



European Technical Approval ETA-13/0700

English translation prepared by DIBt – Original version in German language

Handelsbezeichnung <i>Trade name</i>	Bausatz für Stromschienensystem "betobar-r..." <i>kit for bus bar trunking system "betobar-r..."</i>
Zulassungsinhaber <i>Holder of approval</i>	Eta-com B NV/SA Scheldeweg 4 2850 BOOM BELGIEN
Zulassungsgegenstand und Verwendungszweck <i>Generic type and use of construction product</i>	Bausatz für die Abschottung der Stromschienensysteme "betobar-r LA...", "betobar-r LB...", "betobar-r SH..." und "betobar-r PH..." <i>kit for penetration seals for the bus bar trunking systems "betobar-r LA...", "betobar-r LB...", "betobar-r SH..." and "betobar-r PH..."</i>
Geltungsdauer: <i>Validity:</i>	vom <i>from</i> bis <i>to</i> 28 June 2013 28 June 2018
Herstellwerk <i>Manufacturing plant</i>	Eta-com B NV/SA Scheldeweg 4 2850 BOOM BELGIEN

Diese Zulassung umfasst
This Approval contains

16 Seiten einschließlich 8 Anlagen
16 pages including 8 annexes

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches 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 Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by Article 2 of the law of 8 November 2011⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶;
 - Guideline for European technical approval of "Fire Stopping and Fire Sealing Products - Part 2: Penetration Seals", ETAG 026-02.
- 2 Deutsches Institut für Bautechnik is authorized 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 manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European technical approval.
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- 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 L 40, 11 February 1989, p. 12
² Official Journal of the European Communities L 220, 30 August 1993, p. 1
³ Official Journal of the European Union L 284, 31 October 2003, p. 25
⁴ *Bundesgesetzblatt Teil I 1998*, p. 812
⁵ *Bundesgesetzblatt Teil I 2011*, p. 2178
⁶ Official Journal of the European Communities L 17, 20 January 1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of the product and intended use

1.1 Definition of the product

This European Technical Approval refers to the kit for the penetration seal of a bus bar trunking system with the designation "kit for bus bar trunking system betobar-r..." for installation in fire resistant walls or floors.

The kit consists of a bus bar trunking unit with fire protection device, boards for beadings and a gap filling material.

The bus bar trunking unit with fire protection device consists of a bus bar trunking element "betobar-r LA...", "betobar-r LB...", "betobar-r SH..." or "betobar-r PH..." (the last one with additional grouting of the openings in the area of the seal) and an outer factory produced lining with fire protective boards.

The bus bar trunking element, the fire protective boards and the gap filling material shall comply with the specifications given in Appendix 1.

Ancillary products referred to in this European Technical Approval within the framework of evaluating resistance to fire (see Annex 1) are not covered by this ETA and cannot be CE-marked on the basis of it.

1.2 Intended use

The kit is intended to form part of a penetration seal, which is used to maintain the fire resistance of a wall or floor when and where bus bar trunking systems "betobar-r LA...", "betobar-r LB...", "betobar-r SH..." or "betobar-r PH..." pass through the wall or floor.

Specifications of the size of the opening to be sealed off see Annex 2. The distance between the opening to be sealed off and other openings or components shall be at least 200 mm.

Annex 2 gives details of penetration seals for which fire resistance tests were carried out. This ETA covers assemblies installed in accordance with the provisions given in Annex 2.

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 instructions of the manufacturer.

The provisions made in this European Technical Approval are based on an assumed working life of the penetration seal of 25 years provided the conditions laid down in sections 4 and 5 relating to manufacturing, installation, use and repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

2. Characteristics of product(s) and methods of verification

2.1 Reaction to fire

The components of the kit fulfil the requirements for reaction to fire classes according to EN 13501-1 as specified in Annex 1.

2.2 Resistance to fire

The resistance to fire performance according to EN 13501-2 of penetration seals incorporating the kit "kit for bus bar trunking system betobar-r..." are given in Annex 3.

In the annexes the maximum verified fire resistance class is specified. If installed in walls or floors of the same thickness and density and with the same structure as specified there, but with a lower fire resistance class, the fire resistance class of the penetration seal is reduced to the fire resistance class of the wall or floor.

Information on ancillary products which were tested within the framework of this European Technical Approval for evaluating resistance to fire of the penetration seal is given in Annex 1. Any changes in the material, the composition, the dimensions or the properties of the ancillary products shall be notified to Deutsches Institut für Bautechnik without delay, which will decide whether a new assessment will be necessary.

2.3 Emission of dangerous substances or radiation

The components of the kit do not contain any substances registered as dangerous substances in the list of the European Commission.

For the bus bar trunking elements "betobar-r LA...", "betobar-r LB...", "betobar-r SH..." and "betobar-r PH..." and the gap filling material manufacturer's declarations, that these products do not contain dangerous substances specified in Directive 67/548/EEC or Regulation (EC) N° 1272/2008 or the Indicative List on Dangerous Substances were made available to the Deutsches Institut für Bautechnik.

For assessment purposes, the chemical compositions of the grouting compound of the bus bar trunking element and the gap filling material was made available to the Deutsches Institut für Bautechnik.

For the boards "PROMAXON-Typ A" see ETA-06/0215.

NOTE: In addition to the specific clauses relating to dangerous substances contained in this European Technical Approval, 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.

2.4 Durability and serviceability

The components of the kit fulfil the requirements of use category Z₂ in accordance with ETAG 026-2, Section 1.2. That means that the product can be exposed to the conditions in interiors without high humidity without expecting significant changes in the fire protective characteristic values.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the decision 1999/454/EG, amended by Decision 2001/596/EC of the European Commission⁷ the system 1 of attestation of conformity applies.

This system of attestation of conformity is defined as follows:

System 1: Certification of the conformity of the product by a notified product certification body on the basis of:

⁷ Official Journal of the European Communities L .../... (number) of ... (day/month/year)

- (a) Tasks for the manufacturer:
- (1) factory production control;
 - (2) further testing of samples taken at the factory by the manufacturer in accordance with a prescribed test plan;
- (b) Tasks for 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.

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 ensure that the product is in conformity with this European Technical Approval.

The manufacturer may only use initial / raw / constituent materials stated in the technical documentation of this European Technical Approval.

The factory production control shall be in accordance with the "Control Plan of 28. June 2013 relating to the European Technical Approval ETA-13/0700 issued on 28. June 2013" 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 Deutsches 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 manufacturer

The manufacturer shall provide a technical datasheet and an installation guide containing at least the following information:

Technical data sheet:

1. Field of application:

- Building elements in which the kit may be installed, type and properties of the building elements like minimum thickness and density.
- Bus bar trunking elements which may be connected to the bus bar trunking element with fire protection device; type and properties of the bus bar trunking elements like material and dimensions, necessary/allowed supports/fixings
- Design of the penetration seal(s) including limits in size, minimum thickness, separations etc. of the penetration seal(s).
- Definitions of ancillary products with clear indication whether they are generic or specific.
- Environmental conditions covered by the ETA: Indoor Application without humidity exposure (Z2).

2. Installation instruction:

- Steps to be followed
- Stipulations on maintenance, repair and replacement

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The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.1 in the field of ETAG 026-2 in order to allow the manufacturer to undertake the actions lay down in section 3.2.2. 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 involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of the European Technical Approval ETA-13/0700 issued on 28. June 2013.

3.2.2 Tasks of notified body

The approved body shall perform the following tasks in accordance with the provisions laid down in the control plan:

- Initial type-testing of the product
- Initial inspection of factory and factory production control
- Continuous surveillance, assessment and approval of factory production control

The notified body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in (a) written report (reports).

The notified product certification 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 Deutsches Institut für Bautechnik without delay.

3.3 CE marking

The CE marking shall be affixed on the packaging of the kit. The marking „CE“ shall be followed by the identification number of the notified product certification body and be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacturer),
- 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 guideline for European Technical Approval,
- the name and intended use of the product,
- "see ETA-13/0700 for relevant characteristics".

For an example of the CE marking see Appendix 5.

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

4.1 General

- 4.1.1 For evaluating resistance to fire of the penetration seal incorporating the kit it is assumed that
- the installation of the penetration seal does not affect the stability of the adjacent building elements – even in case of fire,
 - the installations are fixed to the adjacent building elements (not to the penetration seal) in accordance with the relevant regulations in such a way that, in case of fire, no additional mechanical load is imposed on the seal,
 - the support of the installations is maintained for the classification period required,
 - the penetration seal complies with the specifications in this ETA and the installation was carried out in accordance with this ETA and also in accordance with the technical data sheet and the installation instructions by the manufacturer,
 - damages to the penetration seal are repaired accordingly,
 - the seal is installed only in the building elements specified in this ETA,
 - only installations in accordance with the specifications in this ETA pass through the openings (Parts or service support constructions other than those in accordance with section 1.2 shall not pass through the penetration seal.),
 - 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 seal,

- 4.1.2 This European Technical Approval does not verify the prevention of destruction of adjacent building elements with fire separating function or of the bus bar unit themselves due to distortion forces caused by extreme temperatures. These risks shall be accounted for by taking appropriate measures when designing or installing the bus bar unit.

The mounting or hanging or the execution of the bus bar trunking unit shall be implemented in such a way that the bus bar trunking unit and the fire-resistant building elements shall remain functional within a period of time which corresponds to the fire resistance period required.

4.2 Manufacturing

The product shall be produced in accordance with the manufacturing process deposited with Deutsches Institut für Bautechnik.

The European Technical Approval is issued for the product on the basis of agreed data and information, deposited with the Deutsches 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 and information being incorrect, shall be notified to the Deutsches Institut für Bautechnik) before the changes are introduced. The Deutsches 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.

4.3 Installation

The arrangement and installation of the kit shall be done in accordance with the details given in the Annexes 3 and 4 for the penetration seal(s) of the bus bar trunking system.

5 Indications to the manufacturer

5.1 Packaging, transport and storage

- 5.1.1 The manufacturer's specifications for packaging, transport and storage shall be observed.
- 5.1.2 The packaging of the gap filling material shall contain the following information:
 - Trade name or trademark or other symbol identifying the product
 - The date of manufacture (day, month, year or coded information)
- 5.1.3 The gap filling material and the bus bar trunking element with fire protective device shall be packed for delivery in such a way that usual delivery conditions are being complied with and that sufficient protection against the effects of normal handling is given.

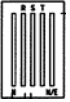
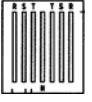
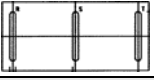
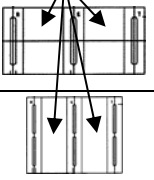
5.2 Use, maintenance, repair

- 5.2.1 The fire resistance of penetration seals incorporating the kit shall not be negatively affected by future changes to buildings or building elements.
- 5.2.2 The assessment of the fitness for use is based on the assumption that damaged seals are replaced or repaired. It is also assumed that replacement of components during maintenance/repair will be undertaken using materials specified by this European Technical Approval.
- 5.3.3 In general, no maintenance work is necessary. Repair can be made by restoring damaged boards and by using the gap filling material according to Appendix 1.

Prof. Gunter Hoppe
Head of Department

beglaubigt:
Racinowski

Name / Manufacturer	Description
kit for bus bar trunking system "betobar-r..." Eta-com Group Scheldeweg 4 2850 Boom BELGIEN	The kit consists of <ul style="list-style-type: none"> - a bus bar trunking element "betobar-r..." which consists of a specific number of aluminium or copper conductors, grouted in an epoxide resin block, according to Annex 2, - Boards "PROMAXON-Typ A", fitted to the bus bar trunking element and fixed to the bus bar trunking element in the factory* (see below), - Boards "PROMAXON-Typ A", fitted to the bus bar trunking for beadings (see below), - a gap filling material called "PROMASEAL Mastic" (see below) and - a glue (see below)
"PROMAXON-Typ A" Promat International NV Bormstraat 24 B-2830 Tisselt BELGIEN	Fire protection boards "PROMAXON-Typ A" according to ETA-06/0215 Reaction to fire according to EN 13501-1: class A1 For the lining of the bus bar element: Thickness: 25 mm Dimensions: see Annexes 4 and 5 For beadings: Thickness: 20 mm Width: 125 mm; Length: see Annexes 4 and 5
"PROMASEAL Mastic" Eta-com Group Scheldeweg 4 2850 Boom BELGIEN	Gap filling material* filled in cartridges Reaction to fire according to EN 13501-1: class E
"PROMAT-Kleber K84" Eta-com Group Scheldeweg 4 2850 Boom BELGIEN	High temperature glue filled in buckets
gap filling material, manufacturer-independent	Mineral wool (Reaction to fire class A1 or A2 according to EN 13501-1) with a melting point > 1000 °C according to DIN 4102-17
* Information to the materials and the production process were made available to the Deutsches Institut für Bautechnik.	
kit for bus bar trunking system "betobar-r..."	Annex 1
APPENDIX 1 – DESCRIPTION OF THE PRODUCT AND ANCILLARY PRODUCTS Overview of the products and components	

Designation*	Outer dimensions		Conduction current [A]	Number of conductors [Stück]	Cross section of the conductor [mm ²]	Illustration (schematic)
	B [mm]	H [mm]				
"betobar-r LA..." (Single (E) and Twin systems (D)**)						
LA02Ex/Dx	104 (3 - 5 conductors) / 114 (ab LA20... with 5 conductors)	60	≤ 3.375 (E) ≤ 6.500 (D)	3 - 5 (S) 6 - 10 (D)	80 - 120	
LA04Ex/Dx		80			160 - 2 x 240	
LA08Ex/Dx		120	320 - 2 x 480			
LA12Ex/Dx		160	600 - 2 x 720			
LA16Ex/Dx		200	800 - 2 x 960			
LA20Ex/Dx		240	1.000 - 2 x 1.300			
LA24Ex/Dx			1.520 - 2 x 1.920			
"betobar-r LB..." (Single (E) and Twin systems (D)**)						
LB04Ex/Dx	138 (6 - 7 conductors) / 168 (8 - 9 conductors)	80	≤ 3.375 (S) ≤ 6.475 (D)	6 - 9 (S) 12 - 18 (D)	2 x 160 - 4 x 240	
LB08Ex/Dx		120			2 x 320 - 4 x 480	
LB12Ex/Dx		160	2 x 600 - 4 x 720			
LB16Ex/Dx		200	2 x 800 - 4 x 960			
"betobar-r SH..."						
SH1x	160	100	≤ 2.500	3	400 - 1.200	
SH2x		140			480 - 960	
"betobar-r PH... completely filled with epoxide resin"						
PH1x	300	140	≤ 6.000	3	400 - 1.200	additional grouting contrary to normal bus bar trunking element 
PH08x	322	130			480 - 960	
PH10x		140			400 - 1.200	
PH12x		170			960 - 1.440	
PH16x		210			1.280 - 1.920	
PH20x		260			1.600 - 3.200	
PH24x	300	2.400 - 3.840				
					6	
kit for bus bar trunking system "betobar-r..."						Annex 2
APPENDIX 1 – DESCRIPTION OF THE PRODUCT AND ANCILLARY PRODUCTS Description of the bus bar trunking elements "betobar-r LA...", "betobar-r LB...", "betobar-r SH..." and "betobar-r PH..."						

Dimensions in mm

The pipe penetration seal may be used in:

Rigid walls (MW)

- of masonry, concrete, reinforced concrete or aerated concrete
- density $\geq 550 \text{ kg/m}^3$
- thickness $\geq 150 \text{ mm}$
- classified according to EN 13501-2 corresponding to the required fire resistance period

Floors (D)

- of concrete, reinforced concrete or aerated concrete
- density $\geq 550 \text{ kg/m}^3$
- thickness $\geq 200 \text{ mm}$
- classified according to EN 13501-2 corresponding to the required fire resistance period

Requirements for the openings in the building element:

In each opening in the building element only one bus bar trunking element shall be installed. Deviating from this it is allowed to install two identical elements "LA..." or "LB..." in the same opening in a distance of 86 mm to 140 mm (Twin systems; see Annex 2).

After installation of the bus bar trunking element with fire protection device the remaining annular gap between the building element and the bus bar trunking element with fire protection device shall have a width of 25 mm to 70 mm.

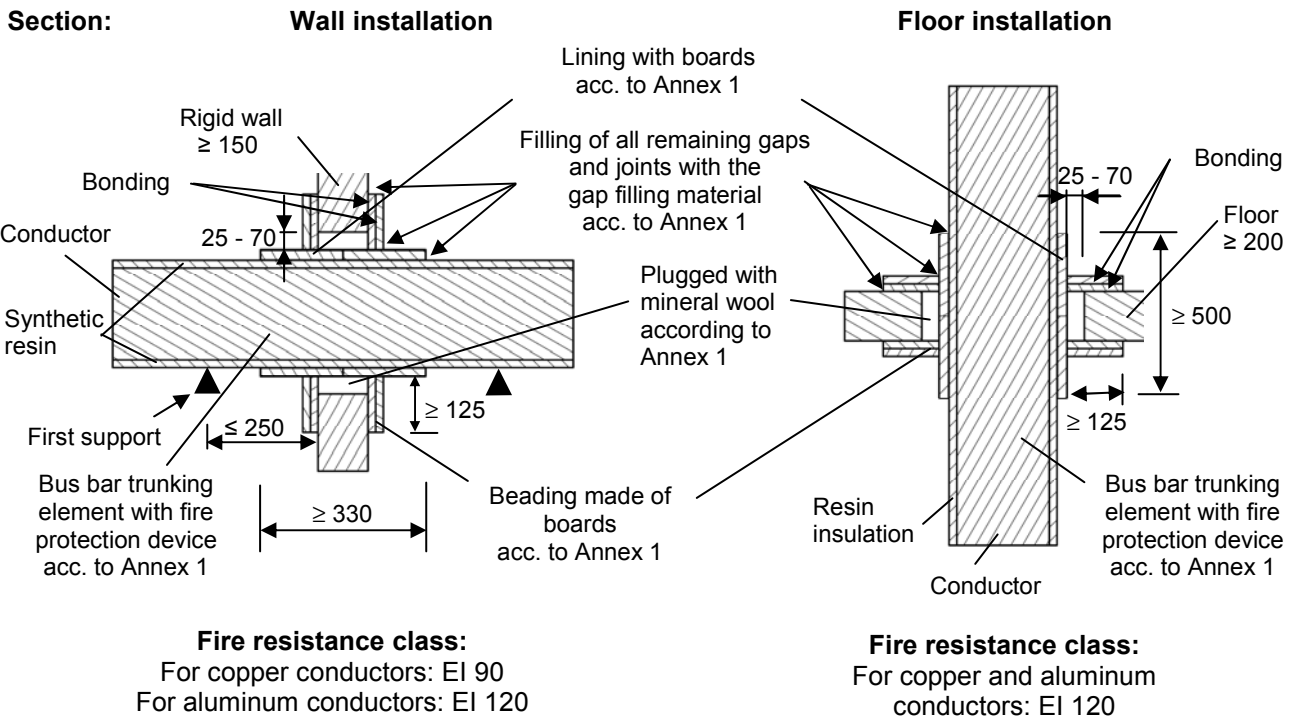
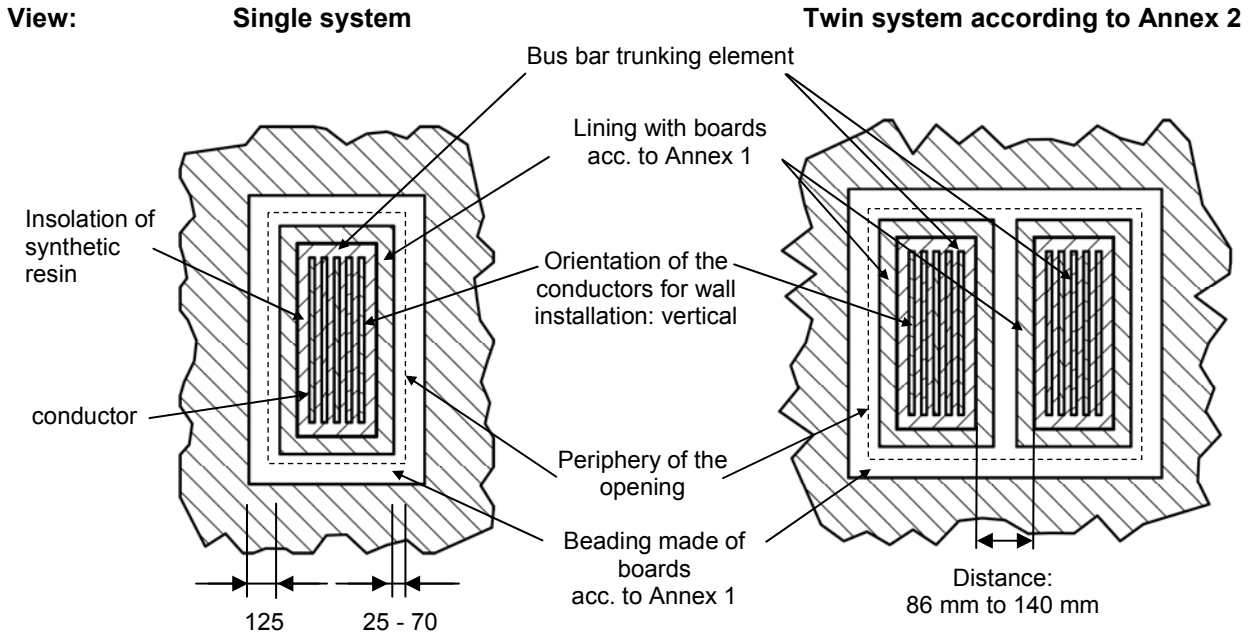
kit for bus bar trunking system "betobar-r..."

APPENDIX 2 – FIELD OF APPLICATION

Characteristics of the walls and floors and of the openings in the building element

Annex 3

Penetration seals for bus bar trunking systems "betobar-r LA..." and "betobar-r LB..."



Dimensions in mm

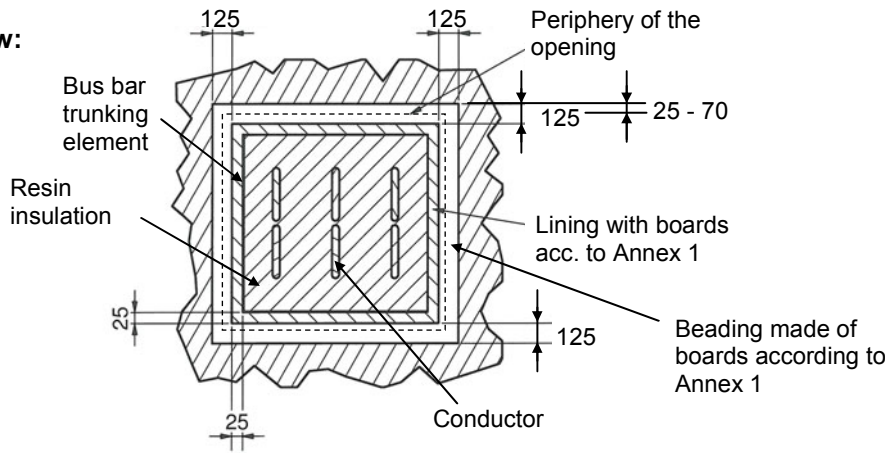
kit for bus bar trunking system "betobar-r..."

APPENDIX 3 – DESCRIPTION OF THE PENETRATION SEAL
 Bus bar trunking systems "betobar-r LA..." and "betobar-r LB..."
 Installation in rigid walls and floors

Annex 4

Penetration seals for bus bar trunking systems "betobar-r SH..." and "betobar-r PH..."

View:

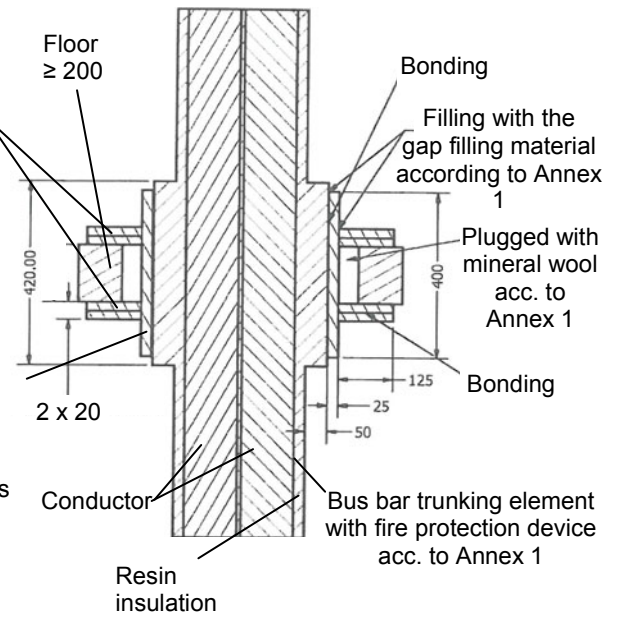
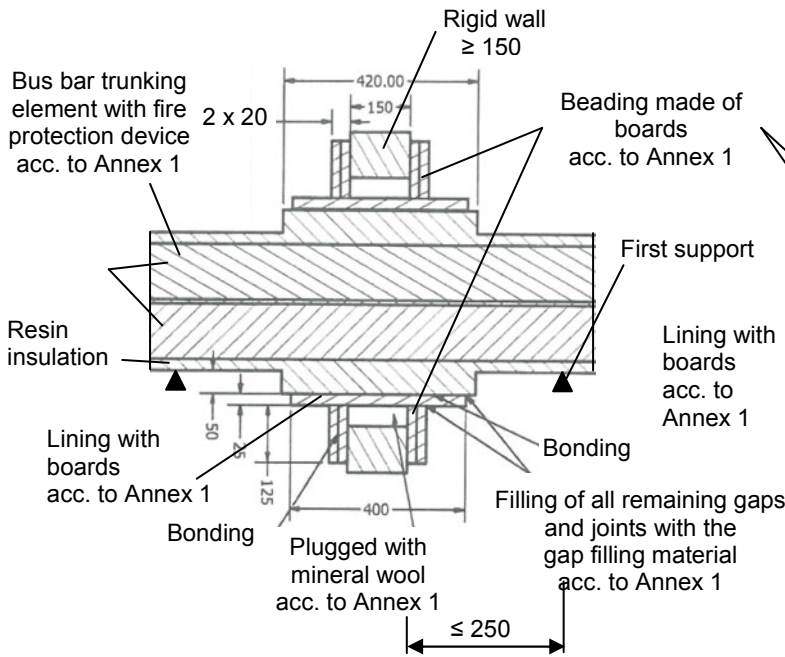


Orientation of the conductors for wall installation: vertical

Section:

Wall installation

Floor installation



Fire resistance class:
For copper and aluminum conductors: EI 120

Fire resistance class:
For copper and aluminum conductors: EI 120

Dimensions in mm

kit for bus bar trunking system "betobar-r..."

APPENDIX 3 – DESCRIPTION OF THE PENETRATION SEAL
Bus bar trunking systems "betobar-r SH..." and "betobar-r PH..."
Installation in rigid walls and floors

Annex 5

INSTALLATION OF THE KIT

1. General

- 1.1 Before installing the penetration seal for the bus bar trunking system it shall be checked that all conditions (e.g. type and thickness of the wall or floor, type and dimensions of the bus bar trunking elements with fire protection device and the ambient conditions) comply with the provisions of Section 1.2 and Appendices 1 and 2.
- 1.2 It shall be ensured that the assumptions under which the fitness for use was evaluated are complied with (see Section 4.1). Apart from this, the installation instruction of the manufacturer shall be observed.
- 1.3 Prior to the installation of the seal the reveals of the opening in the building element shall be cleaned.

2. Installation of the kit


- 2.1 The bus bar trunking element with fire protection device (outer lining with boards) ist so in die Bauteilöffnung einzuschieben, dass die Bekleidung des Stromschienenelementes symmetrisch zur Wand- bzw. Deckenebene liegt. For wall installation the conductors of the bus bar trunking element shall be orientated vertical (see Annexes 4 and 5).
- 2.2 The annular 25 mm up to 70 mm wide gap between the lining of the bus bar trunking element and the edge of the opening shall be completely clogged with noncombustible mineral wool according to Annex 1 with an apparent density $\geq 100 \text{ kg/m}^3$ (see Annexes 4 and 5).
- 2.3 Afterwards the gap shall be covered with 20 mm thick and 125 mm wide fire protective boards "PROMAXON Typ A" according to Annex 1 in two layers. The boards shall be fixed to the building element and to one another using the glue "PROMAT-Kleber K84" according to Annex 1. In addition, the boards shall be screwed to the building element with minimum two screws per board in a distance $\leq 250 \text{ mm}$ (see Annexes 4 and 5).
- 2.4 Finally all remaining gaps and voids shall be filled with the gap filling material "PROMASEAL-Mastic" according to Annex 1.
- 2.5 When installed in floors the lining of the bus bar trunking element shall be secured against vertical slipping on the underside of the floor, so that the penetration seal remain functional in case of fire.

kit for bus bar trunking system "betobar-r..."

APPENDIX 4 – INSTALLATION OF THE KIT

Annex 6

Example for CE marking

 XXXX
Eta-com Group Scheldeweg 4 2850 Boom, BELGIEN/BELGIUM 13 XXXX-CPD-XXXX
ETA-13/0700 ETAG 026 – Teil 2 / Part 2 "Bausatz für Stromschienensystem betobar-r..." / "kit for bus bar trunking system betobar-r..." Nutzungskategorie/ use category Z ₂

"CE"-Zeichen / "CE" marking

Identifizierungsnummer der notifizierten Stelle (für Konformitätsbescheinigungssystem 1) / Identification number of notified certification body

Name und Anschrift des Herstellers oder seines autorisierten Vertreters (verantwortliche juristische Person) / Name and address of the producer (legal entity responsible for the manufacturer)

Die letzten beiden Ziffern des Jahres, in dem die CE-Kennzeichnung angebracht wurde / Two last digits of year of affixing CE marking

Nummer des EG-Konformitätszertifikats / Number of EC certificate of conformity

Nummer der ETA / ETA number

Nummer der Leitlinie / ETAG number

Produktbezeichnung (Handelsname) / Designation of the product (trade name)

Nutzungskategorie / use category

Für weitere relevante Produktmerkmale (z. B. Feuerwiderstandsklasse, Abgabe gefährlicher Stoffe) s. ETA-13/0700 / See ETA-13/0700 for other relevant characteristics (i. e. fire resistance class, dangerous substances)

kit for bus bar trunking system "betobar-r..."

APPENDIX 5 – EXAMPLE FOR CE MARKING AND ADDITIONAL INFORMATIONS

Annex 7

Abbreviations

- FWKL:** Maximum fire resistance class; If installed in building elements of the same type, thickness, density and with the same structure, but with a lower fire resistance class, the fire resistance class of the pipe penetration seal is reduced to the fire resistance class of the building element.
- MW:** Rigid wall according to Annex 3
- D:** Rigid floor according to Annex 3
- d_w:** Thickness of the wall
- d_D:** Thickness of the floor
- B:** Width
- H:** Height

Standards

- EN 13501-2:2010-02** Fire classification of construction products and building elements – Part 2: Classification using test data from resistance to fire tests, excluding ventilation services
- EN 13501-1:2007** Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests
- prEN 1366-3:2007-07** Document from CEN TC 127 for formal vote (document N 185); title see EN 1366-3:2009-07
- EN 1366-3:2009-07** Fire resistance tests for service installations – Part 3: Penetration seals
- DIN 4102-17:1990-12** Brandverhalten von Baustoffen und Bauteilen; Schmelzpunkt von Mineralfaser-Dämmstoffen; Begriffe, Anforderungen, Prüfung

Other Documents

- ETAG 026-2** Guideline for European Technical Approval of Fire Stopping and Fire Sealing Products, Part 2, Penetration Seals (edition January 2008)
- EOTA TR 024** Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products (edition November 2006)

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APPENDIX 6 – ABBREVEATIONS AND REFERENCE DOCUMENTS

Annex 8