

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-16/0127**  
**of 13 September 2016**

English translation prepared by DIBt - Original version in German language

### General Part

Technical Assessment Body issuing the  
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

"BarraFlame DMK"

Product family  
to which the construction product belongs

Intumescent Product used for penetration seals

Manufacturer

BASF Personal Care and Nutrition GmbH  
Robert-Hansen-Straße 1  
89257 Illertissen  
DEUTSCHLAND

Manufacturing plant

BASF Personal Care and Nutrition GmbH  
Robert-Hansen-Straße 1  
89257 Illertissen  
DEUTSCHLAND

This European Technical Assessment  
contains

9 pages including 5 annexes which form an integral part  
of this assessment

This European Technical Assessment is  
issued in accordance with Regulation (EU)  
No 305/2011, on the basis of

Guideline for European technical approval of "Fire  
Stopping and Fire Sealing Products", ETAG 026 Part 2:  
"Penetration Seals",  
used as European Assessment Document (EAD)  
according to Article 66 Paragraph 3 of Regulation (EU)  
No 305/2011.

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## Specific Part

### 1 Technical description of the product

The construction product "BarraFlame DMK" is an intumescent material. It is supplied in cartridges, pails or drums as a putty of white colour. When exposed to fire it expands and creates foam which seals gaps, joints and holes and therefore prevents the passage of heat, flame and/or smoke.

Detailed technical specifications and performance criteria relevant for fire safety with regard to the construction products are given in Annex 1.

NOTE:

The characteristics listed can serve both for identifying the construction product as well as for performing the manufacturer's factory production control.

### 2 Specification of the intended use in accordance with the applicable European Assessment Document

The construction product "BarraFlame DMK" is intended to be used as a component with a fire protection effect in penetration seals.

Penetration seals are parts of the works which prevent heat transmission and fire spreading in the event of fire in areas where fire resistant walls and/or floors are penetrated by services.

Within the scope of this ETA, the fire resistance was demonstrated for mixed and blank penetration seals<sup>1</sup> which consisted of the components listed in Annex 2. The construction product "BarraFlame DMK" was used in this penetration seals for filling gaps between mineral fiber boards which are installed within openings penetrated by cables and pipes, between these mineral fiber boards and the aperture edge within the building element and to form a concave fillet around the penetrating cables.

Detailed information and data on the verified penetration seals are given in Annexes 1 to 5. The performances given in Section 3 exclusively relate to this penetration seals (e.g. with respect to the design and arrangement of the components of the penetration seals and the type and position of the services).

The verification and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of at least 10 years for "BarraFlame DMK" when used under use conditions type Z<sub>1</sub> or Z<sub>2</sub> according to EOTA TR 024. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, but are to be regarded only as a means for choosing the right product in relation to the expected economically reasonable working life of the works.

<sup>1</sup> Mixed penetration seals are used to seal off openings penetrated by both cables and pipes. Blank penetration seals serve to demonstrate the preservation of the fire resistance in case of a low number of services passing through the opening.

English translation prepared by DIBt

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

**3.1 Safety in case of fire (BWR 2)**

| Essential characteristic  | Performance   |
|---|---|
| Fire resistance of a penetration seal incorporating the product | The fire resistance depends on the construction/installation of the penetration seal and on the other components incorporated in the penetration seal. Details on the verified penetration seals and the related fire resistance classes are given in Annexes 1 to 5. |

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

In accordance with the Guideline for European technical approval "Fire Stopping and Fire Sealing Products", ETAG 026, Part 2: "Penetration Seals", January 2008, which is used as European Assessment Document (EAD), the following legal base shall apply: 1999/454/EC.

The system to be applied is: system 1

**5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD**

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

Issued in Berlin on 13 September 2016 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe  
Head of Department

*beglaubigt:*  
Meske-Dallal

**Properties and criteria for the performance of the construction product "BarraFlame DMK"**

|   | Properties                                       | Test method                              | Parameter  |
|---|--|--|--|
| 1 | Apparent density ("liquid") [kg/m <sup>3</sup> ] | EN ISO 2811-1                            | (1200 – 1260) kg/m <sup>3</sup>                            |
| 2 | Nonvolatile components [%]                       | EN ISO 3251                              | 56,0 % +/- 5 %   |
| 3 | Weight loss due heating [%]                      | EN ISO 3451-1; EOTA TR 024:2009 at 400°C | 52,0 % +/- 5 %   |
| 4 | viscosity ("liquid") [mPa s]                     | EN 12092                                 |  |
| 5 | Foam height [mm]                                 | EOTA TR 024:2009                         | 36 bis 50<br>Without any top load at 400 °C for 30 minutes |

The properties listed can be used both for identifying the construction products as well as for the implementation of the factory production control by the manufacturer.

Implementation details for the factory production control are included in the test plan.

**Performance of penetration seals "BarraFlame Mixed Penetration Seal 90/120" comprising the construction product "BarraFlame DMK"**

|   | Essential requirement | Test method | Design of the test specimen  | Performance |
|---|-----------------------|-------------|--|-------------|
| 1 | Resistance to fire    | EN 1366-3   | 100 mm thick flexible wall; design and layout of the penetration seal according to Annexes 3 and 4*          | EI 90       |
| 2 | Resistance to fire    | EN 1366-3   | 100 mm thick flexible wall; blank penetration seal (design analogue 1 but without services)                  | EI 90       |
| 3 | Resistance to fire    | EN 1366-3   | 150 mm thick aerated concrete floor; design and layout of the penetration seal according to Annexes 3 and 5* | EI 90       |
| 4 | Resistance to fire    | EN 1366-3   | 150 mm thick aerated concrete floor; blank penetration seal (design analogue 3 but without services)         | EI 90       |

\* Illustration without guarantee for completeness.

The use of the construction product "BarraFlame DMK" within penetration seals of the type "BarraFlame Mixed Penetration Seal 90/120" shall be in accordance with national requirements and in accordance with the installation instruction of the manufacturer. The tested/illustrated seals are only examples for the use.

"BarraFlame DMK"

Description of the construction products, properties and performance  
Properties of the construction product "BarraFlame DMK" and performance of penetration seals "BarraFlame Mixed Penetration Seal 90/120" comprising "BarraFlame DMK"

Annex 1

**Description of additional components of the tested penetration seals**

| Designation / Manufacturer  | Description  |
|---|--|
| <p><b>"BarraFlame DMA"</b><br/>BASF Personal Care und Nutrition GmbH<br/>892578 Illertissen<br/>Deutschland</p>                     | <p><b>Intumescent material</b>, coating<br/>according to ETA-16/0126</p>   |
| <p><b>"Hardrock 040"</b><br/>("Hardrock II")<br/>Deutsche Rockwool Mineralwoll GmbH<br/>45966 Gladbeck<br/>Deutschland</p>          | <p><b>Mineral fiber board</b> according to DIN EN 13162<br/>Thickness: 60 mm<br/>Nominal density: 150 kg/m<sup>3</sup><br/>Reaction to fire class according to DIN EN 13501-1:<br/>class A1</p>            |
| <p><b>"FPB D150"</b><br/>Knauf Insulation d.o.o.<br/>Skofja Loka<br/>Slovenien</p>  | <p><b>Mineral fiber board</b> according to DIN EN 13162<br/>Thickness: 60 mm<br/>Nominal density: 150 kg/m<sup>3</sup><br/>Reaction to fire class according to DIN EN 13501-1:<br/>class A1</p>            |
| <p><b>"KBS Pipe Seal SN"</b><br/>BASF Personal Care und Nutrition GmbH<br/>892578 Illertissen<br/>Deutschland</p>                   | <p><b>Pipe collar</b> with steel housing and intumescent<br/>material<br/>according to ETA-16/0214</p>   |
| <p><b>"Rohrschale 800"</b><br/>("Lapinus Rohrschale")<br/>Deutsche Rockwool Mineralwoll GmbH<br/>45966 Gladbeck<br/>Deutschland</p> | <p><b>Mineral fiber pipe section</b> according to DIN EN<br/>14303<br/>Thickness: 30 mm<br/>Nominal density: 100 kg/m<sup>3</sup><br/>Reaction to fire class according to DIN EN 13501-1:<br/>class A1</p> |

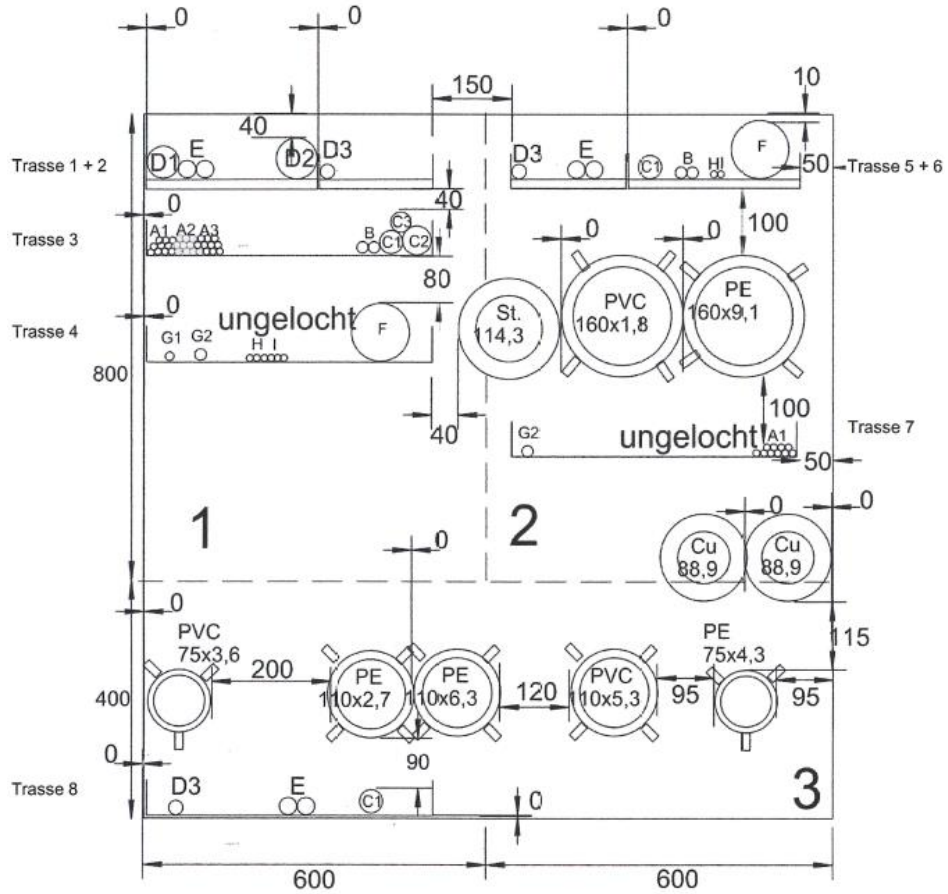
"BarraFlame DMK"

Description of the construction products, properties and performance  
Properties of additional components of penetration seals "BarraFlame Mixed Penetration  
Seal 90/120"

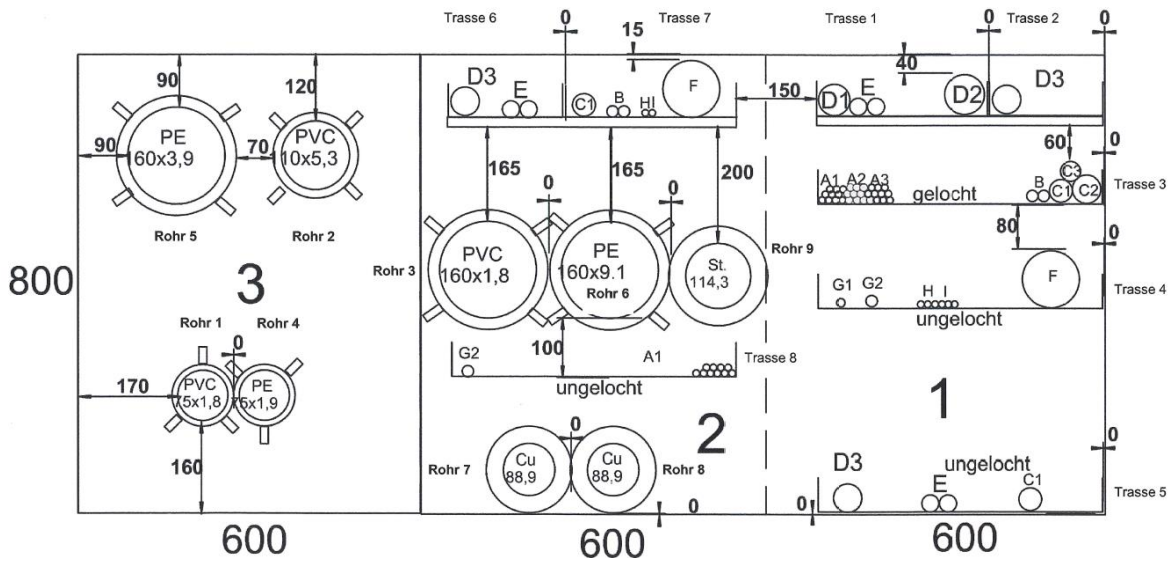
Annex 2

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**Layout of the test specimen for wall installation**



**Layout of the test specimen for floor installation**



dimensions in mm

"BarraFlame DMK"

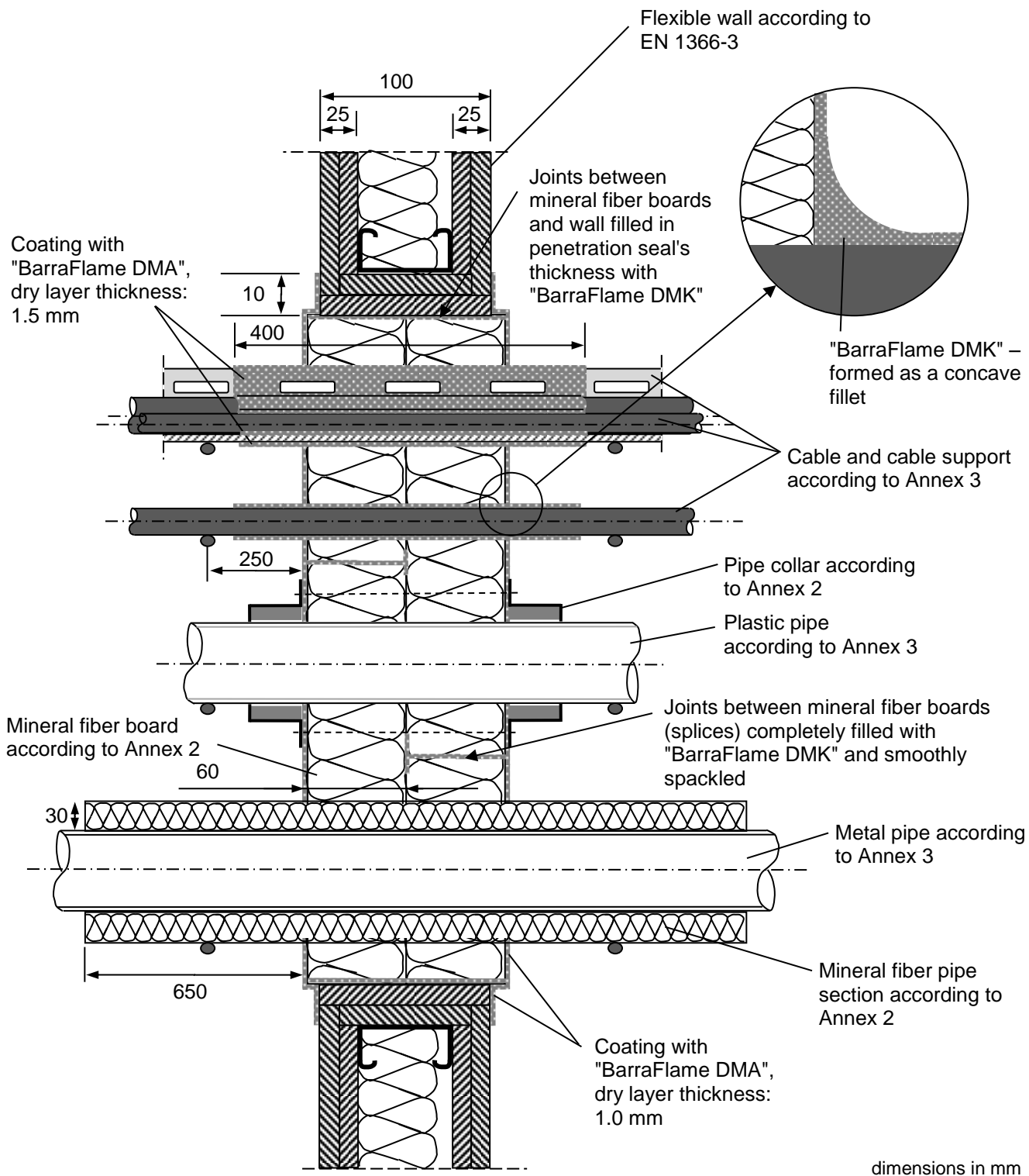
Use as part of a mixed penetration seal with a resistance to fire class **EI 90**  
Layout of the test specimens in wall and floor – front view

Annex 3

electronic copy of the eta by dibt: eta-16/0127



**Wall installation of the penetration seal - section:**



electronic copy of the eta by dibt: eta-16/0127

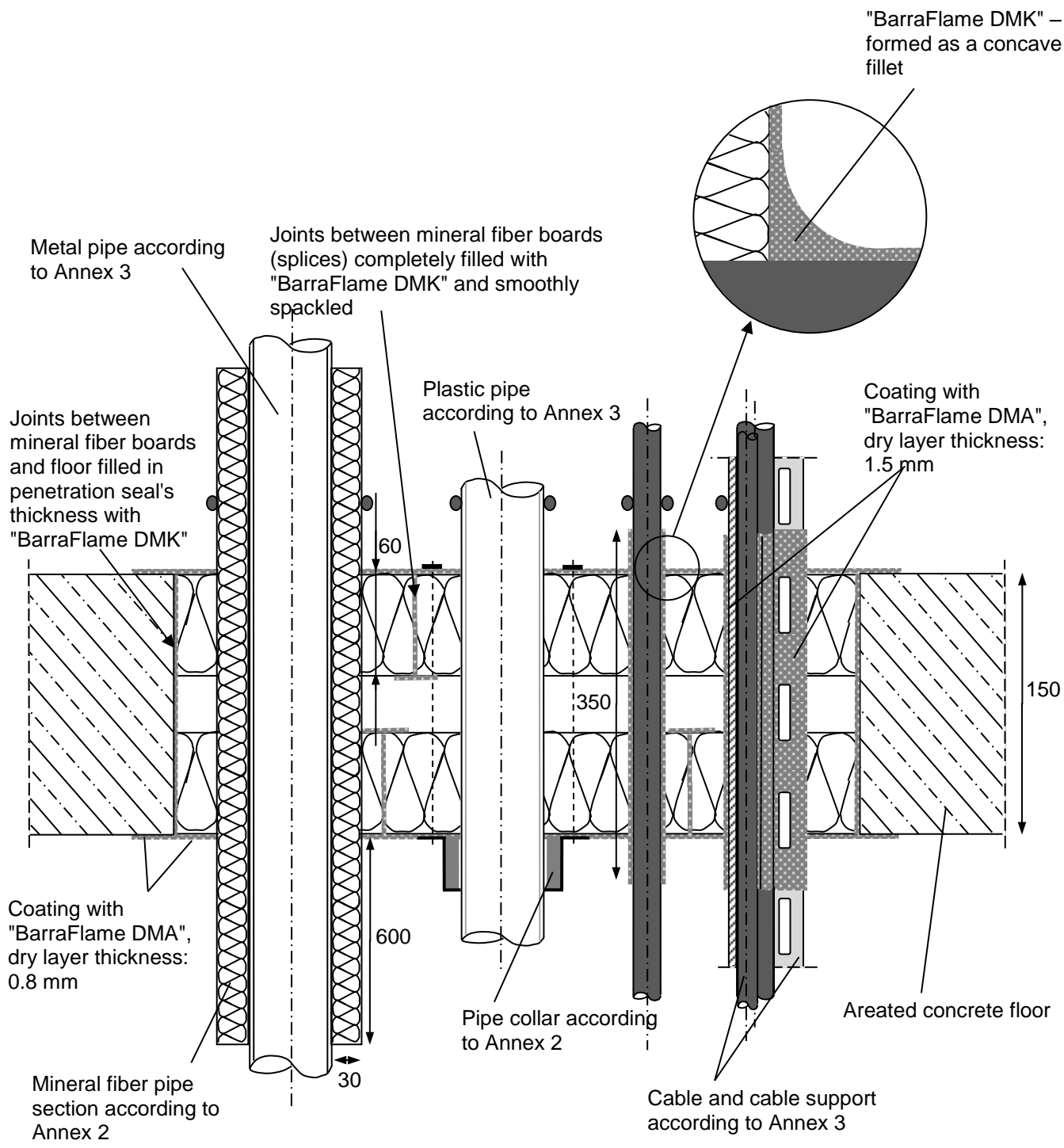
"BarraFlame DMK"

Use as part of a mixed penetration seal with a resistance to fire class **EI 90**  
Wall installation – section

Annex 4



### Floor installation of the penetration seal - section:



dimensions in mm

"BarraFlame DMK"

Use as part of a mixed penetration seal with a resistance to fire class **EI 90**  
Floor installation – section

Annex 5