, type)	**Insulation thickness** (mm)	**Layers of HENSOTHERM® 7 KS Gewebe 50**	**Classification**
Copper, steel	>15 ≤54	1.5–14.2	PIR	30.0–60.0	2	EI 30 C/U
Copper, steel	54	1.5–14.2	PIR	30.0–60.0	2	EI 30 C/U
Steel	>54 ≤88.9	3.2–14.2	PIR	30.0–80.0	2	EI 30 C/U
Steel	88.9	3.2–14.2	PIR	30.0–80.0	2	EI 60 C/U
Steel	88.9	3.2–14.2	PIR	30.0	2	EI 90 C/U
Steel	>88.9 ≤139.7	4.0–14.2	PIR	30.0–80.0	2	EI 30 C/U
Steel	139.7	3.2–14.2	PIR	30.0	2	EI 60 C/U
Steel	139.7	3.2–14.2	PIR	80.0	2	EI 90 C/U

Notes

Retrofits

If the sealing system is designed for retrofits, note the following:
Following a retrofit, the system must be returned to its intended state.
The specifications in the aBG / ETA / installation instructions must be observed.

Use and inspection

The sealing system's fire protection properties are safeguarded over the service life only when the system is maintained in proper working condition.
The developer/principal must be referred thereto by the applicator / commissioned company.

Disposal

The materials must be handled like waste paints and varnishes. The applicable national laws and regulations must be observed.

Labelling (D/CH)

Following their installation, the sealing systems must be marked with the provided permanent labels affixed to the wall/floor.

NOTES

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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