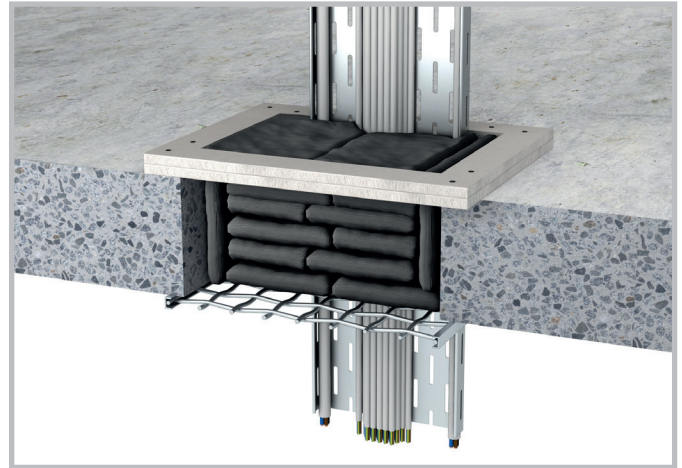


## Assembly Instruction

### FLAMRO BK-N

according to ETA-17/0904



## Content

Target audience, usage of assembly instruction, safety information	2
Components	2
Application field (Component strength, insulation strength and distances)	3
Approved assignment	3
Distance regulations	4
Applied products	5
Implementing regulations and modifications	5
Arrangement of the first support (backings)	6
Fire protection measures for wall	7
Fire protection measures for floor	8
Assembly steps	9
Declaration of performance	10

## Assembly Instruction

### FLAMRO BK-N

according to ETA-17/0904

#### 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.



##### Personal protective equipment:

- Hand protection: protective gloves made from rubber or PVC
- Do not eat, drink or smoke during work.
- Wash uncovered body parts with water and soap after work is finished.

##### Safety information for installation of floor partitions

- The area beneath the floor partition is to be blocked during construction work (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).

## Components

#### Rigid walls

The wall must have a minimum thickness of  $\geq 100$  mm and consist of concrete, aerated concrete or masonry.

The rigid wall shall be classified in accordance with EN 13501 – 2 for the required fire resistance period.

#### Rigid floor

The floor must have a minimum thickness of  $\geq 150$  mm and consist of concrete or aerated concrete.

The rigid floor shall be classified in accordance with EN 13501 – 2 for the required fire resistance period.

#### Lightweight partition walls

The lightweight partition wall must have a minimum thickness of  $\geq 100$  mm and comprise timber or steel studs according to EN14195, which has to be covered in at least 2 layers of gypsum boards (minimum thickness 12,5 mm) according to EN 520.

All fields in between the studs must be filled with an at least 40 mm mineral wool insulation (Density  $\geq 100$  kg / m<sup>3</sup>).

## Assembly Instruction

### FLAMRO BK-N

according to ETA-17/0904

For the stud walls there must be a minimum distance of  $\geq 350$  mm of the penetration seal to any stud and the cavity between the penetration seal and the stud shall be closed with a minimum 350 mm of insulation with classification Euro class A1 or A2 according to EN 13501 – 1 in the cavity between stud and seal. The wall construction shall be classification according to EN13501 – 2.

### Application Field

Identifier	Wall	Floor
Thickness of the component	$\geq 100$ mm	$\geq 150$ mm
Thickness of the penetration seal	$\geq 250$ mm	$\geq 250$ mm
Maximal size of component opening (width x height)	600 x 600 mm ( $\leq 0,36$ m <sup>2</sup> )	600 x 600 mm ( $\leq 0,36$ m <sup>2</sup> )
Distance to other cable/pipe penetrations	$\geq 100$ mm	$\geq 100$ mm
Distance to other openings or installations	$\geq 100$ mm	$\geq 100$ mm

### Approved assignments and classifications


Classification in correlation to the installation orientation			
Approval assignment	Floors with penetrating steel trays and ladders	Floors with interrupted steel trays and ladders	Wall
All sheathed cables $\varnothing \leq 21$ mm	E 180	E 180	E 120
	EI 180	EI 180	EI 120
All sheathed cables $\varnothing \leq 50$ mm	E 180	E 180	E 120
	EI 120	EI 90	EI 120
All sheathed cables $\varnothing \leq 80$ mm	E 180	E 180	E 120
	EI 180	EI 90	EI 90
Cable bundle $\varnothing \leq 100$ mm	E 180	E 180	E 120
	EI 120	EI 120	EI 120
Non-sheathed cables $\varnothing \leq 24$ mm	E 180	E 180	E 120
	EI 120	EI 90	EI 120
Conduits made of plastic or steel, pipe end configuration C/C, $\varnothing \leq 16$ mm	E 180	E 180	E 120
	EI 180	EI 180	EI 120
Blank seal	E 120 / EI 120		

## Assembly Instruction

### FLAMRO BK-N

according to ETA-17/0904

#### Distance regulations for rigid walls, lightweight partitions and floors





Cable / cable bundle / cable trays, ladders		Distance
	Sideways distance to component reveal	≥ 20 mm
	Side by side distance	≥ 20 mm
	Lower / back distance to component reveal	≥ 20 mm
	Upper / front distance to component reveal	≥ 80 mm
	One below the other distance	≥ 100 mm
Conduits made of steel or plastic		
	Side by side distance	≥ 0 mm

## Assembly Instruction

### FLAMRO BK-N

according to ETA-17/0904

#### Applied Products

Image	Article identifier	Dimensions	PU	Art-No.
	BK-N Fire protection pillow	Size S 250 x 60 x 30 mm	10 pcs	12060
	BK-N Fire protection pillow	Size M 250 x 130 x 35 mm	7 pcs	12130
	BK-N Fire protection pillow	Size L 250 x 180 x 35 mm	5 pcs	12180
	Kerafix® Flexpan 200 NG-A	included in every packaging unit		
	Identification Sign		1 pcs	14000
	Glass fibre for floor partitions	included in every packaging unit		

#### Regulations and modifications

The cable penetration seal may be applied with or without installations for sealing openings (subsequent insulation) and openings laid with cables.

- Penetration seals in floors must be protected against trespassers with fencing or grating provided by the customer.
- To prevent trespassers from removing the fire protection pillows from cable insulations, it is recommended to secure them possibly with mesh wire which should be stretched across cable insulation surface and be bolted by the neighbouring walls or floors.
- For installation in lightweight partitions, an all around soffit revetment is required.
- For walls with a thickness of  $\geq 100$  mm and  $< 200$  mm, a min. 30 mm thick and min. 200 mm wide layer made of non-combustible fire protection layer made of non-combustible fire protection panels (e.g. GKF, gypsum fiber boards or calcium silicate panels) is to be arranged symmetrically on the bottom reveal of the rough opening of the structural element.
- The required technical fire protection measures are depicted on the following pages and also apply for subsequent installations.

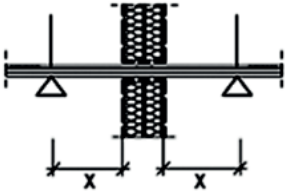
## Assembly Instruction

### FLAMRO BK-N

according to ETA-17/0904

#### 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.

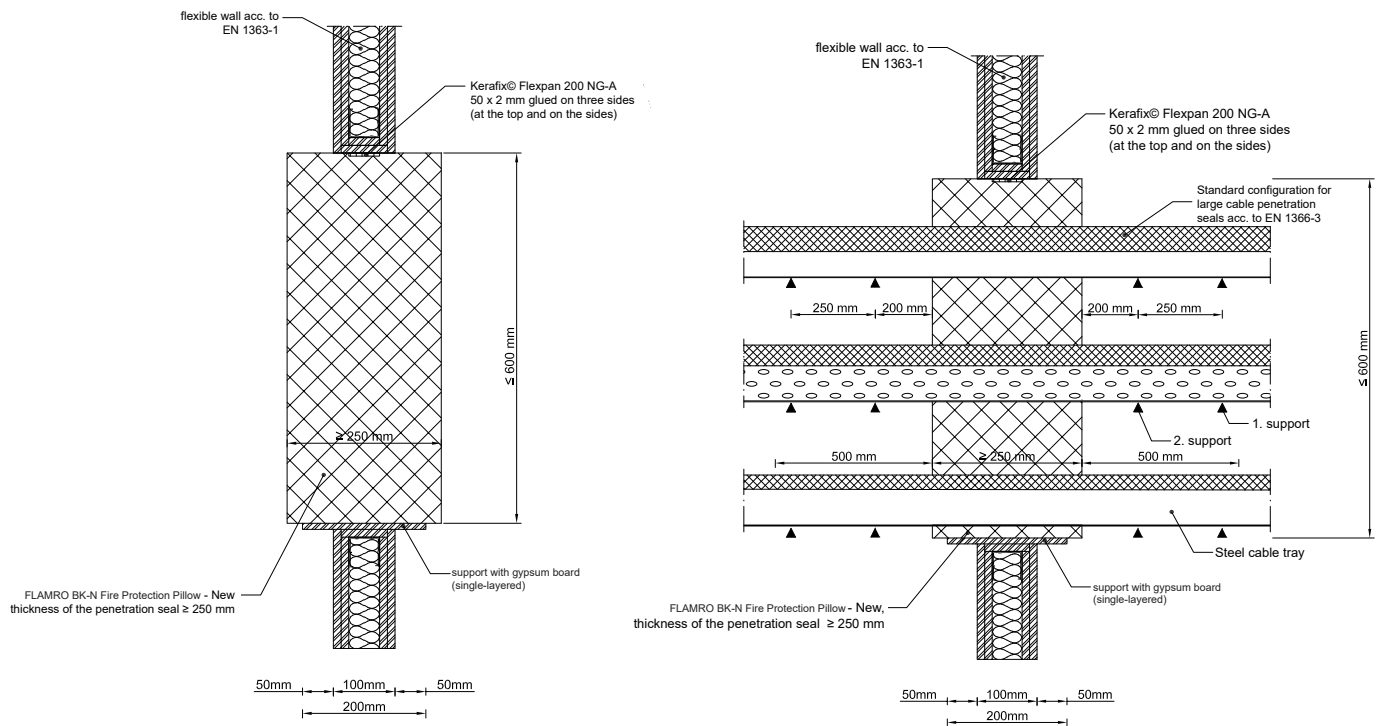
Wall	$\leq 25$ cm on both sides from wall
Floor	$\leq 55$ cm above floor
	

## Assembly Instruction

### FLAMRO BK-N

according to ETA-17/0904

#### Fire protection measures in walls

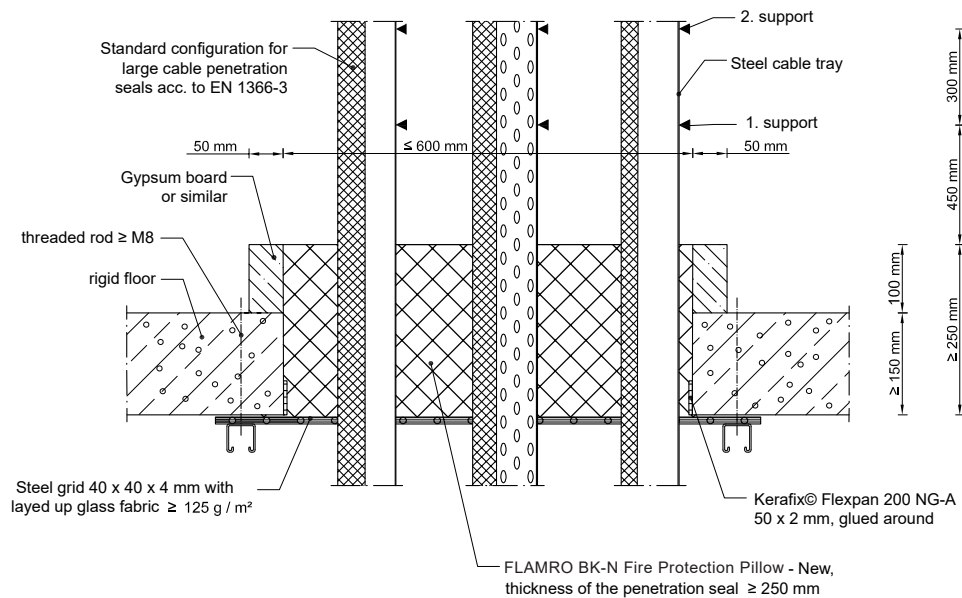
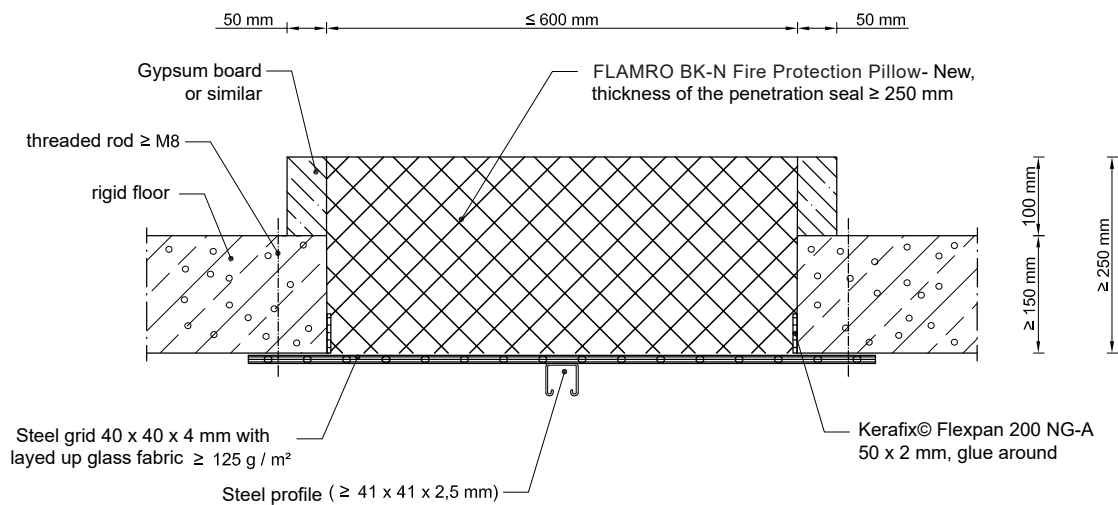


## Assembly Instruction

### FLAMRO BK-N

according to ETA-17/0904

#### Fire protection measures in floors





## Assembly Instruction

### FLAMRO BK-N

according to ETA-17/0904

Please respect the approval. All documents can be downloaded under [www.flamro.com/services/downloads](http://www.flamro.com/services/downloads).

We assume that

- damage on the isolation will be repaired
- due to the installation of the isolation none of the adjoining components loose stability - also in case of fire
- wall or ceilings do not carry any further load on the isolation
- conducts will be mounted to adjoining components (not the isolation)

### Assembly Steps



1 Clean the aperture and remove all loose parts. Check the correct installation of the cable tray/ladder on wall and floor. Cable trays and ladders shall be supported 250 mm and 500 mm apart from walls and  $\leq 550$  mm above floors.



2 In case of walls 50 mm of the intumescent strip Kerafix® Flexpan 200 NG-A have to applied on the sides and on the middle of the reveal. In walls the same strip has to be applied around the reveal. If possible, provide on layer of pillows underneath the cable bundle or cable tray/ladder.



3 Stuff all other layers of fire protection pillows very tightly around the cables. For that purpose, the use of pillows in different sizes is recommended.



4 At a floor thickness of  $< 250$  mm the floor must be doubled with non-combustible building panels to the minimum thickness of 250 mm. The steel grid at the bottom side of the opening is for installation of the fire protection pillows.



5 The application in lightweight partition  $\geq 100$  mm is possible. At a wall thickness of  $< 200$  mm the floor must be doubled with non-combustible building panels to the minimum thickness of 200 mm.



6 Make sure that the fire protection pillows are installed in a staggered pattern. Finally apply the label.



## DECLARATION OF PERFORMANCE

for product **FLAMRO BK - N B**Fire Protection Pillows

1.	Distinct identification code of product type:	<b>KA-17-0904</b>
2.	Intended use:	<b>Cable penetration seal</b>
3.	Manufacturer:	<b>FLAMRO Brandschutz-Systeme GmbH</b> <b>56291 Leiningen</b> <b>Germany</b>
4.	Representative:	<b>not relevant</b>
5.	System(s) of assessment and verification of constancy of performance:	<b>System 1</b>
6.a)	Harmonised Standard:	<b>not relevant</b>
6.b)	European Technical Document:	<b>ETAG-026, Teil 2,</b> <b>August 2011</b>
	European Technical Assessment:	<b>ETA-17/0904</b>
	Technical Assessment Body:	<b>ETA-Danmark A/S, DK-2150 Nordhavn</b>
	Notified Body / Bodies:	<b>Materialprüfanstalt für das Bauwesen</b> <b>Braunschweig, Nr. 0761</b>

7. Declared performance

Essential characteristics	Performance	Harmonised technical specifications
Penetration seal for penetration of sheathed and non-sheathed cables, firmly corded cable bundles, conduits c/c made of steel or plastic as well as cable supporting constructions made of steel. Suitable for installations in openings of min. 100 mm thick lightweight partition walls or rigid walls as well as min. 150 mm thick floors made of concrete or aerated concrete. *)	Depending on configuration and component max. EI 180	ETA-17/0904
Durability and service ability	Use category Type Z <sub>2</sub>	
Air permeability	NPD	
Water permeability	NPD	
Release of dangerous substances	none	
Mechanical resistance and stability	NPD	
Resistance to impact / movement	NPD	
Adhesion	NPD	
Airborne sound insulation	NPD	
Thermal properties	NPD	
Water vapour permeability	NPD	
Components - Reaction to fire	Euro Class according to EN 13501-1	
FLAMRO BK-N	E	
Kerafix® Flexpan 200 NG-A	E	
*) Information from ETA-17/0904		

8. Appropriate technical documentation /  
specific technical documentation:

**not relevant**

**Website where Declaration of Performance can be viewed:  
[www.flamro.com](http://www.flamro.com)**



The performance of the above product corresponds to the declared performance(s). The producer mentioned above is solely responsible for the preparation of the service declaration in accordance with Regulation (EU) No. 305/2011.

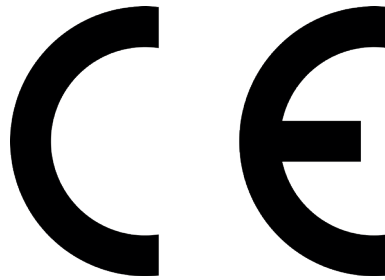
Signed for the manufacturer and on behalf of the manufacturer

Harry Vollmer, Product manager  
(Name und position)

Erndtebrück, 18.05.2017  
(Location and date of issue)



(signature)



0761

FLAMRO Brandschutz-Systeme GmbH  
Am Sportplatz 2, D-56291 Leiningen  
Germany

Brandschutzkissen / Fire Protection Pillows

**„FLAMRO BK-N“**

Brandverhalten / Reaction to fire  
Klasse / Class E

Nach / Acc. to EN 13501-1

Abgabe gefährlicher Stoffe: keine /  
Release of dangerous substances: none

Jahr / year	16
Zertifikat der Leistungsbeständigkeit / Certificate of constancy of performance	0761-CPR-0625
ETA-Nummer / No.	ETA-17/0904
Feuerwiderstandsklasse / Fire resistance class	max. EI 180
ETA Leitlinie / ETA Guideline	ETAG 026-Teil 2/ part 2, 2011-08
Eindeutiger Kenncode / Unique identification code	KA-17-0904
Kabelabschottung/ Penetration seal	„FLAMRO Variant BK-N“
Nutzungskategorie/ Use category	Z <sub>2</sub>
Leistungserklärung Nr. / Declaration of performance No.	26102017 BK-N
Für weitere relevante Produktmerkmale siehe / For other relevant characteristics see	ETA-17/0904
Bemerkung / remark	---

**Webseite, von der die Leistungserklärung abrufbar ist /**

**Website the declaration of performance can be found:**

**[www.flamro.com](http://www.flamro.com)**