ZAPP-
ZIMMERMANN

INNOVATIVE FIRE-PROTECTION SYSTEMS

System ZZ-Fire protection silicone NE ETA-13/0123

INSTALLATION MANUAL

ZZ ZAPP-ZIMMERMANN

Inhalt/ Content

System ZZ-Fire protection silicone NE

for cable penetration seals up to EI 120

System ZZ-Fire protection silicone NE restores the fire resistance in areas of walls and floors where cables penetrate the component.

System ZZ-Fire protection silicone NE ETA-13/0123

Cable penetration seal up to EI 120 for rigid walls, rigid floors and flexible walls.
Through penetration firestop system for electrical cables, telecommunication cables, and optical fibre cables.

a. System ZZ-Fire protection silicone NE in rigid wall

b. System ZZ-Fire protection silicone NE in flexible wall

Specially suited for: 1. Through penetration firestop systems in outdoor areas, **2.** Fast and easy sealing of component openings, **3.** Small through penetration firestop systems, **4.** Openings that are difficult to access or that are irregular

Fundamentals

/ For execution of the through penetration firestop system the European Technical Approval ETA-13/0123 issued by the Austrian Institute of Construction Engineering (Österreichisches Institut für Bautechnik) is authoritative.
/ All technical specifications of the ETA, such as maximum opening size, wall types/floor types, fire resistance classifications, penetrating elements and the first support of the penetrating elements, working clearances, etc. are provided in the approval.
/ It must be ensured that the stability of the adjacent component is not impaired through installation of the through penetration firestop system, even in the event of fire. The information specified in the usability certification of the component must be complied with.
/ All applicable directives and technical rules of other trades, particularly electrical engineering directives and technical rules, must be complied with.
/ Through penetration firestop systems in floors must be safeguarded against loads, in particular also against being walked on, through suitable measures (e.g. through enclosure or through covering with a grate).
/ In accordance with ETAG 026-2, the through penetration firestop system can be assigned to use category X. This means that ZZ-Fire protection silicone NE can be used in outdoor areas as well as indoor areas.

System components

Designation	Art. no.	PU
1. ZZ-Fire protection silicone NE, 310 ml	B15H00-0001	20
2. ZZ-Fire protection silicone NE tubular bag, 580 ml	B15H00-0002	20
3. Identification plate ETA *Please pay attention to the section, Supplemental national regulations*	B16H00-0051	1

Accessories

Designation	Art. no.	PU
4. Professional dispensing gun 310 ml	B16H00-0024	1
5. EconoMax dispensing gun (310 ml cartridge & 580 ml tubular bag)	B16H00-0052	1
6. PowerMax dispensing gun (310 ml cartridge & 580 ml tubular bag)	B16H00-0053	1
7. Spare nozzle for tubular bag dispensing gun	B99H00-0160	1
8. Smoothing trowel	B99H00-0161	1
9. Tempering box WAECO TC 21FL *with digital temperature display, temperature regulator fixed at 20 °C and voltage monitor*	B99H00-0163	1
10. OTTO PE round cord B2 Ø 40 (length 1 m) *for backfill*	B99H00-0106	20

General instructions

/ The cables must be fastened on the cable trays and cable ladders or in support devices in accordance with the technical rules.
/ The cable support systems (cable trays and ladders) and the associated supports or fastenings must be made of steel and fastened on both sides of the through penetration firestop systems in such a manner that in the event of fire, additional mechanical stress cannot act on the through penetration firestop system over the period of time specified by the required fire resistance class. In this regard, the technical rules and specifications provided by the manufacturer of the cable support system and of the fastening system must be complied with.
/ The total cross section area of the penetrating elements based on the area of the through penetration firestop system must not exceed 60 %.
/ The first support of the cables must be mounted maximum 200 mm in front of the through penetration firestop system for wall installation and 250 mm for floor installation (maximum distance in floors only required top-side).

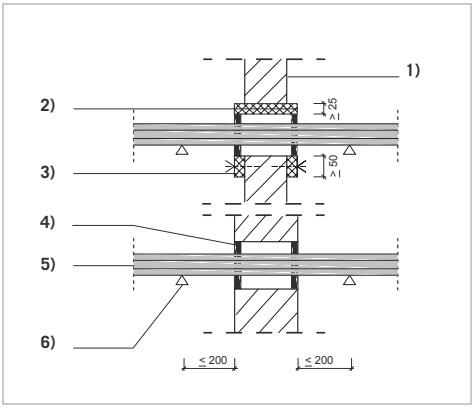


Fig. 1:
Support of cables in walls

Legend
1) Rigid wall
2) For walls with a thickness ≤ 150 mm: Lining of drywall, silicate or calcium silicate boards
3) For walls with a thickness ≤ 150 mm: Board frame (width ≥ 50 mm) of drywall, silicate or calcium silicate board
4) ZZ-Fire protection silicone NE
5) Cables
6) First support of the cables

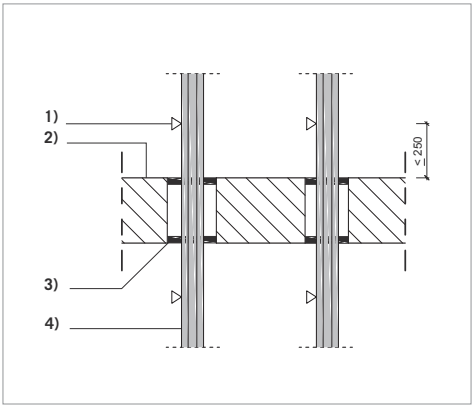


Fig. 2:
Support of cables in floors

Legend
1) First support of the cables
2) Rigid floor
3) ZZ-Fire protection silicone NE
4) Cables

Permissible install locations of the through penetration firestop system

Components	Minimum thickness	Classification of the component	Fire resistance classification*	Minimum seal thickness*	Minimum fill depth*	Maximum opening size
Rigid wall: Aerated concrete, concrete, reinforced concrete, masonry	100 mm	EN 13501-2	E 120 EI 90	150 mm	2 x 15 mm	100 x 100 [mm] ø 113 mm
Flexible wall: Timber or steel studs lined on both sides	100 mm	EN 13501-2	E 120 EI 90	150 mm	2 x 15 mm	100 x 100 [mm] ø 113 mm
Rigid floor: Aerated concrete, concrete, reinforced concrete	150 mm	EN 13501-2	E 120 EI 120	150 mm	2 x 15 mm	100 x 100 [mm] ø 113 mm

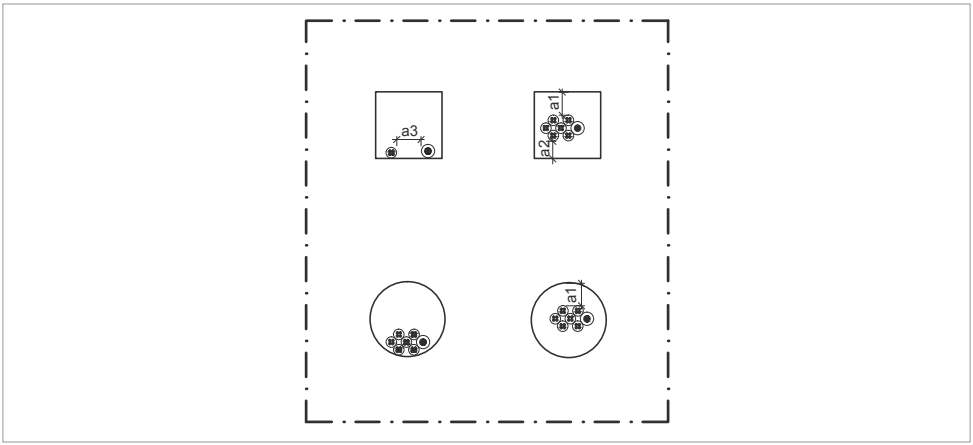
* The required seal thickness and fill depth depending on the fire resistance class and the penetrating element that is routed through are specified in the fire resistance classification table.

Approved penetrating elements

Cables

/ **Sheathed electrical cables, telecommunication cables, optical fibre cables** up to a maximum outer diameter of 21 mm

Minimum working clearances



Legend

a1: Penetrating element – top edge of aperture
a2: Penetrating element – lower or lateral edge of aperture
a3: Penetrating element – penetrating element

Minimum working clearances			
Penetrating elements	**a1**	**a2**	**a3**
Sheathed electrical cables, telecommunication cables, optical fibre cables up to a maximum outer diameter of 21 mm	0 mm	0 mm	0 mm
Between two through penetration firestop systems of this approval			50 mm

Fire resistance classifications

Installation in flexible walls or rigid walls with a thickness ≥ 100 mm or in rigid floors with a thickness ≥ 150 mm.

	PENETRATING ELEMENTS	Walls (minimum thickness 100 mm) Minimum seal thickness 150 mm Minimum fill depth 2 x 15 mm	Floors (minimum thickness 150 mm) Minimum seal thickness 150 mm Minimum fill depth 2 x 15 mm
Cables	**Sheathed electrical cables, telecommunication cables, optical fibre cables** up to a maximum outer diameter of 21 mm	E 120/EI 90	E 120/EI 120

Particularities for installation in rigid walls with a thickness of less than 150 mm

/ If the thickness of the rigid wall in the area of the through penetration firestop system is less than the required minimum seal thickness, then all around the opening, either an enclosing lining (see Fig. 2) or a board frame (see Fig. 1) of non-flammable drywall or silicate or calcium silicate boards (class A2-s1, d0 or A1 in accordance with EN 13501-1) must be provided.

/ The individual lining parts (at least 2 x 12.5 mm or at least 25 mm thick and in accordance with the minimum seal thickness 150 mm deep) are jammed together in the opening. The joint between rigid wall and lining must be sealed, for example, with plaster filler. Fastening with screws can be dispensed with.

/ Board frames must be at least 50 mm wide. The thickness must be selected in such a manner that the minimum seal thickness of 150 mm can be produced. For fastening, screws and metal anchors or screw anchors that are sufficiently large/long and suitable for the substrate must be used. In aerated concrete dry-wall screws or chipboard screws without dowels must be used. At least two screws per board must be used, the distance between screws must be a maximum of 150 mm.

Particularities for installation in rigid floors

/ Through penetration firestop systems in floors must be safeguarded against loads, particularly they must be safeguarded against being walked on, through a grate covering or enclosure.

Particularities for installation in flexible walls

/ If a lining is not used (installation, see below), the cavity between the boards of the flexible wall must be plugged tightly with mineral wool (melting point ≥ 1000 °C, minimum density 40 kg/m³) at least 10 cm around the perimeter.
/ For timber stud walls, at least a distance of 100 mm between the through penetration firestop system and timber studs must be present, and the cavity between must be plugged with mineral wool (classification A2-s1, d0 or A1 in accordance with EN 13501-1). The timber stud cross section should be at least 50 mm x 75 mm (width x depth).

Particularities for installation in flexible walls with a thickness of less than 150 mm

/ If the thickness of the flexible wall in the area of the through penetration firestop system is less than the required minimum seal thickness, then all around the opening, either an enclosing lining (see Fig. 2) or a board frame (see Fig. 1) of non-flammable drywall or silicate or calcium silicate boards (class A2-s1, d0 or A1 in accordance with EN 13501-1) must be provided.
/ The individual lining parts (at least 2 x 12.5 mm or at least 25 mm thick and in accordance with the minimum seal thickness 150 mm deep) are jammed together in the opening. The joint between flexible wall and lining must be sealed, for example, with plaster filler. Fastening with screws can be dispensed with.
/ Board frames must be at least 50 mm wide. The thickness must be selected in such a manner that the minimum seal thickness of 150 mm can be produced. For fastening, dry-wall screws or chipboard screws that are sufficiently large/long must be used. At least two screws per board must be used, the distance between screws must be a maximum of 150 mm.

Board frame and lining (only required in walls with thickness of less than 150 mm)

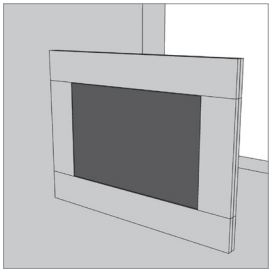


Fig. 1:

Board frame for rigid wall and flexible wall
(arranged either on one side or both sides)

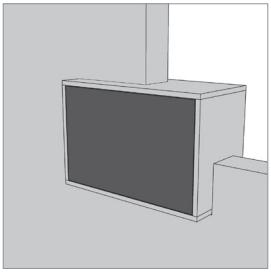
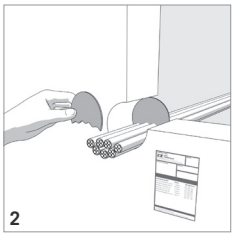
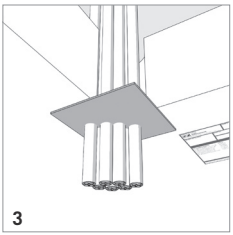
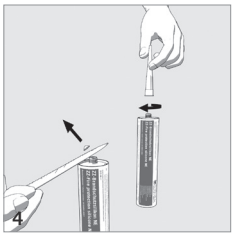


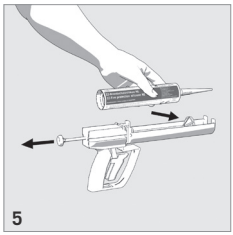
Fig. 2:

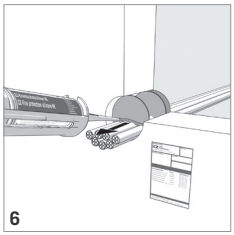
Lining for flexible wall and rigid wall
(either flush on one side or centered)

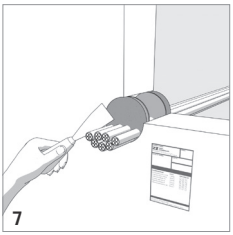












Installation steps

The approval, ETA-13/0123, and the respective national regulations are authoritative for execution of the through penetration firestop system.

1. Clean before installing the component aperture. Surfaces on which the ZZ-Fire protection silicone NE is applied should be free of dirt, oil, wax and grease.
2. Backfill material, consisting of mineral wool, cardboard or polyethylene (e.g. PE round cords) can be used. It must be ensured that the minimum fill depth of the ZZ-Fire protection silicone NE can be complied with.
3. For larger openings in floors the use of a formwork on the underside of the floor (e.g. cardboard) is recommended. This can remain on the through penetration firestop system.
4. Hold the cartridge vertically, cut off the tip with a sharp knife, and screw on the nozzle. The nozzle can be shortened as needed.
5. Insert the cartridge into the intended dispensing gun.
6. ZZ-Fire protection silicone NE must be filled in uniformly into the opening from back to front.
7. A good contact with the component aperture must be established through pressing on and smoothing, e.g. with a smoothing trowel. Smoothing of the surface must occur within the skin-forming time. A smoothing agent that is compatible with silicone sealant may be used.

   Good aeration is recommended during the processing and hardening phase.

Retroactive-installation of cables

/ New penetrating elements are routed through the existing cable penetration seal. Use a suitable cutting/drilling tool to make sufficiently large openings in the penetration seal. (In compliance with the necessary protective measures and safety regulations)
/ Cavities or gaps around the newly added penetrating elements or due to removed cables must be refilled with ZZ-Fire protection silicone NE.
/ The newly added penetrating elements must satisfy all ETA requirements. (e.g. first support).

Supplemental national requirements

Germany

/ The through penetration firestop system must be permanently marked with an identification plate.
/ After the tasks have been concluded a written confirmation of conformance must be given to the client.

System ZZ-Fire protection silicone NE ETA-13/0123

Product data – ZZ-Fire protection silicone NE	
Description:	Elastic RTV-1 silicone (room-temperature cross-linkage, 1-component, oxime system) with halogen-free fire protection additives
Reaction to fire in accordance with DIN EN 13501-1:	Class E
Reaction to fire in accordance with DIN 4102:	DIN 4102-B1 in accordance with AbP P-BWU03-I-16.5.352 (in combination with solid mineral substrates in joints with a width of ≤ 40 mm and a joint depth ≤ 15 mm)
Implementation areas:	ZZ-Fire protection silicone NE can be used as / Cable penetration seal up to a fire resistance class EI 120 and as / Firestop joint seal up to a fire resistance class EI 180 (see ETA-12/0118).
Approvals/certificates:	/ European Technical Approval ETA-13/0123, OIB / EC Certificate of Conformity 0761-CPD-0302, MPA Braunschweig / Emissions-assessed construction product in accordance with DIBt principles in accordance with Approval Z-200.2-48, DIBt / European Technical Approval ETA-12/0118, OIB (firestop joint seal) / EC Certificate of Conformity 0761-CPD-0265, MPA Braunschweig / Emissions-assessed construction product in accordance with DIBt principles in accordance with Approval Z-200.3-27, DIBt / Satisfies the requirements specified in DIN EN ISO 11600 Type F Class 20 LM
Colour:	Cement grey
Content:	310 ml (cartridge) 580 ml (tubular bag)
Transport/storage:	5 °C to 30 °C (dry, in original containers)
Application temperature:	5 °C to 30 °C
Skin-forming time:	Approx. 10 minutes (at 23 °C and 50 % rel. humidity)
Vulcanisation/hardening:	Approx. 2 mm in 24 hours (at 23 °C/50 % rel. humidity)
Viscosity:	Pasty, non-sag
Bulk density:	1000 kg/m³ to 1300 kg/m³
Safety notices:	Contains a mixture of butanone oxime silanes and butanone oxime. Can cause allergic reactions. Safety data sheet available on request.

Testing the fire safety properties under environmental influences

Permissible ambient conditions:

In accordance with ETAG 026-2 or ETAG 026-3:	Use category X Products for use in outdoor areas, as well as indoor areas.

Declaration of Performance

Link to the Declaration of Performance

System component	Link
ZZ-Fire protection silicone NE	www.z-z.eu/dop-12-07

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