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OiB
 Member of EOTA

European technical approval

ETA-13/0093

(English language translation, the original version is in German language)

Handelsbezeichnung
Trade name

Kabelabschottung

„**System ZZ-Brandschutzmasse NE** “
Cable penetration seal
 „*System ZZ-Fire protection mastic NE* “

Zulassungsinhaber
Holder of approval

Karl Zimmermann
Miltzstraße 29
51061 Köln
Germany

Zulassungsgegenstand
 und Verwendungszweck

Kabelabschottung

Generic type and use of construction product

Cable penetration seal

Geltungsdauer vom
Validity from
 bis
to

28.06.2013

27.06.2018

Herstellwerk
Manufacturing plant

Karl Zimmermann GmbH
Marconistraße 7-9
50769 Köln
Germany

Diese Europäische
 technische Zulassung umfasst
This European technical approval contains

16 Seiten inklusive 3 Anhängen

16 pages including 3 Annexes

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by the Österreichisches Institut für Bautechnik in accordance with:
 - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products¹, modified by the Council Directive 93/68/EEC² and Regulation (EC) no. 1882/2003 of the European Parliament and of the Council³;
 - Wiener Bauprodukte- und Akkreditierungsgesetz – WBAG. LGBl. Nr. 30/1996, zuletzt geändert durch das Gesetz LGBl. für Wien Nr. 36/2007;
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁴;
 - Guideline for European technical approval for “Fire Stopping and Fire Sealing Products - : Part 2: Penetration Seals” ETAG no. 026-Part 2, edition 2011.
- 2 The Österreichisches Institut für Bautechnik is authorised to check whether the provisions of this European technical approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European technical approval and for their fitness for the intended use remains with the holder of the European technical approval.
- 3 This European technical approval is not to be transferred to manufacturers or agents of manufacturer other than those indicated on page 1; or manufacturing plants other than those laid down in the context of this European technical approval.
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¹ Official Journal of the European Communities no. L 40, 11.2.1989, p. 12

² Official Journal of the European Communities no. L 220, 30.8.1993, p. 1

³ Official Journal of the European Union no. L 284, 31.10.2003, p. 1

⁴ Official Journal of the European Communities no. L 17, 20.1.1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) and intended use

The Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) is designed and installed in accordance with the ETA-holder’s design and installation instructions, deposited with the Österreichisches Institut für Bautechnik. The Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) consists of the component „ZZ-Masse NE” (ZZ- Mastic NE), which is factory-produced by the ETA-holder or a supplier. The holder is ultimately responsible for the Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE).

1.1 Definition of the construction product

„System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) is a Cable penetration seal based on intumescent fire protection sealant.

Component of Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE)	Characteristics
ZZ-Masse NE (ZZ-Mastic NE)	Product in cartridges on the basis of waterborne polyacrylate with intumescent fire protection additives.

1.2 Intended use, use category and working life

1.2.1 Intended use

The Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) is intended to be used to temporarily or permanently reinstate the fire resistance performance of flexible wall constructions, rigid wall constructions and rigid floor constructions where they have been provided with apertures which are penetrated by sheathed cables.

The thickness of the seal has to be minimum 100 mm or 150 mm (depends on the fire resistance classification, see clause 2.3.2 of the ETA) in walls and 150 mm in floors consisting of one layer of at least 15 mm or 50 mm (depends on the fire resistance classification, see clause 2.3.2 of the ETA) „ZZ-Masse NE” (ZZ-Mastic NE) on each side of the separating element. The maximum area of the seal in flexible walls, rigid walls and rigid floors is 0,01m².

The Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) may be installed only in types of separating elements as specified in the following table.

Separating element	Construction	a) Maximum opening size (width x height) b) Min. thickness of the cable penetration seal
Flexible walls	<ul style="list-style-type: none"> ➤ Timber or steel studs lined on both faces ➤ Minimum thickness 100 mm ➤ This ETA does not cover sandwich panel construction – penetrations in such constructions shall be tested on a case by case basis 	<p><u>See Annex A of the ETA:</u></p> <ul style="list-style-type: none"> a) 100 x 100 [mm] or Ø 113 mm b) 100 mm / 150 mm

Separating element	Construction	c) Maximum opening size (width x height) d) Min. thickness of the cable penetration seal
Rigid walls	<ul style="list-style-type: none"> ➤ Aerated concrete, concrete, reinforced concrete, masonry ➤ Minimum density 450 kg/m³ ➤ Minimum thickness 100 mm 	<u>See Annex B of the ETA:</u> a) 100 x 100 [mm] or Ø 113 mm b) 100 mm / 150 mm
Rigid floors	<ul style="list-style-type: none"> ➤ Aerated concrete, concrete, reinforced concrete ➤ Minimum density 450 kg/m³ ➤ Minimum thickness 150 mm 	<u>See Annex C of the ETA:</u> a) 100 x 100 [mm] or Ø 113 mm b) 150 mm

The Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) can only be configured as specified in the following table.

Penetrating element	Construction characteristics
Cables	<ul style="list-style-type: none"> ➤ Sheathed electrical / telecommunication / optical fibre cables up to a maximum outer diameter of 21 mm

1.2.2 Use category

The Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) is intended for internal use with high humidity, excluding temperatures below 0 °C, and can therefore – according to ETAG 026-Part 2 clause 2.4.12.1.3.3 – be categorized as Type Z₁. Since the requirements for Type Z₁ are met, also the requirements for Type Z₂ are fulfilled.

1.2.3 Working life

The provisions made in this ETA are based on an assumed intended working life of the product for the intended use of 10 years, provided that it is subject to appropriate use and maintenance.

The indications given on the intended working life cannot be interpreted as a guarantee given by the producer or the approval body, but are to be used as a means for selecting the appropriate product in relation to the expected economically reasonable working life of the works.

The real working life might be, in normal use conditions, considerably longer without major degradation affecting the Essential Requirements.

2 Characteristics of the product and methods of verification

2.1 General

The identification tests and the assessment of the fitness for use according to the Essential Requirements were carried out in compliance with the “ETA Guidance no. 026-Part 2” concerning “Penetration Seals” –edition August 2011 (called ETAG 026-Part 2 in this ETA) and with the “EOTA technical Report no. 024” concerning “Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products” –edition November 2006, amended July 2009 (called TR 024 in this ETA).

Clause No.	ETA Clause No.	Characteristic	Expression of product performance
Mechanical resistance and stability			
	2.2	None	Not relevant
Safety in case of fire			
ETAG 2.4.1	2.3.1	Reaction to fire	Classification according to EN 13501-1:2007+A1:2009
ETAG 2.4.2	2.3.2	Resistance to fire	Classification according to EN 13501-2:2007+A1:2009
Hygiene, health and environment			
ETAG 2.4.3	2.4.1	Air permeability (material property)	No Performance Determined
ETAG 2.4.4	2.4.2	Water permeability (material property)	No Performance Determined
ETAG 2.4.5	2.4.3	Release of dangerous substances	Declaration of manufacturer
Safety in use			
ETAG 2.4.6	2.5.1	Mechanical resistance and stability	No Performance Determined
ETAG 2.4.7	2.5.2	Resistance to impact/movement	No Performance Determined
ETAG 2.4.8	2.5.3	Adhesion	No Performance Determined
Protection against noise			
ETAG 2.4.9	2.6.1	Airborne sound insulation	No Performance Determined
Energy economy and heat retention			
ETAG 2.4.10	2.7.1	Thermal properties	No Performance Determined
ETAG 2.4.11	2.7.2	Water vapour permeability	No Performance Determined
General aspects relating to fitness for use			
TR 024 4.2.5	2.8	Exposure conditions	Test results of unexposed and exposed specimens

2.2 Mechanical resistance and stability

Not relevant.

2.3 Safety in case of fire

2.3.1 Reaction to fire

The Cable penetration seal “System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) is tested according to ETAG 026-Part 2 clause 2.4.1, EN ISO 11925-2:2010 and in turn application of FSG recommendation 107:2004 and classified according to EN 13501-1:2007+A1:2009.

Component	Class according to EN 13501-1:2007+A1:2009
ZZ-Masse NE (ZZ-Mastic NE)	E

2.3.2 Resistance to fire

The Cable penetration seal “System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) was tested according to ETAG 026-Part 2 clause 2.4.2, EN 1366-3:2009 in conjunction with EN 1363-1:2012. The tests were conducted under the following conditions:

- Standard flexible walls and standard rigid floors
- Largest blank penetration seal in wall and floor
- Maximum aperture size
- Standard configuration for small cable penetration seals
- Standard service support construction
- Subsequent addition / removal of cables

Based upon the gained test results and the field of direct application specified within EN 1366-3:2009 the Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) has been classified according to EN 13501-2:2007+A1:2009. The fire resistance classifications are listed in the following table.

Penetrating element	Fire resistance classification - Minimum seal thickness $d \geq 100$ mm (wall) and $d \geq 150$ mm (floor) with a filling depth of $b \geq 15$ mm on each side of the separating element						
	E 15 EI 15	EI 20	E 30 EI 30	E 45 EI 45	E 60 EI 60	E 90 EI 90	E 120 EI 120 ¹⁾
Sheathed electrical/ telecommunication/optical fibre cables up to a maximum diameter of 121 mm							

1) For fire resistance classification EI 120 the thickness of the penetration seal has to be $d \geq 150$ mm (wall and floor) with a filling depth of $b \geq 50$ mm on each side of the sealing

General

The Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) can be used in apertures in walls and floors according to clause 1.2.1 of the ETA.

The penetration of cables in accordance with clause 1.2.1 of the ETA is allowed. The total cross section of the installations must not be more than 60 % of the opening size of the seal.

All types of cables – in flexible walls, rigid walls and rigid floors – have to be supported on both sides of the sealing by steel cable trays (perforated or non-perforated), steel ladders or alternative service support constructions according to the ETA-holder’s installation instructions. Service support constructions or other parts must not penetrate the surface of the seal.

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2.5 Safety in use

2.5.1 Mechanical resistance of stability

No Performance Determined.

2.5.2 Resistance to impact/movement

No Performance Determined.

2.5.3 Adhesion

No Performance Determined.

2.6 Protection against noise

2.6.1 Airborne sound insulation

No Performance Determined.

2.7 Energy economy and heat retention

2.7.1 Thermal properties

No Performance Determined.

2.7.2 Water vapour permeability

No Performance Determined.

2.8 General aspects relating to fitness for use

The Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) was tested according to ETAG 026-Part 2 clause 2.4.12.

The Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) fulfil the requirements for the intended use category.

The Cable penetration seal „System ZZ-Brandschutzmasse NE” (System ZZ-Fire protection mastic NE) is therefore appropriate for internal use with high humidity, excluding temperatures below 0 °C, and can – according to ETAG 026-Part 2 clause 2.4.12.1.3.3 – be categorized as Type Z₁. Since the requirements for Type Z₁ are met, also the requirements for Type Z₂ are fulfilled.

3 Evaluation of Conformity and CE Marking

3.1 Attestation of Conformity system

According to the Decision 1999/454/EC of the European Commission⁵ system 1 of the attestation of conformity applies for fire-resistance-performance. This system of attestation of conformity is to be described in the following:

System 1: Certification of the conformity of the product by a Notified Certification Body on the basis of:

⁵ Official Journal of the European Communities no. L 178, 14.7.1999, p. 52

- a) Tasks of the manufacturer
 - 1) Factory Production Control
 - 2) Further testing of samples taken at the factory in accordance with a prescribed control plan
- b) Tasks of the Notified Body
 - 3) Initial type-testing of the product
 - 4) Initial inspection of factory and of factory production control
 - 5) Continuous surveillance, assessment and approval of factory production control

Additionally according to the Decision 2001/596/EC of the European Commission⁶ system 3 of the attestation of conformity is to be used in relation to the reaction-to-fire performance. This system of attestation of conformity is to be described in the following:

System 3: Declaration of conformity of the product by the manufacturer:

- a) Tasks of the manufacturer
 - 1) Factory Production Control
- b) Tasks of the Notified Body
 - 2) Initial type-testing of the product

3.2 Responsibilities

3.2.1 Tasks of the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European technical approval.

The manufacturer shall draw up and keep up-to-date documents defining the factory production control that applies. The documentation to be carried out by the manufacturer and the applicable procedures shall be appropriate to the product and manufacturing process. The factory production control shall ensure the conformity of the product to an appropriate level. This involves:

- a) the preparation of documented procedures and instructions relating to factory production control operations.
- b) the effective implementation of these procedures and instructions.
- c) the recording of these procedures and their results.
- d) the use of these results to correct any deviations, repair the effects of such deviations, treat any resulting instances of non-conformity and, if necessary, revise the factory production control to rectify the cause of non-conformity.
- e) a procedure to ensure that both the approval Body and the Notified (Certification) Bodies are advised before any significant change to the product, its components or manufacturing process, is made.
- f) a procedure to ensure that personnel involved in the production processes and the quality control procedures are qualified and adequately trained to carry out their required tasks.
- g) that all testing and measuring equipment is maintained and up to date calibration records are documented.
- h) maintenance of records to ensure every batch produced is clearly labelled with the batch number, which allows traceability to its production to be identified.

⁶ Official Journal of the European Communities no. L 209, 2.8.2001, p. 33

The manufacturer may only use components stated in the technical documentation of this European technical approval.

For the components which the ETA-holder does not manufacture by himself, he shall make sure that factory production control carried out by the other manufacturers gives the guaranty of the components compliance with the European technical approval.

The factory production control and the provisions taken by the ETA-holder for components not produced by himself shall be in accordance with the control plan⁷ relating to this European technical approval which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited at the Österreichisches Institut für Bautechnik.

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

3.2.1.2 Other tasks of the manufacturer

The manufacturer shall provide a technical data sheet and an installation instruction with the following minimum information:

- technical data sheet:
 - a) Field of application:
 - 1) Building elements for which the penetration seal is suitable, type and properties of the building elements like minimum thickness, density, and – in case of lightweight constructions – the construction requirements.
 - 2) Services for which the penetration seal is suitable, type and properties of the services like material, diameter, thickness etc. in case of pipes including insulation materials; necessary/allowed supports/fixings (e.g. cable trays).
 - 3) Limits in size, minimum thickness etc. of the penetration seal.
 - b) Construction of the penetration seal including the necessary components and additional products (e.g. backfilling material) with clear indication whether they are generic or specific.
- Installation instruction:
 - a) Steps to be followed.
 - b) Procedure in case of retrofitting.

The manufacturer shall, on the basis of a contract, involve a body (bodies) which is (are) notified for the tasks referred to in section 3.1 in the field of approval product in order to undertake the actions laid down in section 3.3. For this purpose, the control plan referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the Notified Body or Bodies involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval

3.2.2 Tasks of the Notified Bodies

The Notified Body (Bodies) shall perform the:

- initial type-testing of the product
The results of the tests performed as part of the assessment for the European technical approval can be used unless there are changes in the production line or plant. In such cases, the necessary initial type testing has to be agreed between the Österreichisches Institut für Bautechnik and the Notified Bodies involved.
- initial inspection of factory and of factory production control
The Notified Body (Bodies) shall ascertain that, in accordance with the control plan, the fac-

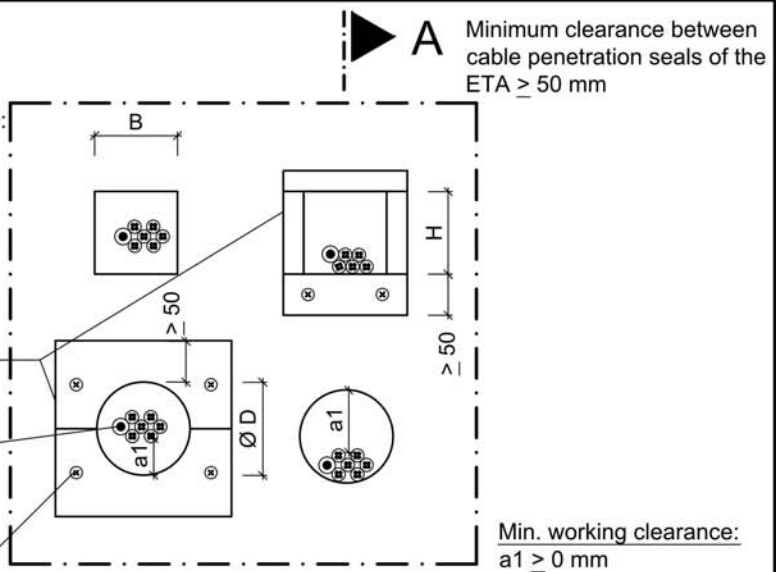
⁷ The control plan is a confidential part of the European technical approval and only handed over to the Notified Body or Bodies involved in the procedure of conformity.

View:

For Fire resistance classification EI 120:
Lining (min. two layers of gypsum board of thickness $\geq 12,5$ mm or min. one layer of silicate/calcium silicate board of thickness ≥ 25 mm) alternatively frame made from gypsum board or silicate/ calcium silicate board ≥ 50 mm width around the opening (see clause 2.3.2 of the ETA)

Cables

Fixing according to the ETA - holder's installation instruction



Cross Section A-A:

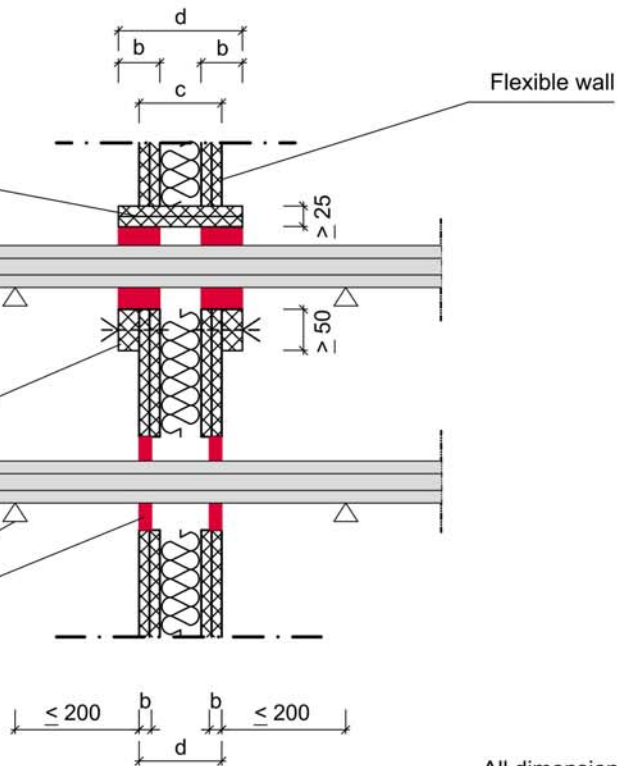
For Fire resistance classification EI 120:
Lining made from gypsum board, or silicate/ calcium silicate board

For Fire resistance classification EI 120:
Increase the thickness of the wall either on one or on both sides to at least min. seal thickness by fitting a board frame (≥ 50 mm wide) around the opening

Cables

Service support construction (see clause 2.3.2 of the ETA)

"ZZ-Mastic NE"



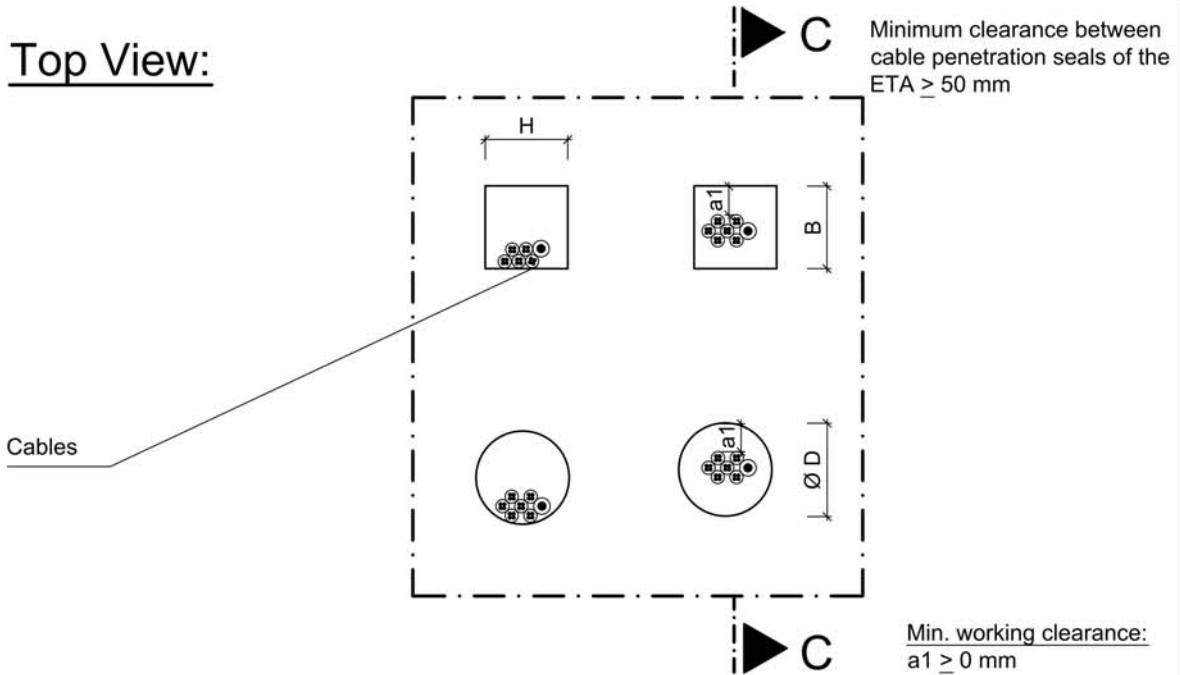
All dimensions in mm

Separating element	Fire resistance classification	Wall thickness c [mm]	Max. opening size H [mm] x B [mm] / Ø D [mm]	Seal Thickness d and Filling depth b [mm]
Flexible wall	see clause 2.3.2 of the ETA	≥ 100	≤ 100 x ≤ 100 / ≤ 113	see clause 2.3.2 of the ETA

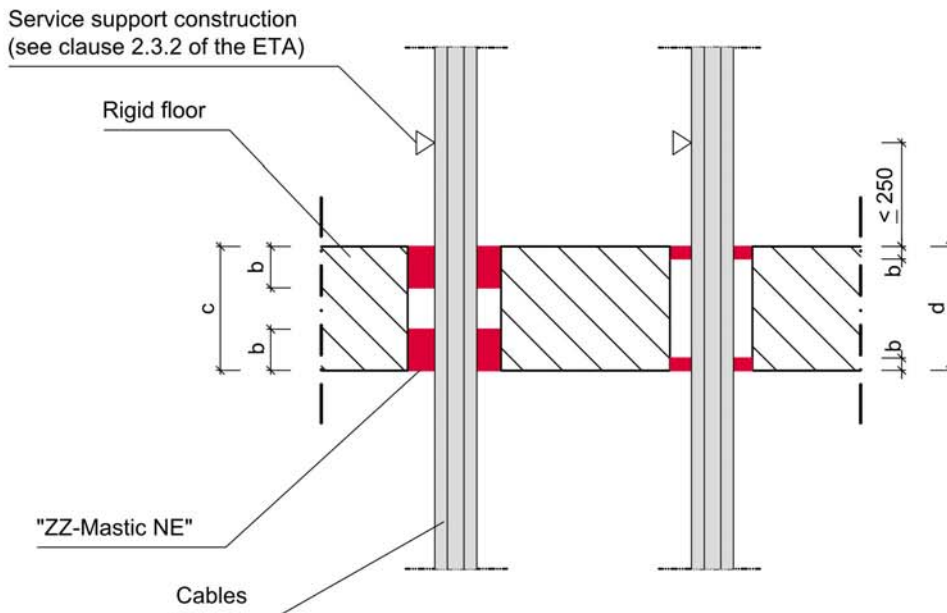
Cable penetration seal
"ZZ-Fire protection mastic NE"
- Installation in flexible wall $c \geq 100$ mm -

ANNEX A

Top View:



Cross Section C-C:



All dimensions in mm

Separating element	Fire resistance classification	Floor thickness c [mm]	Max. opening size H [mm] x B [mm] / Ø D [mm]	Seal Thickness d and Filling depth b [mm]
Rigid floor	see clause 2.3.2 of the ETA	≥ 150	$\leq 100 \times \leq 100 / \leq 113$	see clause 2.3.2 of the ETA

Mixed penetration seal
"ZZ-Fire protection mastic NE"
- Installation in rigid floor $c \geq 150$ mm -

ANNEX C