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European Technical Assessment

ETA-16/0001 of 13.11.2017

General part

Technical Assessment Body issuing the European Technical Assessment	Österreichisches Institut für Bautechnik (OIB) Austrian Institute of Construction Engineering
Trade name of the construction product	Rohrschott90 Plus EN
Product family to which the construction product belongs	Fire Stopping and Fire Sealing Products: Penetration Seals
Manufacturer	Geberit International AG Schachenstrasse 77 8645 Jona SWITZERLAND
Manufacturing plant	Geberit International AG Schachenstrasse 77 8645 Jona SWITZERLAND
This European Technical Assessment contains	121 pages including Annexes A-1 to F-38 which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	Guideline for European technical approval for "Fire Stopping and Fire Sealing Products", ETAG 026 Part 2: "Penetration Seals", edition August 2011, used as European Assessment Document (EAD)
This European Technical Assessment replaces	European Technical Assessment ETA-16/0001 of 04.01.2016

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Specific parts

1 Technical description of the product

"Rohrschott90 Plus EN" is a pipe collar to be used as pipe penetration seal in combination with gap fillers and insulations (additional components).

Pipe collar	Characteristics
Rohrschott90 Plus EN	Pipe collar according to Annex B of the ETA with stainless sheet steel housing (thickness of steel sheet 0,5 mm, alloy 1.4510 according to EN 10088-2) and an inlay made of intumescent material

Additional components	Characteristics
Gap filler	Non-combustible material with classification A1 or A2-s1,d0 according to EN 13501-1 which is dimensionally stable as e.g. mortar, cement or gypsum joint filler or "CP611A" from manufacturer "Hilti AG" (only to be used for shaft walls)
Polyethylene sound insulation (tube)	Closed cell, flexible polyethylene foam insulation according to EN 14313 in form of tubes, faced with an outside PE foil, with a nominal thickness of 4 mm, a nominal density of 54 kg/m^3 and classification E according to EN 13501-1 (e.g. "Geberit Dämmschlauch" resp. "Geberit insulation hose" from manufacturer "Geberit International AG", or "Tubolit AR Fonoblok" from manufacturer "Armacell GmbH")
Polyethylene sound insulation (tape)	Closed cell, flexible polyethylene foam insulation according to EN 14313 in form of tapes, faced with an outside PE foil, with a self-adhesive device, with a nominal thickness of 3 mm, a nominal density of 54 kg/m^3 and classification E according to EN 13501-1 (e.g. „Geberit Dämmbandage" resp. "Geberit sound insulation tape" from manufacturer "Geberit International AG")

Additional components	Characteristics
Sound insulation mat	Open cell polyurethane foam insulation in form of mats, faced with an outside heavy foil made of EPDM (ethylene propylene diene monomer) with a mineral filler and a flame retardant, with a nominal thickness of 17 mm, a nominal density of 30 kg/m³ (foam), a nominal density of 2033 kg/m³ (foil) and classification E according to EN 13501-1 ("Geberit Schalldämmmatte Isol Flex" resp. "Geberit sound insulation mat Isol Flex" from manufacturer "Geberit International AG")

2 Specification of the intended use(s) in accordance with the applicable European Assessment Document

2.1 Intended use

"Rohrschott90 Plus EN" is intended to be used as a pipe penetration seal to temporarily or permanently reinstate the fire resistance performance of flexible wall constructions, rigid wall constructions, shaft walls and rigid floor constructions where they have been provided with apertures which are penetrated by various plastic pipes.

"Rohrschott90 Plus EN" can only be installed in the types of separating elements as specified in the following table.

Separating element	Construction
Flexible walls	> Steel studs or timber studs lined on both faces with minimum 2 layer of boards (minimum thickness 12,5 mm) with classification A2-s1,d0 or A1 according to EN 13501-1 > For timber stud walls there shall be a minimum distance of 100 mm of the penetration seal to any timber stud. The cavity between the penetration seal and the timber stud has to be closed with minimum 100 mm of insulation with classification A1 or A2 according to EN 13501-1 > Minimum thickness 100 mm > Classification according to EN 13501-2: ≥ EI 90 > This European Technical Assessment does not cover sandwich panel constructions and flexible walls were the lining does not cover studs on both sides. Penetrations in such constructions shall be tested on a case by case basis
Rigid walls	> Aerated concrete, concrete, masonry > Minimum thickness 100 mm > The rigid wall shall be classified in accordance with EN 13501-2 for the required fire resistance period

Separating element	Construction
Shaft walls	> Steel studs according to EN 14195 lined on one face > Thickness (number of layers x thickness of board) and type of board: 3 x 15 mm, gypsum plasterboards type DF acc. to EN 520 with minimum reaction to fire class A2-s1,d0 according to EN 13501-1 > Between the profiles stone wool according to EN 13162 (reaction to fire class A1 according to EN 13501-1) with a density of 40 kg/m³ and a melting point > 1000 °C according to DIN 4102-17 and a thickness of 40 mm has to be installed > Nominal width of profiles: 50 mm (e.g. CW 50) > Maximum distance between steel studs: 625 mm > The mechanical resistance and stability has to be given for the required fire resistance period > Classification according to EN 13501-2: ≥ EI 90
Rigid floors[1]	> Aerated concrete, concrete > Minimum density 550 kg/m³ > Minimum thickness 150 mm > The rigid floor shall be classified in accordance with EN 13501-2 for the required fire resistance period
	> Reinforced concrete > Minimum compressive strength 57 N/mm² > Minimum thickness 100 mm > The rigid floor shall be classified in accordance with EN 13501-2 for the required fire resistance period

"Rohrschott90 Plus EN" can only be configured as specified in the following tables. Other parts or service support constructions shall not penetrate the penetration seal.

Penetrating element	Construction characteristics for installation of the penetrating element in flexible walls and rigid walls
Plastic pipes	> "Geberit PE" pipes from manufacturer "Geberit International AG" with diameters and wall thicknesses as defined in Annex D-1 to D-6 of the ETA > "Geberit Silent-PP" pipes from manufacturer "Geberit International AG" with diameters and wall thicknesses as defined in Annex D-7 to D-15 of the ETA > "Geberit Silent-db20" pipes from manufacturer "Geberit International AG" with diameters and wall thicknesses as defined in Annex D-17 to D-22 of the ETA > "Geberit Silent-Pro" pipes from manufacturer "Geberit International AG" with diameters and wall thicknesses as defined in Annex D-23 to D-32 of the ETA

[1] This European Technical Assessment refers to rigid floors with a minimum thickness of 150 mm, if not stated otherwise (see Annex E-18 and Annex F-35 to F-38 of the ETA).

Penetrating element	Construction characteristics for installation of the penetrating element in shaft walls
Plastic pipes	> "Geberit Silent-PP" pipes from manufacturer "Geberit International AG" with diameters and wall thicknesses as defined in Annex D-16 of the ETA

Penetrating element	Construction characteristics for installation of the penetrating element in rigid floors
Plastic pipes	> "Geberit PE" pipes from manufacturer "Geberit International AG" with diameters and wall thicknesses as defined in Annex F-1 to F-5 and Annex F-35 of the ETA > "Geberit Silent-PP" pipes from manufacturer "Geberit International AG" with diameters and wall thicknesses as defined in Annex F-6 to F-14 and Annex F-36 of the ETA > "Geberit Silent-db20" pipes from manufacturer "Geberit International AG" with diameters and wall thicknesses as defined in Annex F-15 to F-21 and Annex F-37 of the ETA > "Geberit Silent-Pro" pipes from manufacturer "Geberit International AG" with diameters and wall thicknesses as defined in Annex F-22 to F-34 and Annex F-38 of the ETA

2.2 Use category

"Rohrschott90 Plus EN" is intended for use at temperatures below 0 °C and with exposure to UV, but with no exposure to rain, and can therefore – according to ETAG 026-Part 2 clause 2.4.12.1.3.3 – be categorized as Type Y_1. Since the requirements for Type Y_1 are met, also the requirements for Type Y_2, Z_1 and Z_2 are fulfilled.

Although a penetration seal is intended for indoor applications only, the construction process may result in it being subjected to more exposed conditions for a period before the building envelope is closed. For this case provisions shall be made to protect temporarily exposed penetration seals according to the ETA-holder's installation instructions.

2.3 Working life

The provisions made in this European Technical Assessment are based on an assumed working life of "Rohrschott90 Plus EN" of 10 years, provided the conditions laid down in the technical literature of the manufacturer relating to packaging, transport, storage, installation, use and repair are met.

The indications given on the intended working life cannot be interpreted as a guarantee given by the producer or the Technical Assessment Body, but are to be regarded only 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 Basic requirements for construction works.

2.4 General assumptions

2.4.1 It is assumed that

- damages to the penetration seal are repaired accordingly,
- the installation of the penetration seal does not effect the stability of the adjacent building element – even in case of fire,
- the lintel or floor above the penetration seal is designed structurally and in terms of fire protection such that no additional mechanical load (other than its own weight) is imposed on the penetration seal,
- the thermal movement in the pipe work will be accommodated in such way that it does not impose a load on the penetration seal,
- the installations are fixed to the adjacent building element in accordance with the relevant regulations in such a way that, in case of fire, no additional mechanical load is imposed to the penetration seal,
- the support of the installations is maintained for the required period of fire resistance and
- pneumatic dispatch systems, compressed air systems, etc. are switched off by additional means in case of fire.

2.4.2 This European Technical Assessment does not address any risks associated with the emission of dangerous liquids or gases caused by failure of the pipe(s) in case of fire nor does it prove the prevention of the transmission of fire through heat transfer via the medium in the pipes.

2.4.3 This European Technical Assessment does not verify the prevention of destruction of adjacent building elements with fire separating function or of the pipes themselves due to distortion forces caused by extreme temperatures. These risks shall be accounted for by taking appropriate measures when designing or installing the pipe work.

The mounting or hanging of the pipes or the layout of the pipe work shall be implemented in such a way that the pipes and the fire resistant building elements shall remain functional within a period of time which corresponds to the fire resistance period required.

2.4.4 The risk of downward spread of fire caused by burning material which drips through a pipe to floors below, is not considered in this European Technical Assessment (see EN 1366-3:2009, clause 1).

2.4.5 The durability assessment does not take account of the possible effect on the penetration seal of substances permeating through the pipe walls.

2.4.6 The assessment does not cover the avoidance of destruction of the penetration seal or of the adjacent building element(s) by forces caused by temperature changes in case of fire. This has to be considered when designing the piping system.

2.5 Manufacturing

The European Technical Assessment 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. Österreichisches Institut für Bautechnik will decide whether or not such changes affect the European Technical Assessment and consequently the validity of the CE marking on the basis of the European Technical Assessment and if so whether further assessment or alterations to the European Technical Assessment, shall be necessary.

3 Performance of the product and references to the methods used for its assessment

Basic requirements for construction works	Essential characteristic	Method of verification	Performance
BWR 2	Reaction to fire	EN 13501-1: 2007+A1:2009	Clause 3.1.1 of the ETA
	Resistance to fire	EN 13501-2: 2007+A1:2009	Clause 3.1.2 of the ETA and Annex D-1 to D-32 and Annex F-1 to F-38 of the ETA
BWR 3	Air permeability (material property)	No performance assessed	
	Water permeability (material property)	No performance assessed	
	Content and/or release of dangerous substances	European Council Directive 67/548/EEC and Regulation (EC) No 1272/2008 as well as EOTA TR 034, edition October 2015	Declaration of conformity by the manufacturer
BWR 4	Mechanical resistance and stability	No performance assessed	
	Resistance to impact / movement	No performance assessed	
	Adhesion	No performance assessed	
BWR 5	Airborne sound insulation	No performance assessed	
BWR 6	Thermal properties	No performance assessed	
	Water vapour permeability	No performance assessed	
BWR 7	No performance assessed		

3.1 Safety in case of fire (BWR 2)

3.1.1 Reaction to fire

The components of “Rohrschott90 Plus EN” were assessed according to ETAG 026-Part 2 clause 2.4.1 and classified according to EN 13501-1:2007+A1:2009.

Pipe collar	Class according to EN 13501-1:2007+A1:2009
Intumescent inlay of Rohrschott90 Plus EN	**E**
Sheet steel housing of Rohrschott90 Plus EN	**A1**

3.1.2 Resistance to fire

"Rohrschott90 Plus EN" 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.

Based upon the gained test results and the field of application specified within prEN 1366-3.2:N185:2007-07 and EN 1366-3:2009 the pipe penetration seal "Rohrschott90 Plus EN" has been classified according to EN 13501-2:2007+A1:2009.

The fire resistance classes of the pipe penetration seal "Rohrschott90 Plus EN" in the relevant separating elements are listed in Annex D-1 to D-32 and Annex F-1 to F-38 of the ETA.

The resistance to fire classification of the pipe penetration seal "Rohrschott 90 Plus EN" in shaft walls listed in Annex D-16 of the ETA is only valid in case of fires outside the shaft. This European Technical Assessment does not cover the case of fires within shafts.

The resistance to fire classification listed in Annex D-1 to D-32 and Annex F-1 to F-38 of the ETA is only valid if "Rohrschott90 Plus EN" is installed according to Annex A-1 to A-9 of the ETA.

3.2 Hygiene, health and environment (BWR 3)

3.2.1 Air permeability

No performance assessed.

3.2.2 Water permeability

No performance assessed.

3.2.3 Release of dangerous substances

According to the manufacturer's declaration "Rohrschott90 Plus EN" does not contain dangerous substances detailed in Council Directive 67/548/EEC and Regulation (EC) no 1272/2008 as well as EOTA TR 034 (General BWR 3 Checklist for EADs/ETAs – Dangerous substances), edition October 2015.

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 European Technical Assessment, 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 Product Regulation, these requirements need also to be complied with, when and where they apply.

3.3 Safety and accessibility in use (BWR 4)

3.3.1 Mechanical resistance and stability

No performance assessed.

3.3.2 Resistance to impact / movement

No performance assessed.

3.3.3 Adhesion

No performance assessed.

3.4 Protection against noise (BWR 5)

3.4.1 Airborne sound insulation

No performance assessed.

3.5 Energy economy and heat retention (BWR 6)

3.5.1 Thermal properties

No performance assessed.

3.5.2 Water vapour permeability

No performance assessed.

3.6 Sustainable use of natural resources (BWR 7)

No performance assessed.

3.7 General aspects relating to fitness for use

The metal housing of "Rohrschott90 Plus EN" is made of ferritic stainless steel (alloy 1.4510) according to EN 10088-2.

According to ETAG 026-Part 2 clause 2.4.12.1.2.5 and Annex B of EN 10088-1 ferritic stainless steels have relatively low corrosion resistance and their use should normally be restricted to mild indoor or similarly protected environments and austenitic stainless steels are normally appropriate for use in all use categories. These types of stainless steels are therefore appropriate for use in use category Y_1.

The intumescent inlay of "Rohrschott90 Plus EN" fulfils the requirements for use at temperatures below 0 °C and with exposure to UV, but with no exposure to rain and can – according to ETAG 026-Part 2 clause 2.4.12.1.3.3 – be categorized as Type Y_1.

"Rohrschott90 Plus EN" fulfils the requirements for the intended use category.

"Rohrschott90 Plus EN" is therefore appropriate for use at temperatures below 0 °C and with exposure to UV, but with no exposure to rain, and can – according to ETAG 026-Part 2 clause 2.4.12.1.3.3 – be categorized as Type Y_1. Since the requirements for Type Y_1 are met, also the requirements for Type Y_2, Z_1 and Z_2 are fulfilled.

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

4.1 AVCP system

According to the Decision 1999/454/EC[2], amended by Decision 2001/596/EC[3] of the European Commission the system(s) of assessment and verification of constancy of performance (see Annex V of Regulation (EU) No 305/2011) is given in the following table.

Product(s)	Intended use(s)	Level(s) or class(es) (resistance to fire)	System of assessment and verification of constancy of performance
Fire Stopping and Fire Sealing Products	for fire compartmentation and/or fire protection or fire performance	any	1

[2] Official Journal of the European Communities no. L 178, 14.7.1999, p. 52
[3] Official Journal of the European Communities no. L 209, 2.8.2001, p. 33

In addition, according to the Decision 1999/454/EC, amended by Decision 2001/596/EC of the European Commission the system(s) of assessment and verification of constancy of performance, with regard to reaction to fire, is given in the following table.

Product(s)	**Intended use(s)**	**Level(s) or class(es)** (reaction to fire)	**System** of assessment and verification of constancy of performance
Fire Stopping and Fire Sealing Products	for uses subject to regulations on reaction to fire	A1*, A2*, B*, C*	1
		A1**, A2**, B**, C**, D, E	3
		(A1 to E)***, F	4

* Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material)

** Products/materials not covered by footnote (*)

*** Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of class A1 according to Commission Decision 96/603/EC, as amended)

5 Technical details necessary for the implementation of the AVCP system, as provided for the applicable European Assessment Document

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with the Technical Assessment Body Österreichisches Institut für Bautechnik.

The notified product certification body shall visit the factory at least once a year for surveillance of the manufacturer.

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The original document is signed by:

Rainer Mikulits
Managing Director