



Zulassung

ISITHERM Rohrmanschette NE
„System ZZ“
ETA-13/0117
Gültigkeit bis 27. Juni 2018





Österreichisches Institut für Bautechnik
 Schenkenstrasse 4 | 1010 Vienna | Austria
 T +43 1 533 65 50 | F +43 1 533 64 23
 mail@oib.or.at | www.oib.or.at



European technical approval

ETA-13/0117

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

Handelsbezeichnung
Trade name

Rohrabschottung
„System ZZ-Brandschutzmanschette NE“
Pipe penetration seal
„System ZZ-Fire protection collar NE“

Zulassungsinhaber
Holder of approval

Karl Zimmermann
Miltzstraße 29
51061 Köln
Germany

Zulassungsgegenstand
 und Verwendungszweck

Rohrabschottung

Generic type and use of construction product

Pipe 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

23 Seiten inklusive 10 Anhängen

23 pages including 10 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.
- 4 This European technical approval may be withdrawn by the Österreichisches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.
- 5 Reproduction of this European technical approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of the Österreichisches Institut für Bautechnik. In this case, partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European technical approval.
- 6 The European technical approval is issued by the approval body in its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

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 Pipe penetration seal „System ZZ-Brandschutzmanschette NE” (System ZZ-Fire protection collar NE) and intended use

„System ZZ-Brandschutzmanschette NE” (System ZZ-Fire protection collar NE) is a pipe closure device installed around plastic pipes to form a penetration seal to reinstate the fire resistance performance of wall and floor constructions, where they have been provided with apertures for the penetration of services.

1.1 Definition of the construction product

„System ZZ-Brandschutzmanschette NE” (System ZZ-Fire protection collar NE) is supplied in several sizes (see table below).

The collars “ZZ-Manschette NE 32” (ZZ-Collar NE 32) and “ZZ-Manschette NE 40” (ZZ-Collar NE 40) are suitable for pipe outside diameters 32 mm and 40 mm.

The collar “ZZ-Manschette NE 50-110” (ZZ-Collar NE 50-110) is suitable for pipe outside diameters of 110 mm and can be cut/bend to a length that fits pipe outside diameters 50 mm, 75 mm and 90 mm. The collar “ZZ-Manschette NE 125-160” (ZZ-Collar NE 125-160) is suitable for pipe outside diameters of 160 mm and can be cut/bend to a length that fits pipe outside diameters 150 mm, 140 mm and 125 mm.

The collar is installed underneath floors and on both sides of walls. „ZZ-Manschette NE” (ZZ-Collar NE) has to be fixed with screws and anchors or threaded rods, washers and nuts (surface installation) or with mortar/plaster inside of walls/floors (mortar/plaster-embedded installation).

Components of Pipe penetration seal „System ZZ-Brandschutzmanschette NE” (System ZZ-Fire protection collar NE)	For pipes with outside diameter	Characteristics
ZZ-Manschette NE 32 (ZZ-Collar NE 32)	32 mm	ZZ-Manschette NE (ZZ-Collar NE) consists of a steel housing and an intumescent inlay
ZZ-Manschette NE 40 (ZZ-Collar NE 40)	40 mm	
ZZ-Manschette NE 50-110 (ZZ-Collar NE 110)	50 mm - 110 mm	
ZZ-Manschette NE 125-160 (ZZ-Collar NE 160)	125 mm - 160 mm	

1.2 Intended use, use category and working life

1.2.1 Intended use

The Pipe penetration seal „System ZZ-Brandschutzmanschette NE” (System ZZ-Fire protection collar NE) is intended to be used to 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 plastic pipes.

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

Separating element	Construction
Flexible walls	<ul style="list-style-type: none"> ➤ Timber or steel studs lined on both faces ➤ For timber stud walls there must be a minimum distance of 100 mm of the seal to any timber stud. The cavity between timber stud and seal must be closed completely with insulation with classification A1 or A2-s1,d0 according to EN 13501-1:2007 + A1:2009. The dimensions of the timber studs shall be $\geq 50 \text{ mm} \times 75 \text{ mm}$ (breadth / depth). ➤ Minimum thickness 100 mm ➤ Required fire resistance classification acc. to EN 13501-2:2007+A1:2009 ➤ This ETA does not cover sandwich panel construction – penetrations in such constructions shall be tested on a case by case basis
Rigid walls	<ul style="list-style-type: none"> ➤ Aerated concrete, concrete, reinforced concrete, masonry ➤ Minimum density 450 kg/m³ ➤ Minimum thickness 100 mm ➤ Required fire resistance classification acc. to EN 13501-2:2007+A1:2009
Rigid floors	<ul style="list-style-type: none"> ➤ Aerated concrete, concrete, reinforced concrete ➤ Minimum density 550 kg/m³ ➤ Minimum thickness 150 mm ➤ Required fire resistance classification acc. to EN 13501-2:2007+A1:2009

The Pipe penetration seal „System ZZ-Brandschutzmanschette NE” (*System ZZ-Fire protection collar NE*) can only be configured as specified in the following table.

Penetrating element	Construction characteristics
Plastic pipes	<ul style="list-style-type: none"> ➤ PVC-U pipes acc. to EN ISO 1452-1 and DIN 8061/DIN 8062 with an outside diameter up to 160 mm (U/U), (C/U), (U/C), (C/C). For wall thickness see Annex D. ➤ Test results from PVC-U pipes according to EN 1452-1 are also valid for PVC-U pipes according to EN 1329-1 and EN 1453-1 as well as PVC-C pipes according to EN 1566. ➤ PE-HD pipes acc. to EN 1519-1:1999 and DIN 8074/DIN 8075 with an outside diameter up to 160 mm (U/U), (C/U), (U/C), (C/C). For wall thickness see Annex C. ➤ Test results from PE-HD pipes according to EN 1519-1 are also valid for PE pipes according to EN 12201-2, EN 1519-1 and EN 12666-1, ABS pipes according to EN 1455-1 as well as SAN+PVC pipes according to EN 1565-1.

1.2.2 Use category

The Pipe penetration seal „System ZZ-Brandschutzmanschette NE” (*System ZZ-Fire protection collar 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 January 2008 (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	Durability and serviceability	Use category Z ₁

2.2 Mechanical resistance and stability

Not relevant.

2.3 Safety in case of fire

2.3.1 Reaction to fire

The inlay of Pipe penetration seal “System ZZ-Brandschutzmanschette NE” (System ZZ-Fire protection collar NE) was tested according to ETAG 026-Part 2 clause 2.4.1, EN ISO 11925-2:2002 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
Inlay of ZZ-Manschette NE (ZZ-Collar NE)	E

2.3.2 Resistance to fire

The Pipe penetration seal “System ZZ-Brandschutzmanschette NE” (System ZZ-Fire protection collar NE) was tested according to ETAG 026-Part 2 clause 2.4.2, prEN 1366-3.2:N185:2007-07 and EN 1366-3:2009 in conjunction with EN 1363-1:1999. It was installed within apertures in flexible walls and aerated concrete floors.

For details of classification and plastic pipes covered see Annex C and D and Annex H and I.

The Pipe penetration seal may only be penetrated by the services listed in Annex C and D and Annex H and I. Other parts or support constructions must not penetrate the Pipe penetration seal. For details of suitable wall and floor constructions see 1.2.1. The separating element must be classified in accordance with EN 13501-2 for the required fire resistance period.

The service support construction must be fixed to the building element containing the Pipe penetration seal or a suitable adjacent building element, on both sides of the penetration in such a manner that in the case of fire, no additional load is imposed on the seal. Furthermore it is assumed that this support is maintained on the unexposed side, for the required period of fire resistance.

Specific considerations:

- Pipes must be perpendicular to the seal surface.
- It is assumed that compressed air systems are switched off by other means in the case of fire.
- The function of the Pipe penetration seal in case of pneumatic dispatch systems, pressurised air systems etc. is guaranteed only when the systems are shut off in case of fire.
- The ETA does not address any risks associated with leakage of dangerous liquids or gases caused by failure of the pipe(s) in case of fire.
- The durability assessment does not take account of the possible effect of substances permeating through the pipe on the penetration seal.
- The pipe end configuration U/U covers also U/C, C/U and C/C. For further information refer to national regulations.
- The risk of spread of fire downwards caused by burning material, which drips through a pipe downwards to floors below, cannot be assessed with tests according to EN 1366-3 and is therefore not part of the assessment of this ETA.

2.4 Hygiene, health and environment

2.4.1 Air permeability

No Performance Determined.

2.4.2 Water permeability

No Performance Determined.

2.4.3 Release of dangerous substances

According to the manufacturer's declaration, the product specification has been compared with the list of dangerous substances of the European Commission to verify that it does not contain such substances above the acceptable limits.

A written declaration in this respect was submitted by the ETA-holder.

In addition to the specific clauses relating to dangerous substances contained in this ETA, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Directive, these requirements need also to be complied with, when and where they apply.

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

Pipe penetration seal „System ZZ-Brandschutzmanschette NE” (System ZZ-Fire protection collar NE) was tested according to ETAG 026-Part 2 clause 2.4.12 and fulfil the requirements for the intended use category.

The Pipe penetration seal „System ZZ-Brandschutzmanschette NE” (System ZZ-Fire protection collar 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:

- 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

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

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

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.

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.

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.

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 factory (in particular the employees and the equipment) and the factory production control are suitable to ensure continuous and orderly manufacturing of the components according to the specifications mentioned in clause 2 of this ETA.
- continuous surveillance, assessment and approval of factory production control
The Notified Body (Bodies) shall visit the factory at least once a year for surveillance of this manufacturer having a FPC system complying with a quality management system covering the manufacturing of the approval product components. It has to be verified that the system of factory production control and the specified automated manufacturing process are maintained taking into account the control plan

These tasks shall be performed in accordance with the provisions laid down in the control plan of this European technical approval.

The Notified Body (Bodies) shall retain the essential points of its (their) actions referred to above and state the results obtained and conclusions drawn in written report.

- In the case of Attestation of Conformity system 1:
The Notified Body involved by the manufacturer shall issue an EC certificate of conformity of the product stating the conformity with the provisions of this European technical approval.

In cases where the provisions of the European technical approval and its control plan are no longer fulfilled, the Certification Body shall withdraw the certificate of conformity and inform the Österreichisches Institut für Bautechnik without delay.

3.3 CE marking

The CE marking shall be affixed either on the product itself, on a label attached to it, on its packaging or on the commercial documents accompanying the components of the product. The letters « CE » shall be followed by the identification number of the Notified Body involved and be accompanied by the following additional information:

- the name or identifying mark and address of the ETA-holder
- the last two digits of the year in which the CE marking was affixed
- the number of the EC certificate of conformity for the product
- the number of the European technical approval
- the number of the ETAG (ETAG N° 026 part 2)
- the designation of the product (trade name)
- the use category in accordance with the ETA section 1 and 2
- for other relevant characteristics (e.g. resistance to fire) see ETA-13/0117

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

The European technical approval is issued for the product on the basis of agreed data/information, deposited with the Österreichisches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to the Österreichisches Institut für Bautechnik before the changes are introduced. The Österreichisches Institut für Bautechnik will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alterations to the ETA, shall be necessary.

4.2 Installation

The ETA is issued under the assumption that the installation of the approval product shall be in accordance with the manufacturer's technical literature.

The collar has to be installed underneath floors and on both sides of walls.

Surface installation:

1. Select the collar size or cut/bend the collar to the necessary length that fits the pipe outside diameter.
2. It is recommended to install a sound insulation (PE-foam strip, max. thickness 5 mm) around the plastic pipe over the entire wall or floor thickness and between plastic pipe and „ZZ-

Manschette NE" (ZZ-Collar NE). In some Member States, the classification of sound insulation according to EN 13501-1:2007+A1:2009 or a national standard might be necessary for the use in Pipe penetration seals.

3. The annular space between plastic pipe and periphery of the opening (0 mm to 50 mm) has to be filled with gypsum plaster or mineral mortar over the full thickness of the wall/floor. Alternatively the annular space could be sealed on both sides of the separating element with min. 25 mm gypsum plaster or mineral mortar backfilled with mineral wool with a minimum compacted apparent density of 40 kg/m³ and class A1 or A2 according to EN 13501-1:2007+A1:2009.
4. Remove plaster/mortar or dust from the pipe.
5. Put „ZZ-Manschette NE" (ZZ-Collar NE) around the plastic pipe and fasten it by passing the collar's tab through the eyelets in the collar and bending the tab back afterwards.
6. Bend the fastening tabs back and push „ZZ-Manschette NE" (ZZ-Collar NE) to the surface of the separating element. Fix „ZZ-Manschette NE" (ZZ-Collar NE) by using screws and anchors or threaded rods, washers and nuts according to the ETA holder's installation instructions. For the number of the necessary fastening points see ANNEX J of the ETA.
7. If required by national regulations place an identification mark with the necessary information next to the Pipe penetration seal „System ZZ-Brandschutzmanschette NE" (System ZZ-Fire protection collar NE).

Mortar/plaster-embedded installation:

1. Select the collar size or cut/bend the collar to the necessary length that fits the pipe outside diameter.
2. It is recommended to install a sound insulation (PE-foam strip, max. thickness 5 mm) around the plastic pipe over the entire wall or floor thickness and between plastic pipe and „ZZ-Manschette NE" (ZZ-Collar NE). In some Member States, the classification of sound insulation according to EN 13501-1:2007+A1:2009 or a national standard might be necessary for the use in Pipe penetration seals.
3. Remove plaster/mortar or dust from the pipe.
4. Put „ZZ-Manschette NE" (ZZ-Collar NE) around the plastic pipe and fasten it by passing the collar's tab through the eyelets in the collar and bending the tab back afterwards
5. Push „ZZ-Manschette NE" (ZZ-Collar NE) in the aperture so that 30 mm of the collar is projecting.
8. The annular space between plastic pipe/ „ZZ-Manschette NE" (ZZ-Collar NE) and periphery of the opening (0 mm to 50 mm) has to be filled with gypsum plaster or mineral mortar over the full thickness of the wall/floor. Alternatively the annular space could be sealed on both sides of the separating element with min. 25 mm gypsum plaster or mineral mortar backfilled with mineral wool with a minimum compacted apparent density of 40 kg/m³ and class A1 or A2 according to EN 13501-1:2007+A1:2009.
6. If required by national regulations place an identification mark with the necessary information next to the Pipe penetration seal „System ZZ-Brandschutzmanschette NE" (System ZZ-Fire protection collar NE).

5 Indications to the manufacturers

5.1 Packaging, transport and storage

In the accompanying document and/or on the packaging the manufacturer shall give information as to transport and storage.

At least the following shall be indicated: storing temperature, maximum duration of storage and required data related to minimum temperature for transport and storage.

5.2 Use, maintenance and repair

The product shall be installed and used as described in this ETA.

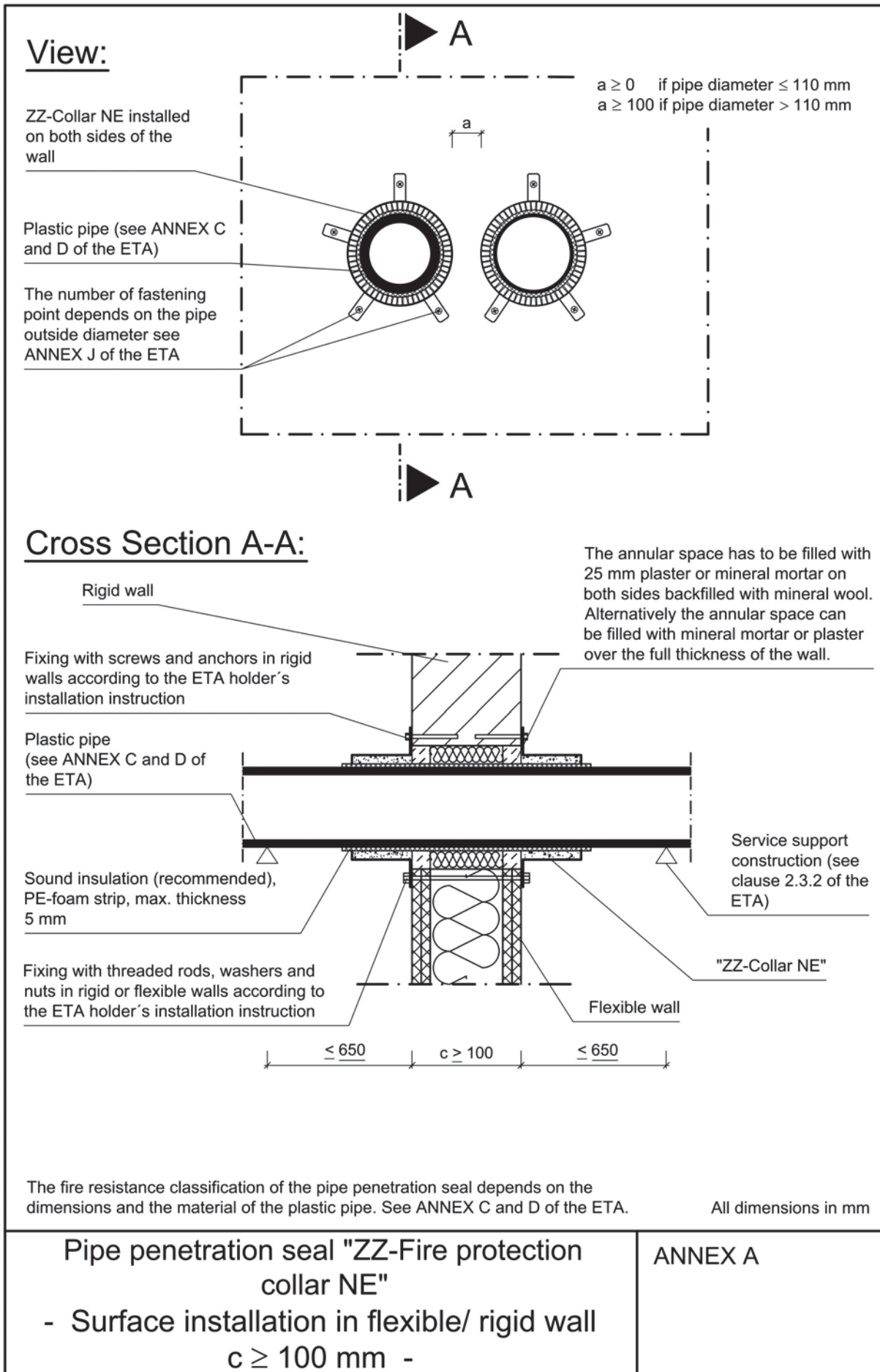
The assessment of the fitness for use is based on the assumption that necessary maintenance and repair if required is carried out in accordance with the manufacturer's instructions during the assumed intended working life.

On behalf of Österreichisches Institut für Bautechnik

The original document is signed by:

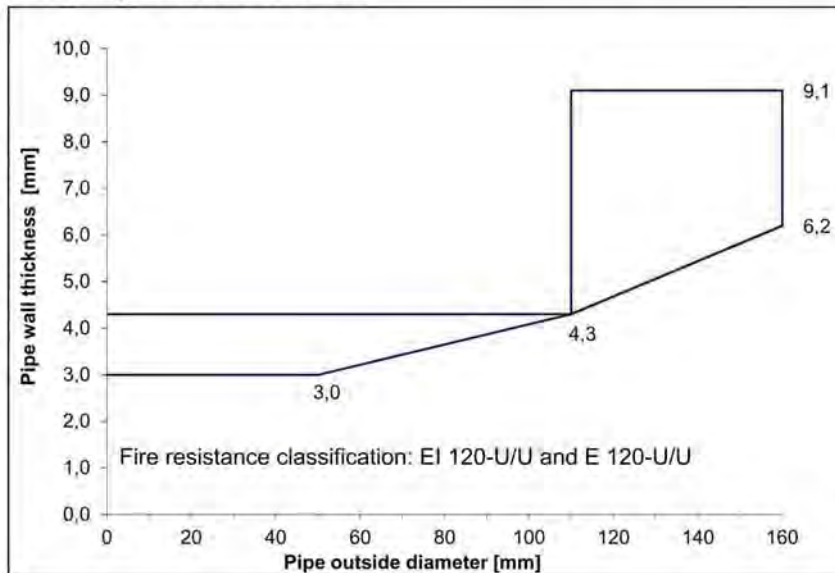
Rainer Mikulits
Managing Director

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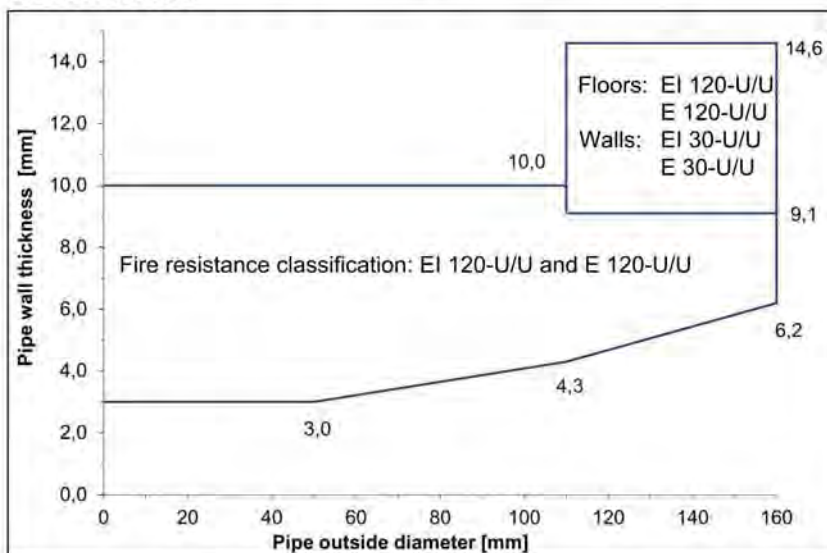


Field of application of plastic pipes:

Plastic pipes made of PE-HD, PE, ABS, SAN+PVC
according to 1.2.1 of the ETA



Plastic pipes made of PE according to EN 12201-2 and
DIN 8074/8075



The pipe end configuration U/U covers also U/C, C/U and C/C. For further information refer to national regulations.

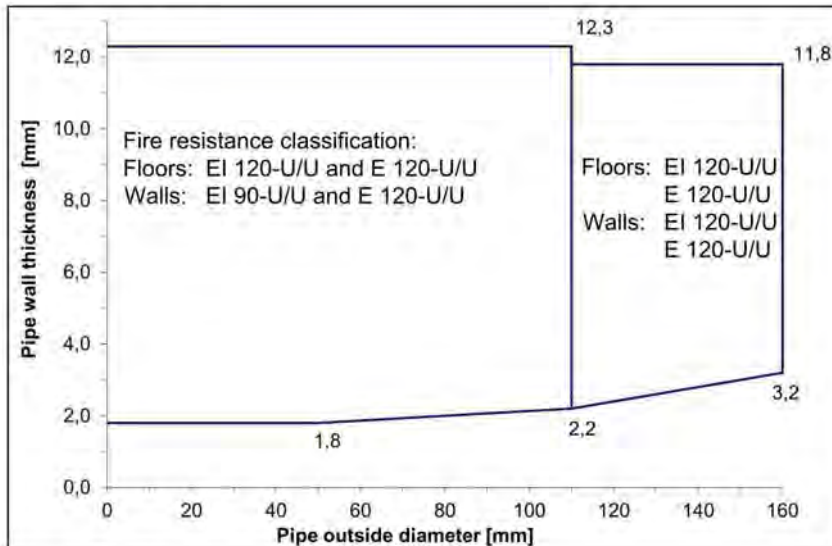
Pipe penetration seal "ZZ-Fire protection collar NE"

- Surface installation: Field of application of plastic pipes -

ANNEX C

Field of application of plastic pipes:

Plastic pipes made of PVC-U and PVC-C according to
1.2.1 of the ETA



Additional for walls:

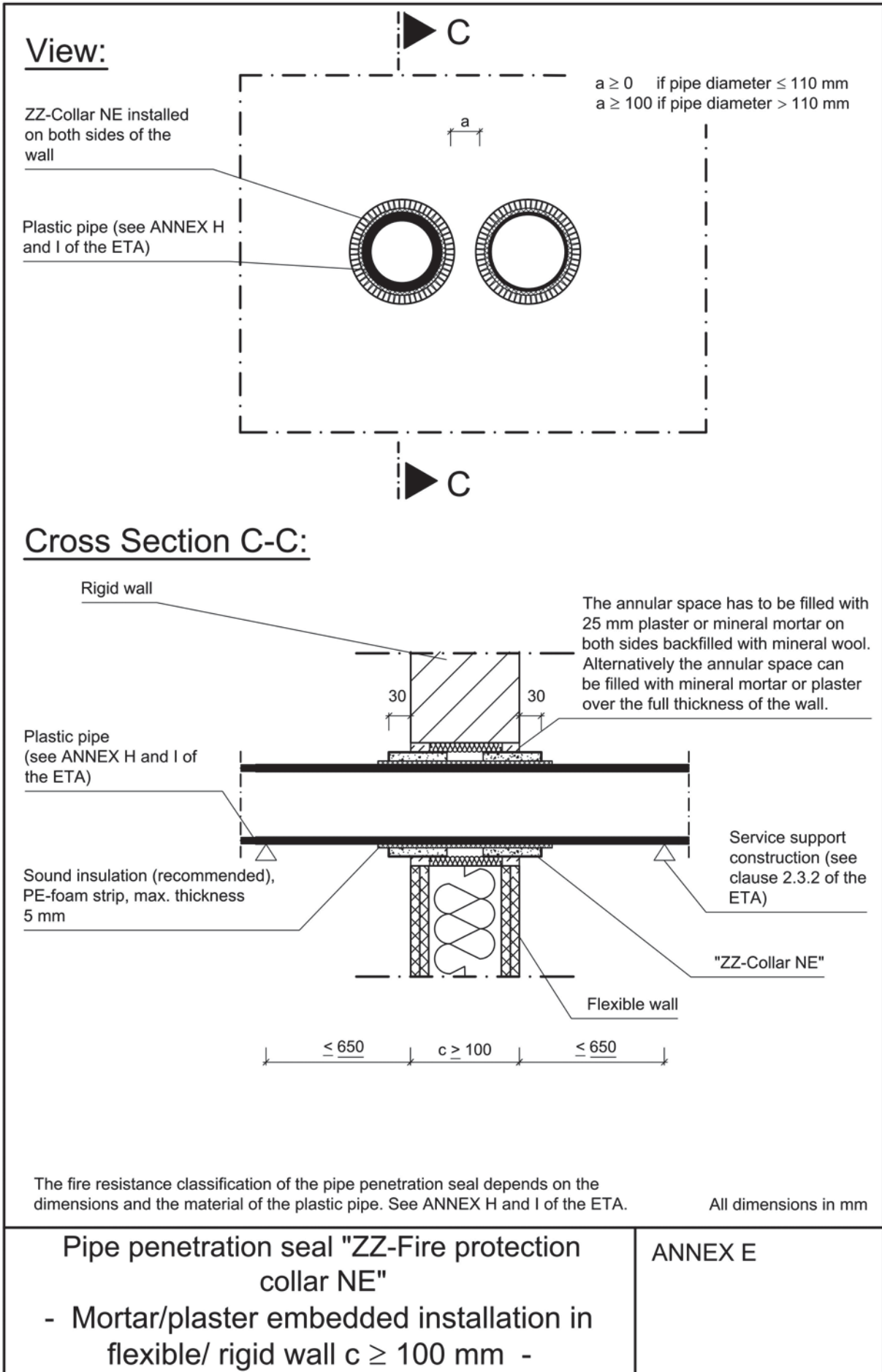
For pipes with outside diameter ≤ 110 mm and pipe wall thickness $\leq 2,2$ mm
the fire resistance classification in walls is EI 120-U/U.

The pipe end configuration U/U covers also U/C, C/U and C/C. For further
information refer to national regulations.

Pipe penetration seal "ZZ-Fire protection
collar NE"

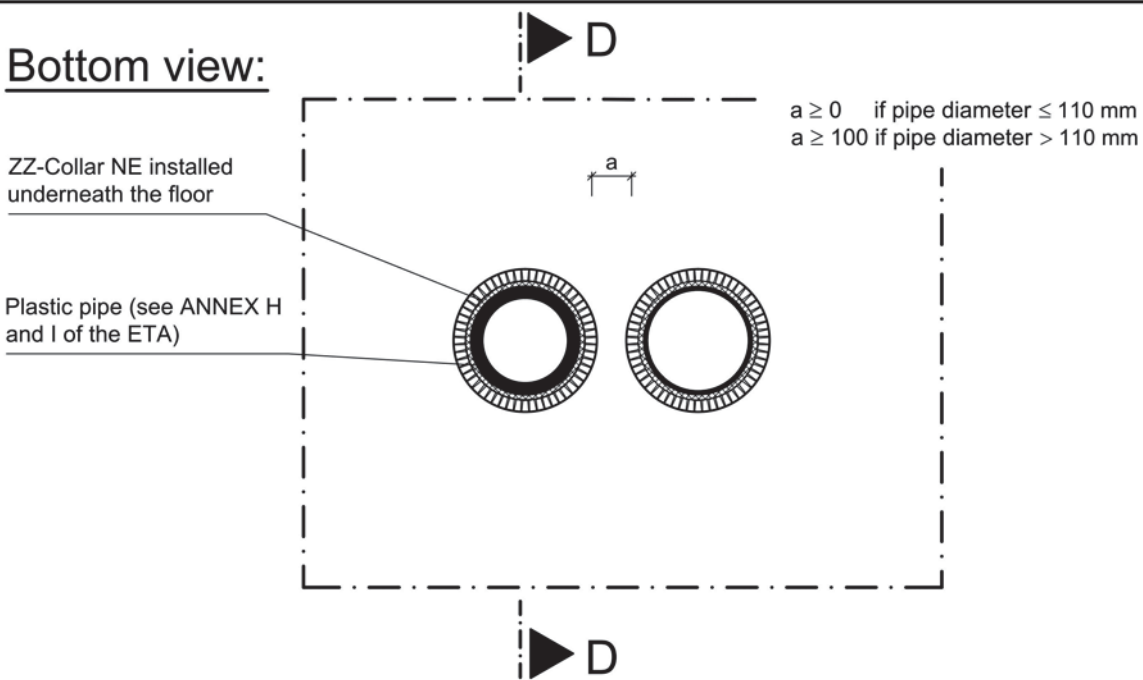
- Surface installation: Field of application
of plastic pipes -

ANNEX D



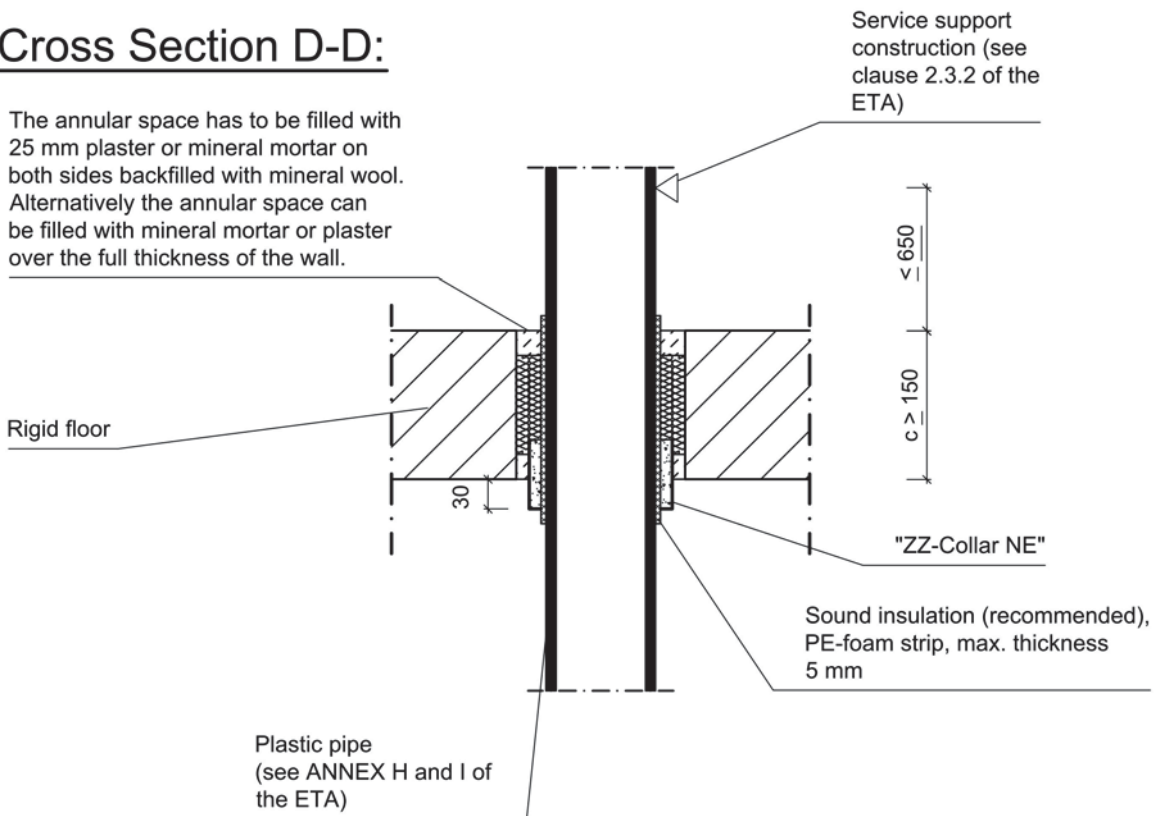
electronic copy

Bottom view:



Cross Section D-D:

The annular space has to be filled with 25 mm plaster or mineral mortar on both sides backfilled with mineral wool. Alternatively the annular space can be filled with mineral mortar or plaster over the full thickness of the wall.



The fire resistance classification of the pipe penetration seal depends on the dimensions and the material of the plastic pipe. See ANNEX H and I of the ETA.

All dimensions in mm

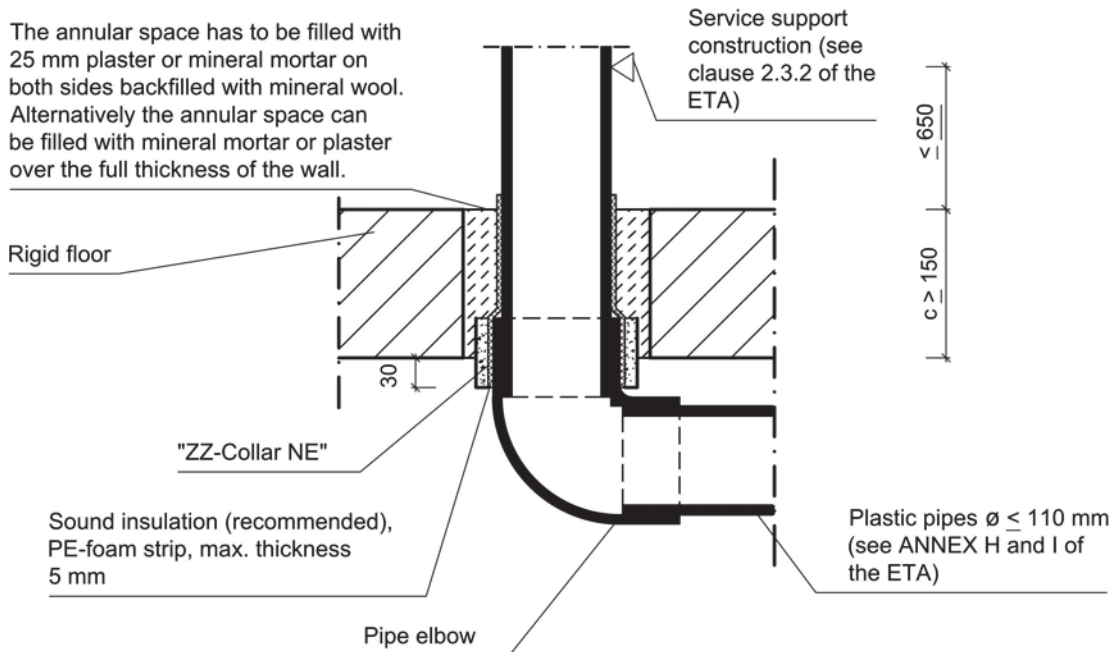
Pipe penetration seal "ZZ-Fire protection collar NE"

- Mortar/plaster embedded installation in rigid floor $c \geq 150$ mm -

ANNEX F

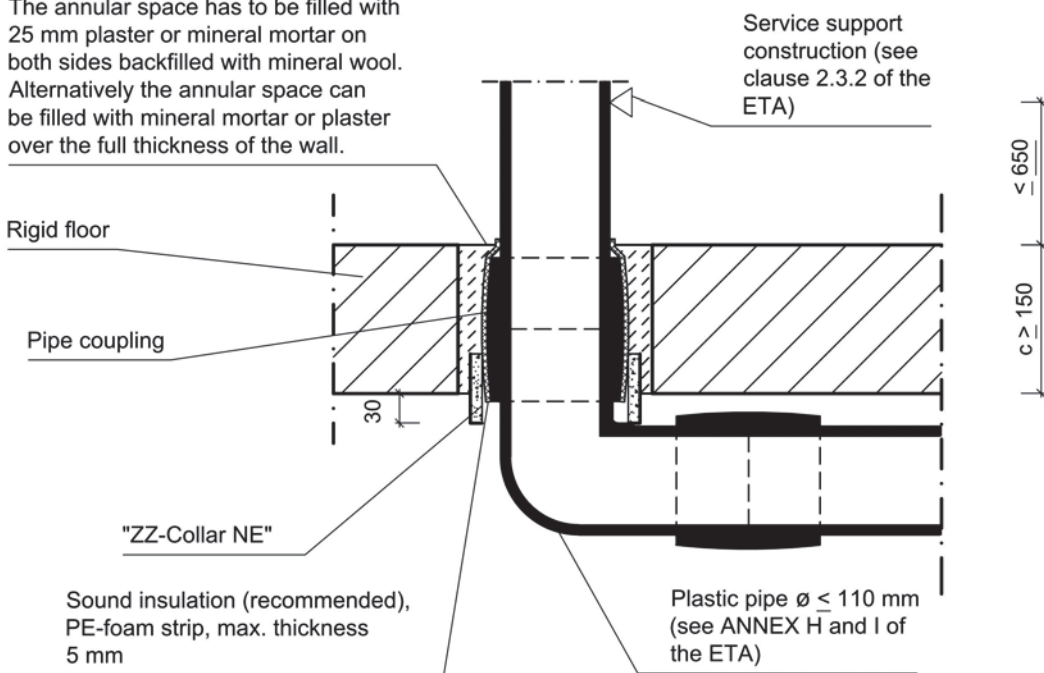
Installation around pipe elbows (plastic pipes $\varnothing \leq 110$ mm)

The annular space has to be filled with 25 mm plaster or mineral mortar on both sides backfilled with mineral wool. Alternatively the annular space can be filled with mineral mortar or plaster over the full thickness of the wall.



Installation around pipe couplings (plastic pipes $\varnothing \leq 110$ mm)

The annular space has to be filled with 25 mm plaster or mineral mortar on both sides backfilled with mineral wool. Alternatively the annular space can be filled with mineral mortar or plaster over the full thickness of the wall.



The fire resistance classification of the pipe penetration seal depends on the dimensions and the material of the plastic pipe. See ANNEX H and I of the ETA.

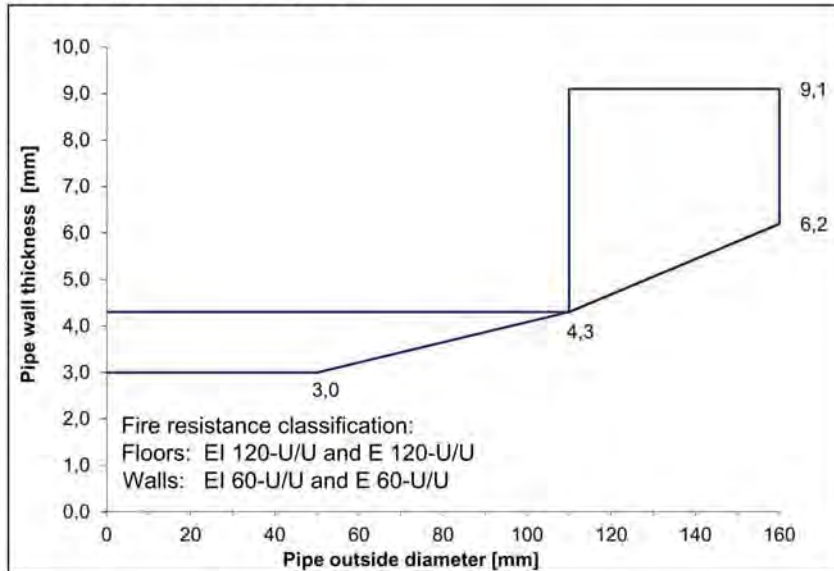
All dimensions in mm

Pipe penetration seal "ZZ-Fire protection collar NE"
- Installation around pipe fittings (mortar/plaster embedded installation) in rigid floor -

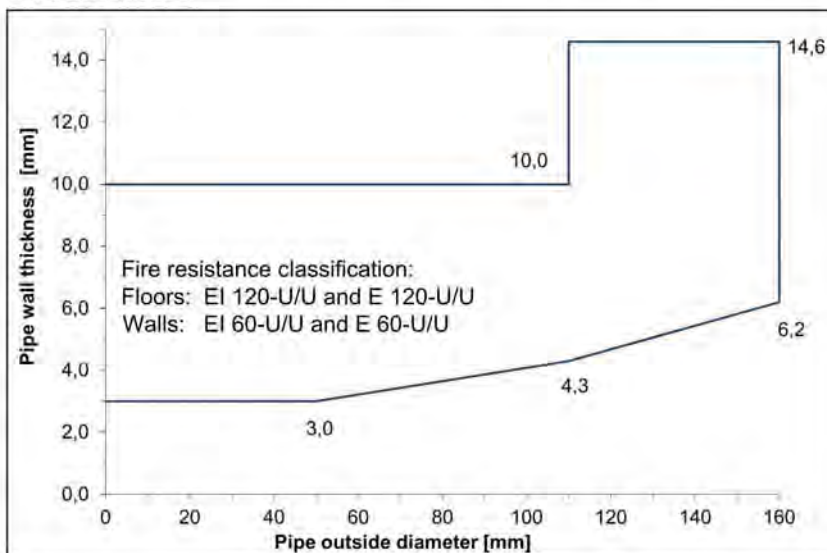
ANNEX G

Field of application of plastic pipes:

Plastic pipes made of PE-HD, PE, ABS, SAN+PVC
according to 1.2.1 of the ETA



Plastic pipes made of PE according to EN 12201-2 and
DIN 8074/8075



The pipe end configuration U/U covers also U/C, C/U and C/C. For further information refer to national regulations.

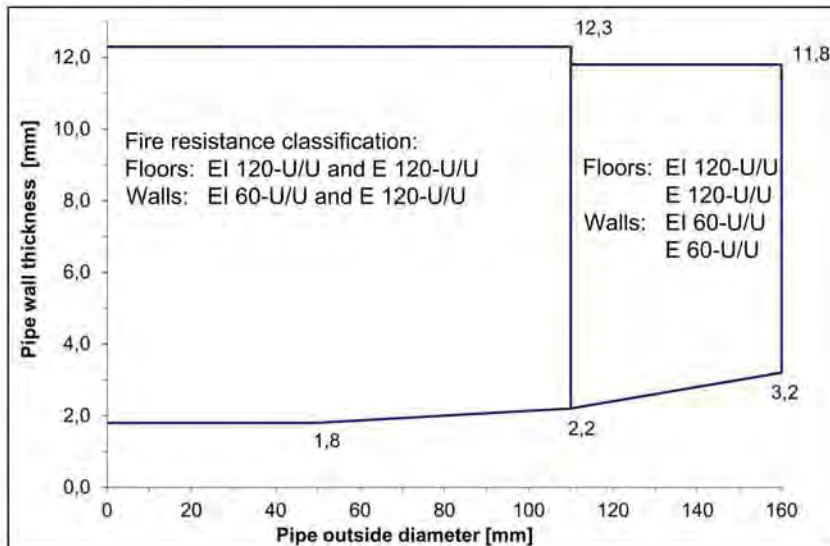
Pipe penetration seal "ZZ-Fire protection collar NE"

- Mortar/plaster embedded installation:
Field of application of plastic pipes -

ANNEX H

Field of application of plastic pipes:

Plastic pipes made of PVC-U and PVC-C according to
1.2.1 of the ETA



The pipe end configuration U/U covers also U/C, C/U and C/C. For further information refer to national regulations.

Pipe penetration seal "ZZ-Fire protection collar NE"

- Mortar/plaster embedded installation:
Field of application of plastic pipes -

ANNEX I

