



European Technical Approval ETA-13/0902

English translation prepared by DIBt – Original version in German language

Handelsbezeichnung
Trade name

"Wichmann-Kabelbox"

Zulassungsinhaber
Holder of approval

Wichmann
Brandschutzsysteme GmbH & Co. KG
Siemensstraße 7
57439 Attendorn-Ennest
DEUTSCHLAND

Zulassungsgegenstand
und Verwendungszweck
*Generic type and use
of construction product*

Kabelabschottung
cable penetration seal

Geltungsdauer:
Validity: vom
from
bis
to

28 June 2013
28 June 2018

Herstellwerk
Manufacturing plant

Wichmann
Brandschutzsysteme GmbH & Co. KG
Siemensstraße 7
57439 Attendorn-Ennest
DEUTSCHLAND

Diese Zulassung umfasst
This Approval contains

25 Seiten einschließlich 17 Anhänge
25 pages including 17 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.
- 4 This European technical approval may be withdrawn by Deutsches 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 Deutsches 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 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 cable penetration seal

1.1.1 The cable penetration seal called "Wichmann-Kabelbox" mainly consists of one or more sheet steel casings arranged as a group with a fire protection panel and a sealant for the casing. The cable penetration seal shall be constructed in accordance with Appendix 3 using the components listed in Appendix 1.

1.1.2 Description of the components of the cable penetration seal

The steel sheet casings with an internal fire panel insert and a sealant of the steel sheet cases, produced by Wichmann Brandschutzsysteme GmbH & Co. KG shall comply with the specifications given in Annex 1.

1.2 Intended use

1.2.1 General

1.2.1.1 The cable penetration seal is used to seal off openings which are used to maintain the fire resistance of a wall or floor when and where installations pass through the wall or floor.

1.2.1.2 The cable penetration seal reaches a maximum fire resistance class of EI 90 (see also section 2.3).

1.2.1.3 The cable penetration seal can be used in interiors with high humidity but without temperatures below 0 °C (see section 2.5); use category Z₁ according to EOTA TR 024.

1.2.1.4 The cable penetration seal may also be used to seal off openings which have not yet been used for installations. Subsequent modifications may be made to the installations (retrofitting or removal of installations) provided the provisions of this European technical approval are complied with.

1.2.2 Building elements

The cable penetration seal may be used in flexible walls (thickness $d_W \geq 100$ mm), rigid walls (thickness $d_W \geq 100$ mm) and rigid floors (thickness $d_D \geq 150$ mm) in accordance with Appendix 2, which are classified in accordance with the required fire resistance duration according to EN 13501-2 (max. EI 90).

1.2.3 Component openings

1.2.3.1 The dimensions of the openings to be sealed off shall not exceed the size of the sheet steel casings according to Annex 3.

1.2.3.2 The distance between the opening to be sealed off and other openings or components shall be at least 200 mm. The distance between adjacent large penetration seals according to section 1.1.2.5 of this ETA may be reduced to 100 mm, in cases where the openings are not larger than 400 mm x 400 mm.

1.2.4 Installations

The cable penetration seal may be used on cables cable bundles and small metal or plastic tubes for control lines in accordance with Appendix 2. The total permissible cross section of the installations (with regard to the respective external dimensions; including cable carriers) must not exceed 60 % of the opening. The installations shall be fixed perpendicularly to the surface of the building element/penetration seal. The distances between the individual installations and between the installations and the seal edge shall comply with the specifications in Appendix 2.

1.2.5 Working life

The provisions made in this European Technical Approval are based on an assumed working life of the cable penetration seal "Wichmann-Kabelbox" of 10 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 Product characteristics and methods of verification

2.1 General

2.1.1 The fitness of the cable penetration seal for the intended use was evaluated in accordance with ETAG 026 Part 2: 2008-01-01.

For the evaluation of the cable penetration seal, the product characteristics "reaction to fire", "fire resistance", "release of dangerous substances" as well as "durability and serviceability" were considered.

2.1.2 The product characteristics specified in sections 2.2 to 2.5 only apply to the cable penetration seal and its components described in this ETA. Deutsches Institut für Bautechnik shall be immediately notified of any changes to the materials, composition, dimensions or properties of these components. Deutsches Institut für Bautechnik will then decide if a new assessment is required.

2.2 Reaction to fire

The fire protection packets comply with the fire reaction classes in accordance with EN 13501-1.

2.3 Resistance to fire

The cable penetration seal was tested in accordance with prEN 1366-3:07/2007. As a maximum, the penetration seal fulfils the requirements of class EI 90 in accordance with EN 13501-2.

In the annexes the maximum verified fire resistance class – under the respective installation conditions – 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.

2.4 Emission of dangerous substances or radiation

The intumescent material does not contain any substances registered as dangerous substances in the list of the European Commission.

For assessment purposes, the chemical compositions of the materials were made available to Deutsches Institut für Bautechnik.

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.

2.5 Durability and serviceability

The intumescent material fulfils the requirements of use category Z₁ in accordance with EOTA TR 024. That means that the materials can be exposed to the conditions in interiors with high humidity but without temperatures below 0 °C, 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:

- (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 the 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 dated 28. June 2013 relating to the European technical approval ETA-13/0902 granted 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 with Deutsches Institut für Bautechnik.⁸

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

⁷ Official Journal of the European Communities L 178/52 of 14.07.1999

⁸ The control plan is a confidential part of the European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.

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 into which the penetration seal may be installed, type and properties of the building elements, such as minimum thickness, density and – in the case of lightweight constructions – the construction requirements.
- Installations that may pass through the penetration seal, type and properties of the installations (including insulation if relevant), such as materials, diameter, thickness; necessary/permitted supports/fastenings; distances.
- Dimensions, minimum thicknesses etc. of the penetration seal.
- Definitions of ancillary products with clear indication whether they are generic or specific.
- Climatic conditions covered by the ETA: Internal use with high humidity but without temperatures below 0 °C.

2. Installation instruction:

- The sequence of working steps to be followed
- Stipulations on maintenance, repair and replacement

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-13/0902 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 approved body shall record the essential points of their actions referred to above and state the results obtained and conclusions made in a written report.

The approved 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 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-13/0902 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 It is assumed that

- 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 installation of the penetration seal does not affect the stability of the adjacent building elements – even in the 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 seal,
- the installations are fixed to the adjacent building elements (not to the seal) in accordance with the relevant regulations in such a manner that, in case of fire, no additional mechanical load is imposed on the seal and
- the support of the installations is maintained for the classification period required.

4.1.2 It is assumed that, in order to avoid injuries precautions are taken to prevent persons to step or fall on the penetration seal (e.g. covering with a steel grating).

4.2 Production

The European technical approval was issued for the product on the basis of agreed data/information, deposited with 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/information being incorrect, shall be reported to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval, and if so whether further assessment or alterations to the approval shall be necessary.

4.3 Installation

The product characteristics specified in this European technical approval only apply if the penetration seal is installed in accordance with the specifications of Appendix 3 and also with the technical data sheet and the manufacturer's installation instructions.

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 sheet steel casings with fire protection panel and sealant of the sheet steel casings 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 products 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

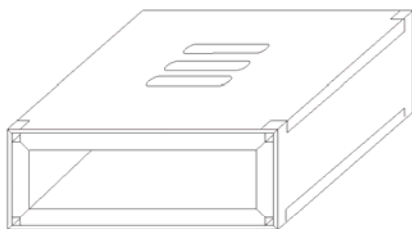
5.2.1 In general, no maintenance work is necessary. Repair can be made by subsequent installation of the two-component-foam and/or restoring damaged measures on the installations (for example wrapping on a cable) in accordance with Appendix 3.

5.2.2 If individual installations are removed or installed additionally, the remaining openings shall be sealed again in accordance with Appendix 3 and measures in accordance with Appendix 3 shall be taken for the installations added, if applicable.

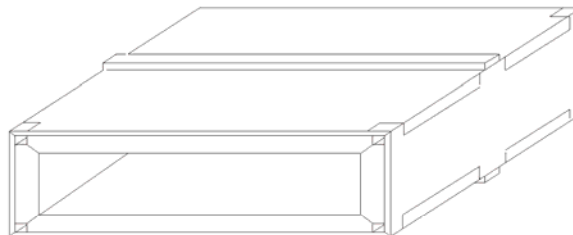
Prof. Gunter Hoppe
Head of Department

beglaubigt:
Racinowski

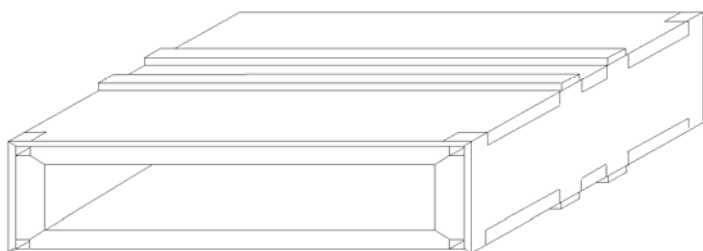
Type / Manufacturer	Description
<p>Sheet steel casings Wichmann Brandschutzsysteme GmbH & Co. KG Siemensstraße 7 57439 Attendorn DEUTSCHLAND</p>	<p>Housing made of sheet steel in form of four sided, three sided, hexagonal and round boxes with label*: Wichmann Kabelbox wall EI 90 Wichmann Kabelbox floor EI 90</p>
<p>EasyFoam, SoniFoam Wichmann Brandschutzsysteme GmbH & Co. KG Siemensstraße 7 57439 Attendorn DEUTSCHLAND</p>	<p>Foam stoppers flexible, open cell foam made from melamine resin for fastening of the casings Class of reaction to fire according to EN 13501-1: class Cs₃d₀ More information are deposit in Deutsches Institut für Bautechnik</p>
<p>Fire protection panels Wichmann Brandschutzsysteme GmbH & Co. KG Siemensstraße 7 57439 Attendorn DEUTSCHLAND</p>	<p>Intumescent material in form of mats Class of reaction to fire according to EN 13501-1: class E More information are deposit in Deutsches Institut für Bautechnik</p>
<p>gap filling material, manufacturer-independent</p>	<p>Dimensionally stable, non-combustible (Class A1 or A2-s1,d0 in accordance with EN 13501-1) materials, such as concrete, cement mortar or gypsum mortar or – when installing in walls – also mineral wool and mineral wool fibre plates (fire performance Class A1 or A2 in accordance with EN 13501-1) with a melting point > 1000 °C in accordance with DIN 4102-17.</p>
<p>* The material data are deposit by the Deutsches Institut für Bautechnik and be accessible to the extern monitoring body provided by the applicant of this ETA.</p>	
<p>"Wichmann-Kabelbox"</p>	<p>Annex 1</p>
<p>APPENDIX 1 – DESCRIPTION OF THE PRODUCT Description of the components of the product</p>	



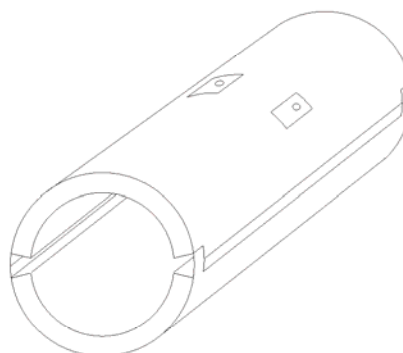
Type 1
-breadth up to 280 mm
-height up to 110 mm
-depth 270 mm or 350mm



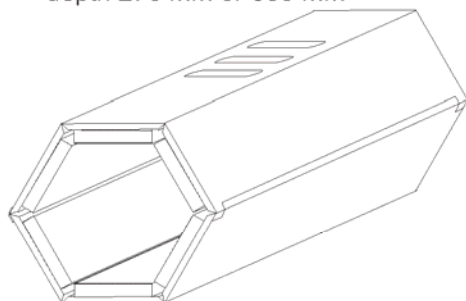
Type 2
-breadth up to 550 mm
-height up to 110 mm
-depth 270 mm or 350 mm



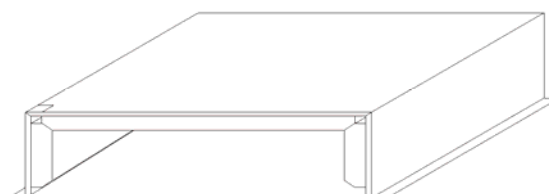
Type 3
-breadth from 550 up to 640 mm
-height up to 110 mm
-depth 270 mm or 350 mm



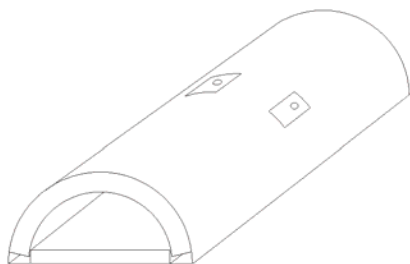
Round Boxes
-diameter up to 110 mm
-depth 270 mm or 350 mm



Hexagonal Boxes
-breadth 128 mm (opposite corners)
-height up to 110 mm (parallel surface)
-depth 270 mm or 350 mm



Type 4, threesided, for floor attachment
-breadth up to 435 mm
-height up to 80 mm
-depth 270 mm or 350 mm
-with or without sheet steel base



Type 5, half-round cable-box
-breadth up to 235 mm
-height up to 110 mm
-depth 270 mm or 350 mm

"Wichmann-Kabelbox"

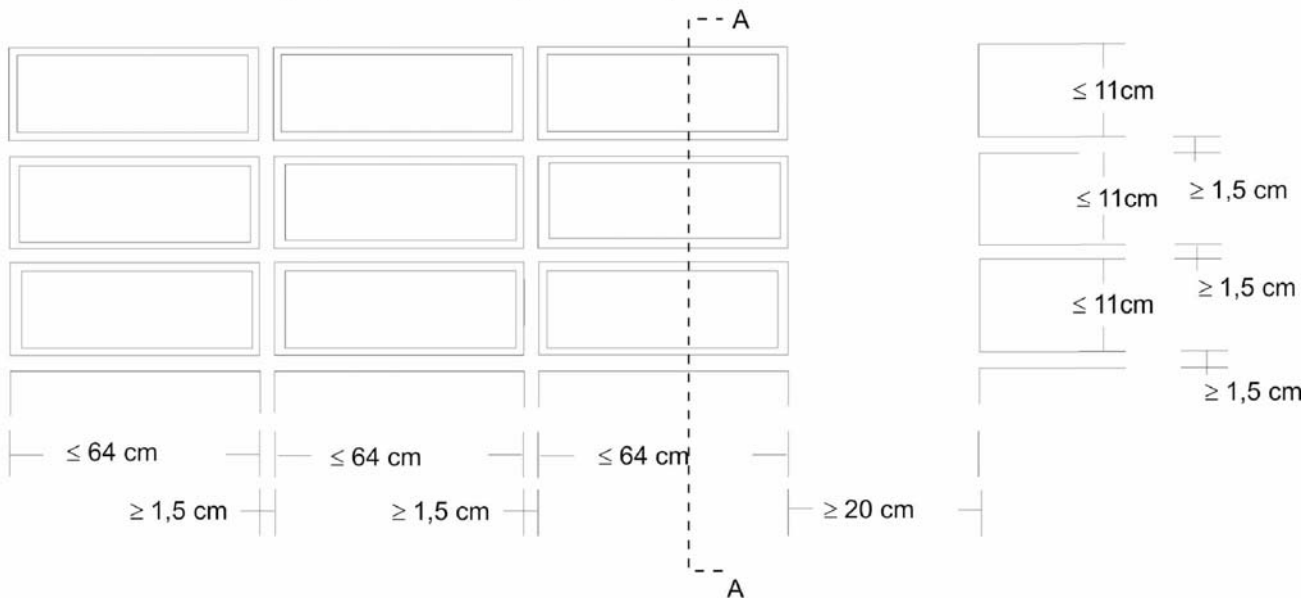
APPENDIX 1 – DESCRIPTION OF THE PRODUCT
Description of the sheet steel casings

Annex 2

View of the fire stops in ceilings

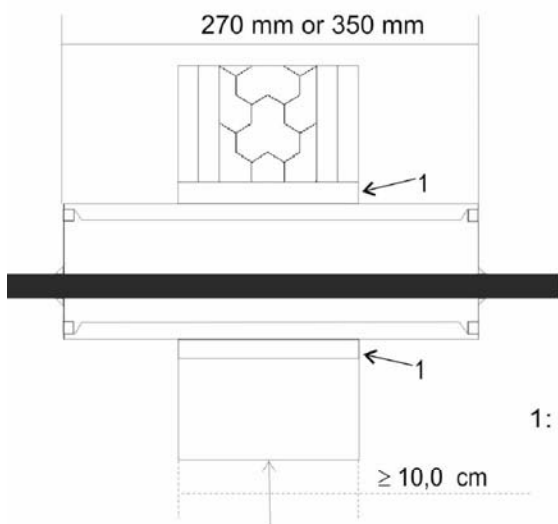
Group installations

- max. 3 side by side and 7 cable boxes above the other
- max. 3 side by side and 4 cable boxes above the other
- distance between integrated groups of boxes 20 cm
- in massive walls and light partition walls as groups max. (HxB) 610 x 640 mm



Installation in massive-
Flexible walls according to Annex 2

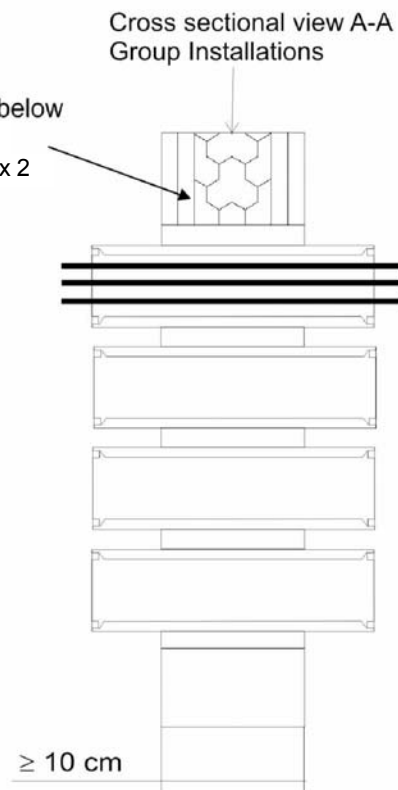
Cross sectional view A-A
Single installations



Centric installations in walls

1: Plaster or mortar

Steelsheet-profile above and below
group installations in
flexible walls according to Annex 2



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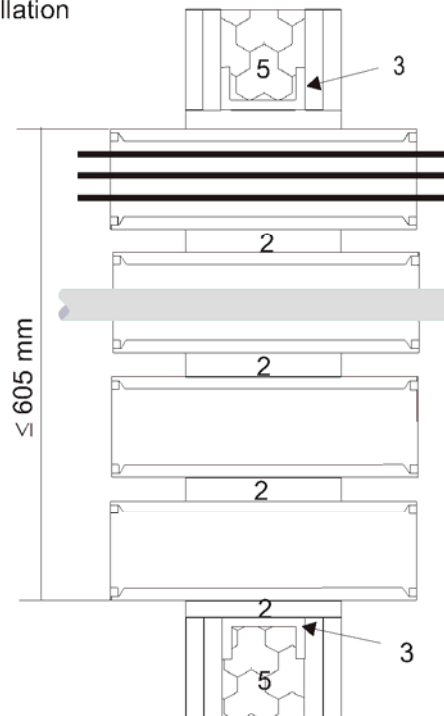
"Wichmann-Kabelbox"

APPENDIX 2 – Installation
Installation in walls

Annex 3

Section A-A
In Flexible walls according to Annex 2
Minimum walls thickness 10 cm, for box breadths = $\leq 53,5$ cm

Group installation



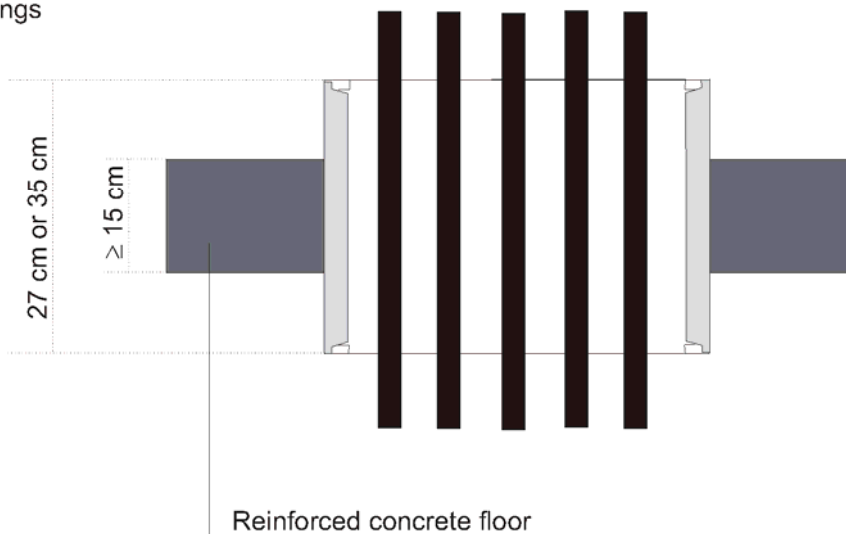
- 1: not applicable
 - 2: plaster, at least 1,5 cm between boxes
 - 3: Metal profile posts used to support the boxes in light partition walls
 - 4: not applicable
 - 5: lig Flexible walls according to Annex 2
- In:
fire resistance require an intrados made by same planking the wall was build of (refer to paragraph 3.1.2)

"Wichmann-Kabelbox"

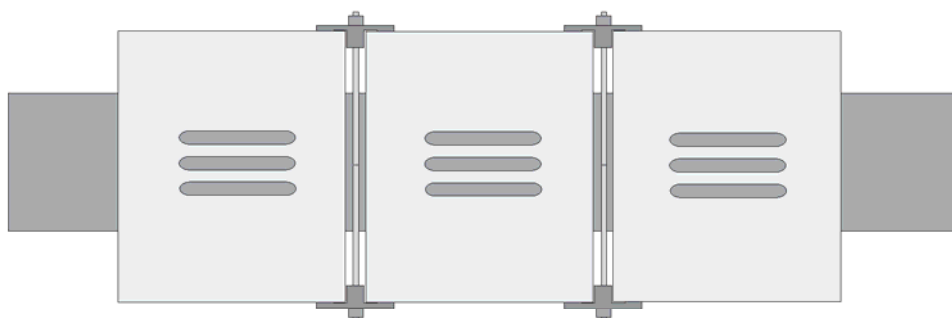
APPENDIX 2 – Installation
Installation in walls (flexible walls)

Annex 4

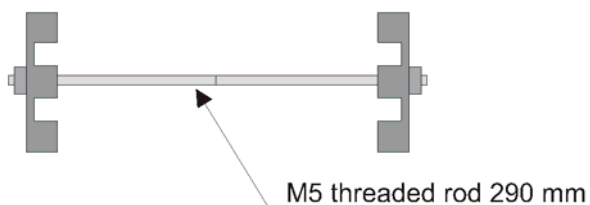
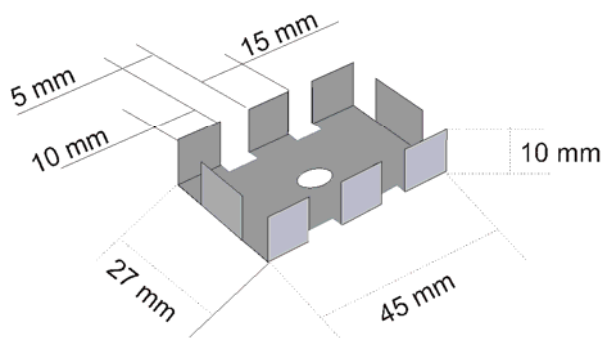
Section B-B
Fire stops in ceilings



Section C-C
Fire stops in ceilings



Detail view of the distance anchors (D)



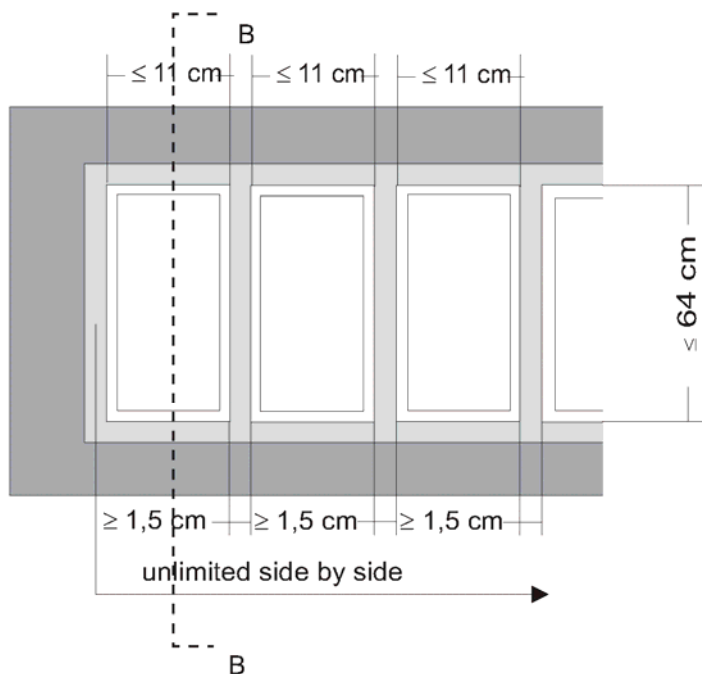
"Wichmann-Kabelbox"

APPENDIX 2 – Installation
Installation in floors

Annex 5

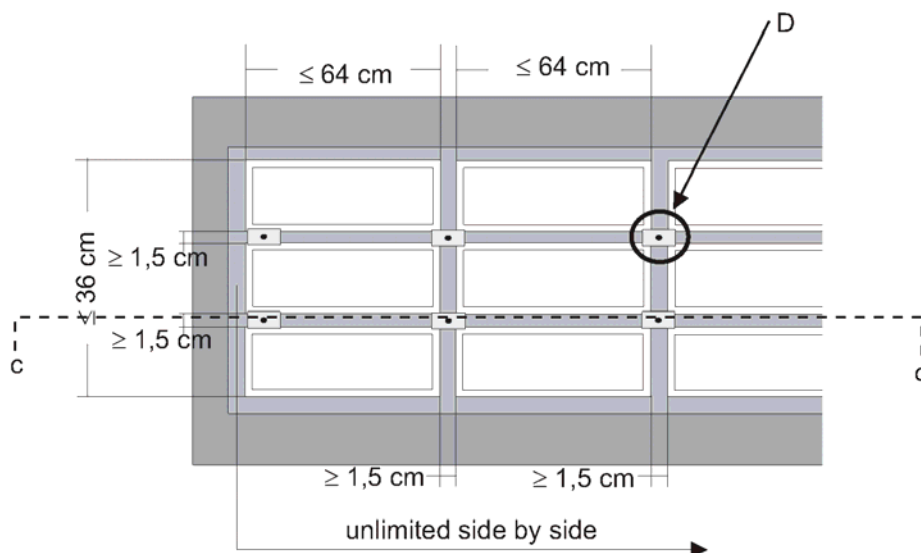
View of the fire stops in ceilings

in a single row unlimited number side by side



View of the fire stops in ceilings

Cable fire stop "WD90 System Wichmann"
o Flexible walls according to Annex 2

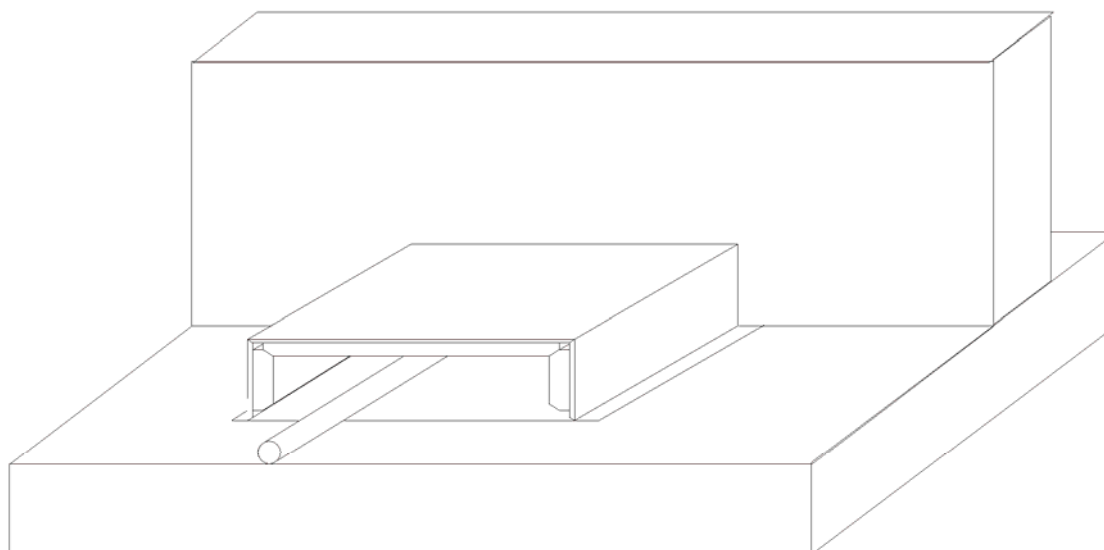


"Wichmann-Kabelbox"

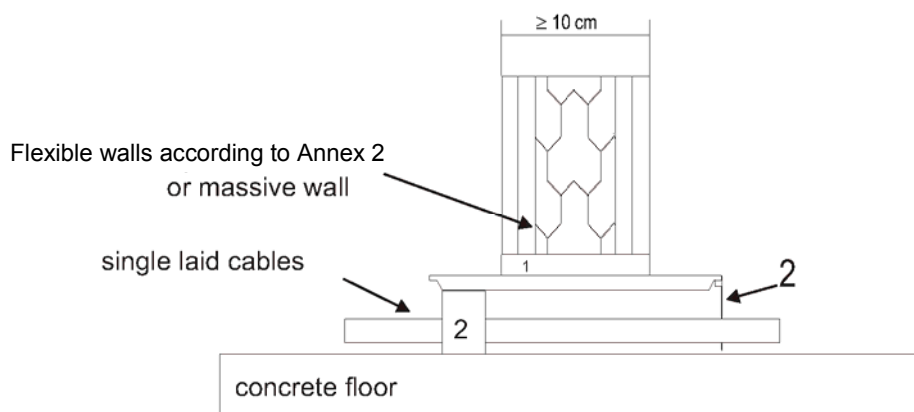
APPENDIX 2 – Installation
Installation in floors

Annex 6

Installation of cable boxes with one-side floor attachment



Cross section



1: plaster or mortar

2: "EasyFoam"-foam stoppers, "SoniFoam"-foam stoppers or plastic caps for smoke insulation

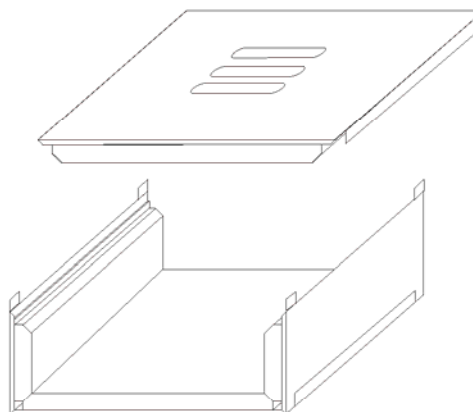
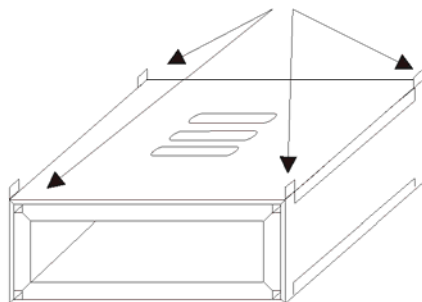
"Wichmann-Kabelbox"

APPENDIX 2 – Installation
Installation in walls with three sides sheet steel casings

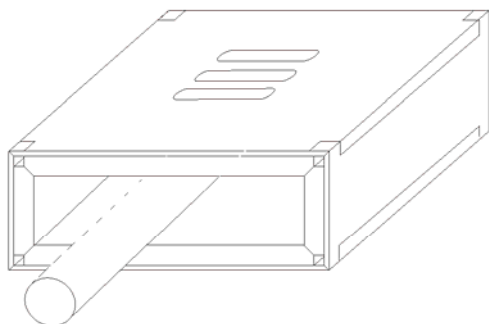
Annex 7

Dismantling and reassembling the boxes for applications to existing cables

bend the corner latches upwards

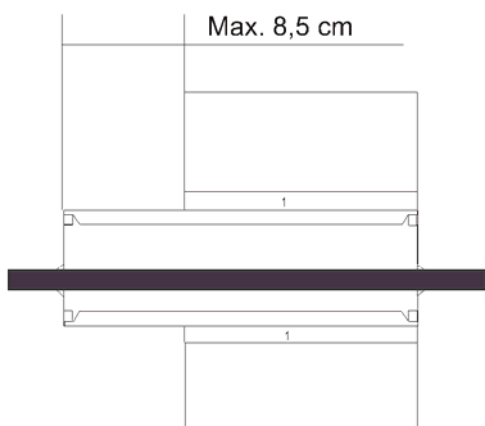


take apart



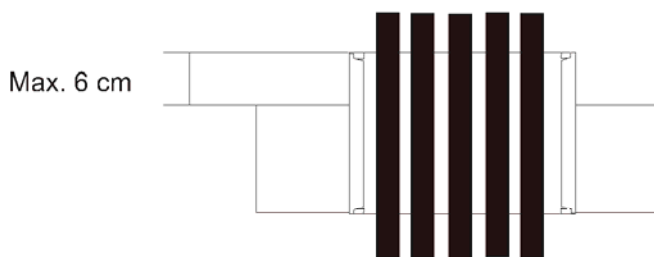
place the box around the cable, reassemble the box and install it as described in annexes 3 to 7

Asymmetric installations in walls and ceilings



1: plaster or mortar

asymmetric installations in ceilings



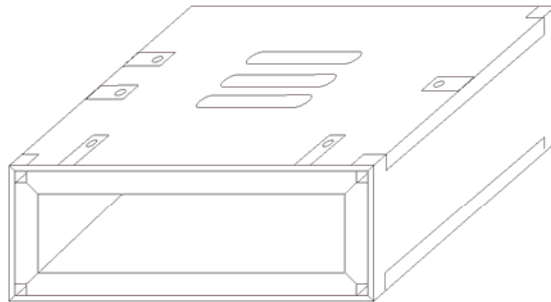
In case of one sided-flush installations, the required thickness of the ceiling must be at least 21 cm and the required thickness of the wall must be at least 18,5 cm.

"Wichmann-Kabelbox"

APPENDIX 2 – Installation
Asymmetric Installation

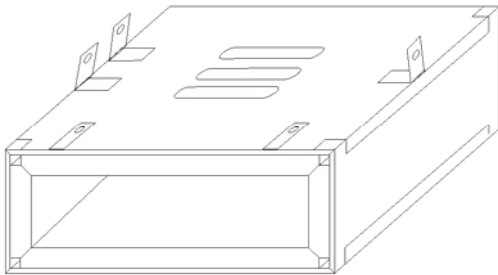
Annex 8

Fixing latches

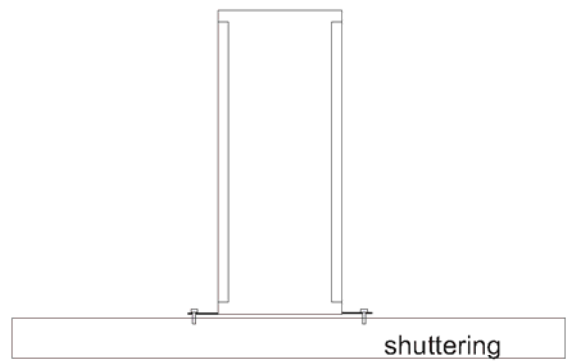
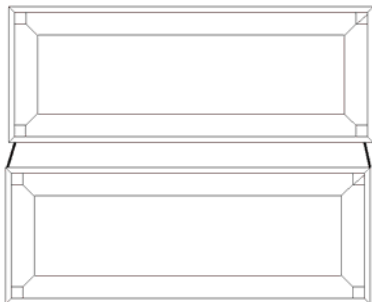
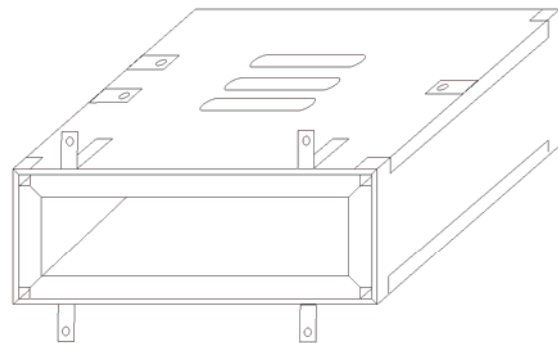


Examples of applications

spacers between boxes



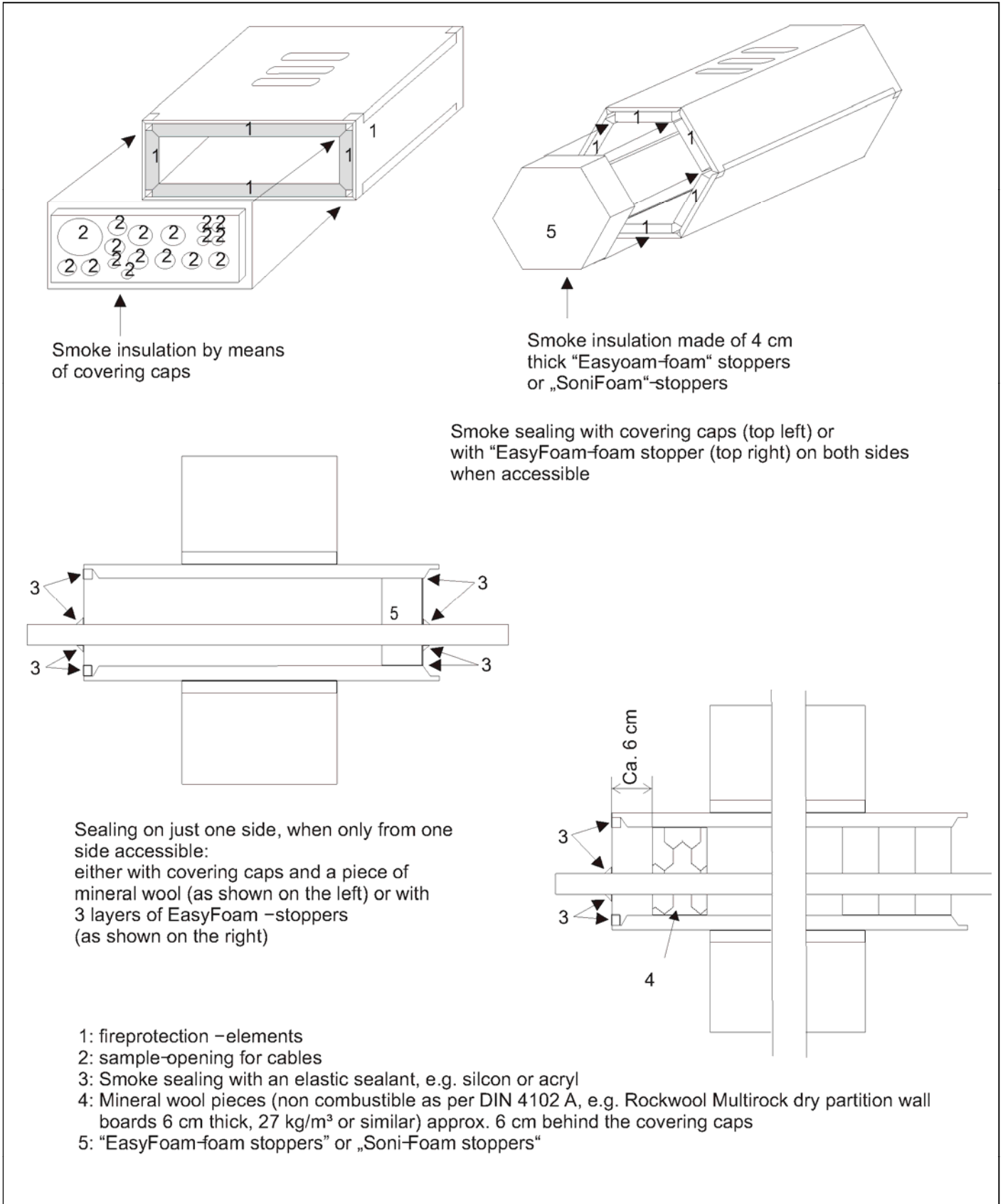
fixing on a formwork (shuttering)



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APPENDIX 2 – Installation
Installation with clips

Annex 9

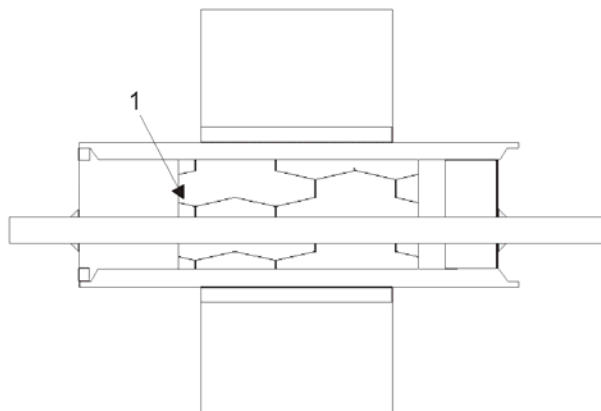


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APPENDIX 2 – Installation
Sealant of sheet steel casings

Annex 10

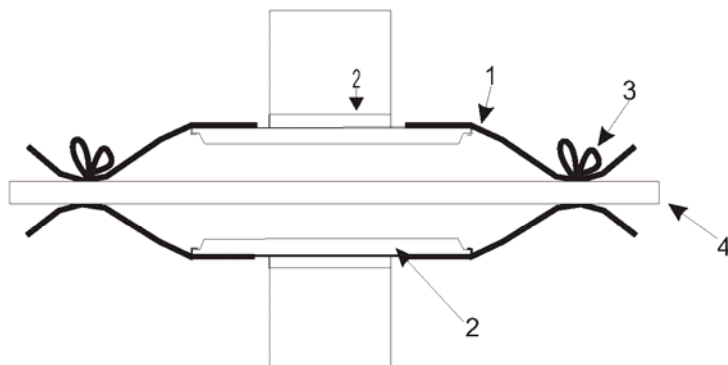
Optional filling with loose mineral wool



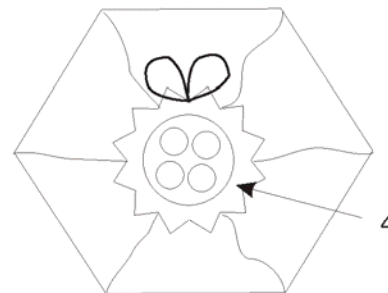
1: Filling with loose mineral wool
(material category DIN 4102 A)
melting point >1000°C

Installations with smoke sleeves

Cross section



Front view



- 1: Smoke-proof sleeves made of aluminium coated felt, fixed some 7 cm on the housing with silicon.
- 2: cable fire stop WD90 round or hexagonal types
- 3: Binding wires to close the openings
- 4: Single cables up to 50 mm in diameter, alternatively without cable

"Wichmann-Kabelbox"

APPENDIX 2 – Installation
Fastening of sheet steel casings

Annex 11

The cable box "System Wichmann" may be installed in

Rigid walls

- of masonry, concrete, reinforced concrete, or aerated concrete
- density $\geq 630 \text{ kg/m}^3$
- thickness $\geq 100 \text{ mm}$
- The walls shall be classified according to EN 13501-2 (maximum EI 90) corresponding to the required fire resistance period.

Flexible walls

- flexible walls with a steel stud substructure and a lining on both sides made from min. 2 layers of 12,5 mm thick cementitious or gypsum based slabs with a fire reaction class A1 or A2 according to EN 13501-1
The framework shall be supplemented with additional transoms and mullions so that they form the reveal of the wall opening for the planned mixed penetration seal. The wall lining shall be attached to these steel profiles appropriately. The opening reveal shall be cladded as described below.
- flexible walls with a wood stud substructure and a lining on both sides made from min. 2 layers of 12,5 mm thick cementitious or gypsum based slabs with a fire reaction class A1 or A2 according to EN 13501-1
The distance between the wood substructure and the seal shall be $\geq 100 \text{ mm}$ and the cavity between the linings of the wall, the wood substructure and the seal shall be tightly clogged with mineral wool of fire reaction class A1 or A2 according to EN 13501-1 in a depth of minimum 100 mm. The opening reveal shall be cladded as described below.
- thickness $\geq 100 \text{ mm}$
- The walls shall be classified according to EN 13501-2 (maximum EI 90) corresponding to the required fire resistance period.
- Cladding of the opening reveal: A surrounding reveal (frame flush with the wall surface) shall be fitted in the opening in accordance with the layout of the respective wall lining (for walls without internal insulation) or made of at least 12.5 mm thick cementitious or gypsum bound sheets with fire reaction class A1 per EN 13501-1 (e. g. gypsum fibre or calcium silicate plates) (for walls with internal insulation).

Rigid floors

- of masonry, concrete, reinforced concrete or aerated concrete
- density $\geq 550 \text{ kg/m}^3$
- thickness $\geq 150 \text{ mm}$
- The floors shall be classified according to EN 13501-2 (maximum EI 90) corresponding to the required fire resistance period.

	depth installation	group installation	single installation	fire resistance
wall	270 mm	no	yes	EI 90
wall	350 mm	yes	yes	EI 90
floor	350 mm	yes	yes	EI 90

Note: This ETA does not cover the installation of the seal in special walls, i. e. in sandwich panel constructions.

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APPENDIX 3 – Intended use
Walls and floors

Annex 12

General

- The total permitted cross section of the installations (relative to the respective external dimensions; including cable support constructions) shall not exceed 60 % of the opening.
- The cables and conduits may touch each other and may adjoin the pipe sleeve inside.

Type of installations

Typ	Description
Cables	<ul style="list-style-type: none"> ➤ All types of sheathed cables* currently and commonly used in building practice in Europe (e. g. power cables, data cables, telecommunications cables, fibre-optic cables) with the exception of waveguides ➤ $\varnothing \leq 80$ mm, design 4 $\varnothing \leq 50$ mm ➤ The cables may be grouped as layers and laid on cable support constructions ➤ Cable bundles – consisting of parallel cables, densely packed and tightly bound, stitched or welded to one another – may pass through the opening provided the external diameter of the individual cables in the bundle does not exceed 21 mm and the overall diameter of the cable bundle does not exceed 100 mm.
Small tubes	<ul style="list-style-type: none"> ➤ small tubes made of steel or plastic with $\varnothing \leq 16$ mm
Conduits	<ul style="list-style-type: none"> ➤ Flexible or ridged conduit according to EN 61386 up to a diameter $\varnothing \leq 63$ mm ➤ Flexible and ridged conduits according to EN 61386-22 up to a diameter of 63 mm made from PE, PVC and Polyolefin and class 22322, 33412, 33532, 33532, 33541, 33411, 33521

* single or multicore cable with individual insulation of the cores and an additional protective covering of the assembly

"Wichmann-Kabelbox"

APPENDIX 3 – FIELD OF APPLICATION
Overview of the installations

Annex 13

INSTALLATION OF THE PENETRATION SEAL

1. General

- 1.1 Before installing the cable penetration seals, all framework conditions are to be checked for compliance (e. g. type and thickness of the wall or floor, type and dimensions of the cables and the ambient conditions) 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).

2. Installation of the cable fire stop

- 2.1 The sheet steel case should be inserted centric in the walls or floors rough opening (refer to annexes 4 to 6, 8, 11 and 12). Alternatively, one sided-flush installations are possible in rigid parts with a bigger thickness than 18,5 cm or floors with a bigger thickness than 21 cm (according to annex 9).
- 2.2 For installations of single sheet steel cases in flexible walls, the required openings must be arranged in such way that the steel profiles must not be changed. The wall opening should be produced according to the cross section of the box.
- 2.3 In case of installations of sheet steel case groups in flexible walls, the frame work of the walls must be supplemented with extra supporting steel profiles under every group in a way that they form a soffit under the group of penetration sealing. The wall planking must be fixed on the steel profiles according to relevant regulations. If necessary, the steel profiles of the walls have to be changed.
- 2.4 All gaps surrounding the sheet steel case as well as between the boxes and the soffit of the adjacent construction components should be fully sealed with mortar or gypsum according annex 1 (see annexes 4, 5 and 9).

The three-sided sheet steel cases with one-sided floor attachment – with or without installation of a bottom plate – must be fixed on the floor with adequate steel screws or steel dowels (refer to annex 8).

- 2.5 If multi-row penetration seals shall be installed in floors, the sheet steel cases edges neighbouring each other must be fastened by means of distance anchors, in which the distance anchors on each side should be held together via threaded rods, fixed with nuts (see annex 6 and 7).
- 2.6 After laying cables in the remaining area with the fire protection packets has to be completely sealed with the transparent covering caps. All gaps between the caps and the sheet steel case and the installations must be sealed with an elastic sealant (such as silicon or acrylate) (see annex 11).

Alternatively the open front side of the sheet steel case may be sealed with cut to size foam plugs according to annex 11. All remaining gaps between the foam plugs and the sheet steel case must be sealed with a permanent elastic sealant (such as silicone or acrylate).

Alternatively, one side may be left without the covering cap or foam plugs, if a piece of mineral fibre board with a thickness of 60 mm and a reaction to fire class A1 according to EN 13501-1 is inserted within the box. All remaining openings must be sealed mineral wool according to annex 1.

Alternatively to the mineral fibre boards 3 foam plugs after another may also be used. (Annex 11).

Optionally the interior of the box may additionally be filled with loose mineral wool according to annex 1.

Alternatively may, instead of mineral fibre mats one after another arranged foam stoppers in the remaining of the sheet steel casings (see annex 11).

Alternatively the sheet steel casings may be filled with non combustible mineral wool according to annex 1 (see annex 12)

- 2.7 Round or hexagonal boxes which are provided with factory made smoke sleeves may be sealed by means of binding wire (see annex 12).

"Wichmann-Kabelbox"

APPENDIX 4 – INSTALLATION OF THE PENETRATION SEAL

Annex 14

3. Refitting

As a physical provision for after configuration of cables plastic conduits may be fed through the 27 cm or 35 cm deep sheet steel case. The remaining openings at the ends of the conduits must be sealed on both sides of the penetration seal either with plastic caps, foam plugs or mineral wool according to Annex 1.


Sheet steel case without installations may alternatively be filled with loose non combustible mineral wool according to annex 1.

4. Physical safeguarding measure

In case of penetration seals in floors adequate precautions must be taken (e. g. by a safety fence or a steel grid) to keep the fire-stops save from burden, especially from trespass.

"Wichmann-Kabelbox"	Annex 15
APPENDIX 4 – INSTALLATION OF THE PENETRATION SEAL	

Example for CE marking

	"CE"-Zeichen / "CE" marking
XXXX	Identifizierungsnummer der notifizierten Stelle (für Konformitätsbescheinigungssystem 1) / Identification number of notified certification body
Wichmann Brandschutzsysteme GmbH & Co. KG Siemensstraße 7 57439 Attendorn Deutschland	Name und Anschrift des Herstellers oder seines autorisierten Vertreters (verantwortliche juristische Person) / Name and address of the producer (legal entity responsible for the manufacturer)
13	Die letzten beiden Ziffern des Jahres, in dem die CE-Kennzeichnung angebracht wurde / Two last digits of year of affixing CE marking
xxxx-CPD-xxxx	Nummer des EG-Konformitätszertifikats / Number of EC certificate of conformity
ETA-13/0902	Nummer der ETA / ETA number
ETAG N° 026 – part 2	Nummer der Leitlinie / ETAG number
"Wichmann Kabelbox" Kabelbox	Produktbezeichnung (Handelsname) / Designation of the product (trade name)
Nutzungskategorie / use category X	Nutzungskategorie / use category

"Wichmann-Kabelbox"

APPENDIX 5 – EXAMPLE FOR CE MARKING AND ADDITIONAL INFORMATIONS

Annex 16

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 penetration seal is reduced to the fire resistance class of the building element.
- LTW:** flexible wall according to annex 8
- MW:** rigid wall according to annex 8
- D:** rigid floor according to annex 8
- d_w:** wall thickness
- d_f:** floor thickness
- Ø:** external diameter
- s:** pipe wall thickness (nominal value according to the standards)
- U/U:** pipe end configuration "uncapped/uncapped" (on both sides open pipe ends in the fire test)
- EIR:** conduits

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
- EN 998-2:2010** Specification for mortar for masonry - Part 2: Masonry mortar

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** Characterization, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products (edition November 2006)

"Wichmann-Kabelbox"

APPENDIX 5 – ABBREVIATIONS AND REFERENCE DOCUMENTS

Annex 17