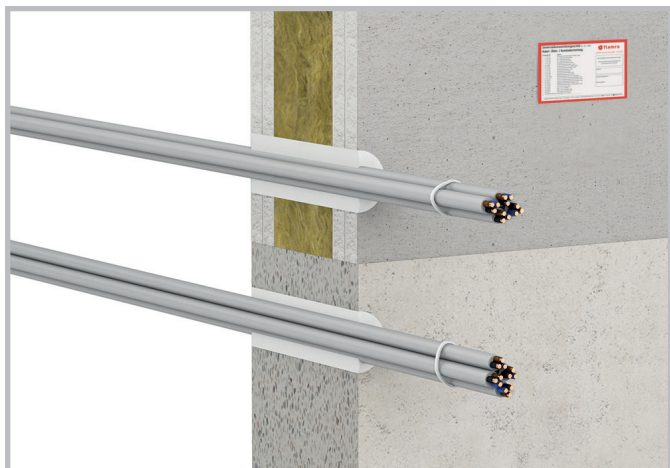


Assembly Instruction

FLAMRO DSB-W

according to ETA-16/0318



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Assembly Instruction

FLAMRO DSB-W

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Target audience

This assembly instruction is addressed exclusively to trained experts on fire technology.

Usage of assembly instruction

- Please read through the lot of this assembly instruction carefully prior to work start. Regard in particular the following safety information.
- The holder of assessment assumes no liability for damages which are caused by disregard for this assembly instruction.
- Graphic depictions serve as examples only. Assembly results may vary visually.

Safety information

For processing of partition components, please regard the safety data sheets.







Protection and hygiene measures:

- Observe the usual precautions when handling chemicals. Wash hands before work breaks and immediately after handling the product. Avoid contact with skin, eyes and clothing. Take off stained or soaked clothes immediately.

Eye wash with clean water (EN 15154).

Wear closed work clothing.

| | |
|---|--|
|  | Respiratory protection - Dust mask When exposure limit is exceeded (e.g. possible when turning on), use particle-filtering half mask FFP 1 (white). |
|  | Hand protection - Protective gloves Use waterproof, abrasion- and alkali-resistant nitrile gloves. Different requirements can result depending on application. Therefore observe additional recommendations by the protective gloves' manufacturer. |
|  | Eye protection – Use safety goggles |
|  | Body protection – Use protective work wear |

Do not eat, drink or smoke during work. After work is finished, wash all uncovered body parts with water and soap thoroughly.

- The area beneath the floor partition is to be blocked during construction work and during cure time (28 days) (barrier tape and warning sign: beware of potentially falling object, do not enter this area, construction work in floor component opening).
- The contractor for the manufacture of floor insulations must inform the client in writing (for onward transmission to the building contractor or his representative), that fire protection insulation in floors must be secured with appropriate measures against burdens, especially the entering by trespassers (e.g. through fencing or grating covers).

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Components

Rigid walls

The wall must have a minimum thickness of ≥ 100 mm and consist of concrete, aerated concrete or masonry. The wall shall be classified in accordance to EN 13501 - 2 for the required fire resistance period.

Rigid floors:

The floor must have a minimum thickness of ≥ 150 mm and consist of concrete or aerated concrete with a minimum raw density of 550 kg/m^3 . The rigid floor shall be classified in accordance with EN 13501 - 2 for the required fire resistance period.

Penetration seals in floors are to be secured with fences or grating against burdens or the entering of trespassers.

Lightweight partition walls:

Lightweight partition walls must have a minimum thickness of ≥ 100 mm and consist of steel stands (U and C profiles; 0,5 - 1,5 mm thickness) which are to be coated on both sides with at least two layers of 12,5 mm thick panels of classification A2-s1, d0 oder A1 in accordance to EN 13501-1.

Additionally, wood stands can be used instead of steel stands. In this context, it should be noted that there must be a minimum distance of 100 mm between wood stands and partition. The insulation in between those stands must be at least comply with the building material class A1 or A2 (in accordance to EN 13501-1) and have a raw density of $5 - 115 \text{ kg/m}^3$ (in accordance to EN 1363-1).

The soffit revetment must be built from steel stands with a minimum thickness of 0,6 mm and panels of the same specifications as of the wall.

The supporting structure must be classified for the necessary fire resistance duration in accordance to EN 13501-2.

Application field

| Identifier | Wall | Lightweight partition wall | Floor |
|--|--------------------------------|--------------------------------|--------------------------------|
| Thickness of the component | $\geq 100 \text{ mm}$ | $\geq 100 \text{ mm}$ | $\geq 150 \text{ mm}$ |
| Thickness of the penetration seal | $\geq 100 \text{ mm}$ | $\geq 100 \text{ mm}$ | $\geq 100 \text{ mm}$ |
| Maximal size of component opening (width x height) | $\emptyset \leq 65 \text{ mm}$ | $\emptyset \leq 65 \text{ mm}$ | $\emptyset \leq 65 \text{ mm}$ |
| Distance to other cable/pipe penetrations with DSB-W | $\geq 50 \text{ mm}$ | $\geq 50 \text{ mm}$ | $\geq 50 \text{ mm}$ |
| Distance to other openings or installations | $\geq 100 \text{ mm}$ | $\geq 100 \text{ mm}$ | $\geq 100 \text{ mm}$ |


Assembly Instruction

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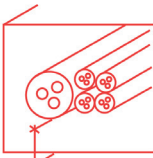
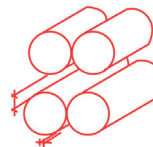
Approved assignments and classifications

Cable - wall and floor-

| Image | Assignment | Additional fire protection measures | E | I |
|---|--|---|-----|-----|
|  | Small sheathed cables $\leq 5 \times 1.5'$ and $\varnothing \leq 17 \text{ mm}$ | The remaining annular gap joint between cable and building element, width (0 - 10 mm) and the gusset in between cables as well as joints between cables and the building component must be filled with intumescent FLAMRO DSB. The distance among bundles must be $\geq 50 \text{ mm}$, the distance to other installations must be $\geq 100 \text{ mm}$. | 120 | 120 |
| | Cable bundles up to $\varnothing \leq 45 \text{ mm}$ | | | |

Steel cable trays or steel cable ladders must not be inserted through the penetration seal.

Distance regulations for rigid walls, lightweight partition walls and rigid floors



| Cables / cable bundles/ cable supporting structures | Distance | |
|---|---------------------------------|----------------------|
|  | Distance to component reveal | $\geq 0 \text{ mm}$ |
|  | Side by side distance of cables | $\geq 50 \text{ mm}$ |

Assembly Instruction

FLAMRO DSB-W

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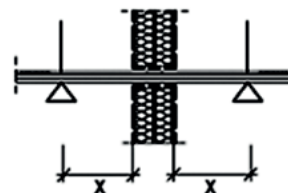
Applied products

| Image | Article Identifier | Art.-No.: |
|--|---|-----------|
|  | FLAMRO DSB-W 0.4 kg cartridge 2 syringes will be supplied for cartridges. | 31004 |
|  | Identification sign | 14000 |

Arrangement of the first support (backings)

Supports/Backings of the installations in front of the wall insulation must consist of essentially non-combustible components and be arranged with a distance according to following overview.

| Installation | Aall | Floor |
|----------------------|------------------------|----------------|
| Cable / cable bundle | ≤ 250 mm on both sides | ≤ 250 mm above |



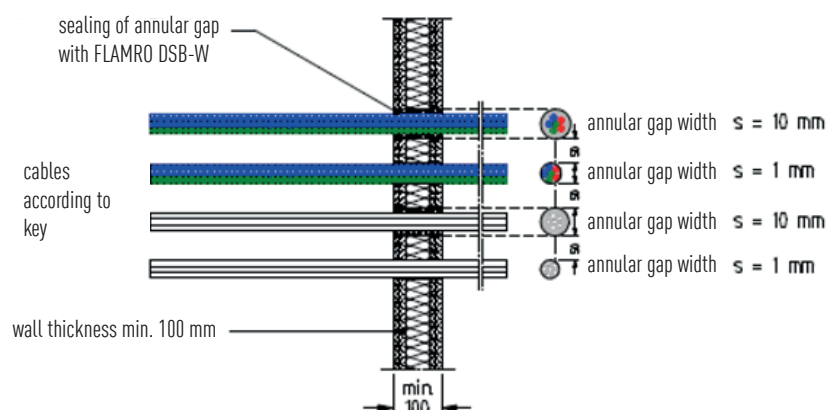
Assembly Instruction

FLAMRO DSB-W

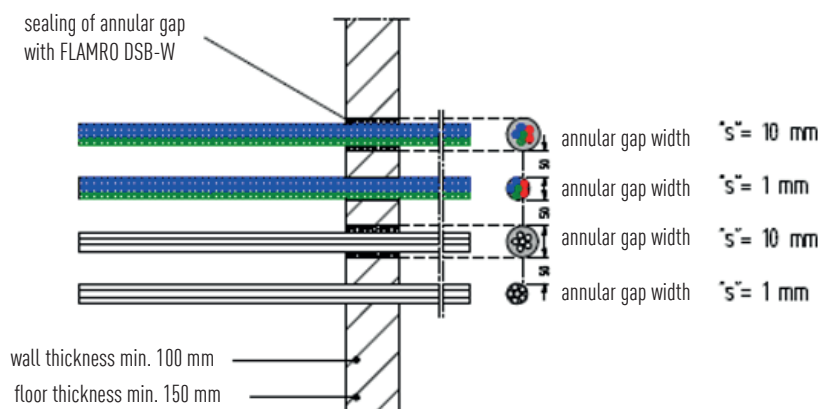
according to ETA-16/0318

Fire protection measures in walls and floors

Cable - Lightweight partition wall -



- Rigid components (walls and floor)-



- > The remaining annular gap (joint between cable and component, width 0 - 10 mm) and the gaskets in between cables as well as joints between cables and the component must be filled with intumescent FLAMRO DSB
- > No part of the penetration seal must be closer than 100 mm to a stand. The gap between penetration seal and stands is to be filled, by inserting 100 mm of insulation of classification A1 or A2 according to EN 13501-1 inside that gap.
- > The distance in between cable bundles must be $\geq 50 \text{ mm}$, the distance to other installations must be $\geq 100 \text{ mm}$
- > The maximum penetration seal dimension is $\varnothing \leq 65 \text{ mm}$.
- > For empty seals in floors, the filling height of FLAMRO DSB-W can be reduced to 100 mm

Assembly Instruction

FLAMRO DSB-W

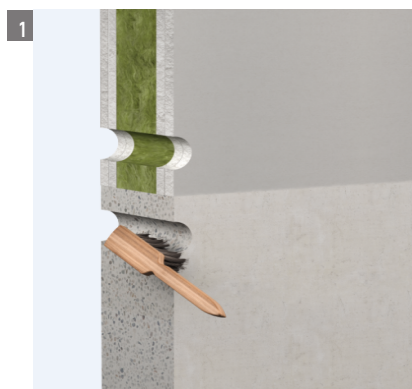
according to ETA-16/0318

Assembly

Guidelines for installation

Before installing the penetration seal, the reveal must be cleaned thoroughly. The area around the reveal is then masked with adhesive tape. Doing this, the adhesive strip must be fixated at least. 2.5 cm away from the reveal.

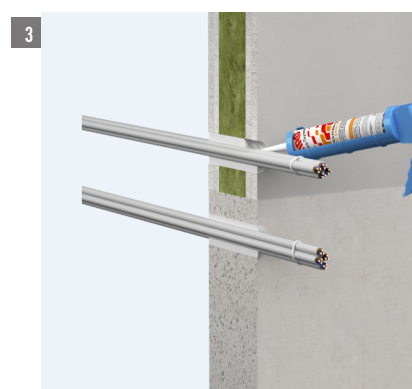
Assembly steps



Clean the reveal and remove all loose parts.



The gap between reveal and stands is to be sealed by inserting 100 mm of insulation of classification A1 or A2 according to EN 13501-1 inside the gap.



The remaining annular gap (joint between cable and component, width 0 - 10 mm) and the guessets in between cables as well as joints between cables and the component must be filled with intumescent FLAMRO DSB at building component's thickness.



The distance in between cable bundles must be ≥ 50 mm, the distance to other installations must be ≥ 100 mm.



For empty seals in floors, the filling height of FLAMRO DSB-W can be reduced to 100 mm



The penetration seal is to be labelled permanently with an identification sign. Finally clean work space.

Subsequent installation and dismantling

Subsequent installation and dismantling of cables is approved. Dismantling must be performed according to this assembly instruction.



DECLARATION OF PERFORMANCE

for product **FLAMRO DSB-W**

- | | | |
|------|---|--|
| 1. | Unique identification code of the product-type: | KA-16-0318 |
| 2. | Intended use: | Cable penetration seal |
| 3. | Manufacturer: | FLAMRO Brandschutz-Systeme GmbH Am Sportplatz 56291 Leiningen |
| 4. | Authorised representative: | Not relevant |
| 5. | System(s) of AVCP: | System 1 |
| 6.a) | Harmonised standard: | Not relevant |
| 6.b) | European Assessment Document: | ETAG-026, Part 2, August 2011 |
| | European Technical Assessment: | ETA-16/0318 |
| | Technical Assessment Body: | ETA-Danmark A/S, DK-2150 Nordhavn |
| | Notified bod/ies: | Materialprüfanstalt für das Bauwesen Braunschweig, Nr. 0761 |

7. Declared performance

| Essential characteristics | Performance | Harmonised technical specification |
|--|--------------------------------------|------------------------------------|
| Kabelabschottung für die Durchführung von kleinen Mantelleitungen und Kabelbündel (Telekommunikationskabel). Geeignet für den Einbau in Öffnungen von mindestens 100 mm dicken Leichtbau- und Massivwänden sowie in min. 150 mm dicken Decken aus Beton oder Porenbeton. *) | EI 120 | ETA-16/0318 |
| Dauerhaftigkeit und Gebrauchstauglichkeit | Nutzungskategorie Typ Y ₂ | |
| Luftdurchlässigkeit | NPD | |
| Wasserdurchlässigkeit | NPD | |
| Abgabe schädlicher Stoffe | wassergefährdend | |
| Mechanische Festigkeit und Standsicherheit | NPD | |
| Festigkeit gegenüber Stoß / Bewegung | NPD | |
| Haftfähigkeit | NPD | |
| Luftschalldämmung | NPD | |
| Wärmeschutztechnische Eigenschaften | NPD | |
| Wasserdampfdurchlässigkeit | NPD | |
| Bestandteile - Brandverhalten | Euroklass gemäß EN 13501-1 | |
| FLAMRO DSB-W | E | |
| *) Angaben aus ETA-16/0318 | | |

8. Appropriate Technical Documentation / Specific Technical Documentation:

Not relevant

Website where Declaration of Performance can be viewed:
www.flamro.com



The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued in accordance with Regulation (EU) No. 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Dr. Hemp, Head of R&D / Authorised officer, FLAMRO Brandschutz-Systeme
(Name and position))

Leiningen, 27.10.2017
(Place and date of issue))

A handwritten signature in blue ink, appearing to read 'Dr. Hemp', written over a horizontal dotted line.

(signature)