

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-20/0238**  
**of 23 July 2020**

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

FlamoX

Product family  
to which the construction product belongs

Cap with intumescent inlay for recessed luminaires in fire  
resistant suspended ceilings

Manufacturer

KAISER GmbH & Co. KG  
Ramsloh 4  
58579 Schalksmühle  
DEUTSCHLAND

Manufacturing plant

KAISER GmbH & Co. KG  
Ramsloh 4  
58579 Schalksmühle  
DEUTSCHLAND

This European Technical Assessment  
contains

11 pages including 7 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

EAD 351281-00-1104

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## Specific part

### 1 Technical description of the product

The construction product "FlamoX" consists of a moulded part made of sheet steel, a fire-protective inlay made of an intumescent material, which expands under heat exposure, and a fire-protective board.

The construction product is manufactured in different sizes as given in Annexes 2 and 3.

A detailed technical description of the fire safety related performance criteria (e.g. dimensions) of the construction product is given in Annexes 1 to 3.

Detailed information on the construction product's components is deposited with DIBt.

NOTE:

The characteristics listed are suitable 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 "FlamoX" is used as a component of penetration seals for recessed lights (downlights) in fire-resistant suspended ceilings.

These penetration seals are used to seal openings in fire-resistant suspended walls in which recessed lights are installed. Their aim is to preserve the resistance to fire of the fire-resistant suspended ceiling in the area of the recessed lights.

This ETA has served to verify the resistance to fire of penetration seals containing a construction product of type "FlamoX".

The construction product "FlamoX" may be used in penetration seals of use category Z<sub>2</sub> (product intended for use under dry internal conditions without frost (relative humidity between 50 % and 85 % and temperatures between +5 °C and 90 °C ± 5 °C) provided that the other components of the penetration seal meet the durability requirements. The resistance to fire of the penetration seals shall be verified on a case-by case basis.

More detailed information and data on the verified penetration seals are given in Annexes 4 to 7.

The performance data given in Section 3 relates exclusively to these penetration seals (e.g. with respect to the design and arrangement of the penetration seal components and the type and position of the recessed lights).

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

#### 3.1 Intended use: use in penetration seals

#### 3.2 Safety in case of fire (BWR 2)

| Essential characteristic                                                                                                                                         | Performance                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fire behavior of the "Housing";<br>sheet steel, DX 51 D+Z                                                                                                        | Class A1 according to the commission decision 96/603/EC (current version))                                                                                                                                                                                                    |
| Fire behavior of the "Inlay";<br>intumescent building material <sup>1</sup>                                                                                      | Class E acc. to EN 13501-1                                                                                                                                                                                                                                                    |
| Fire behavior of the "Plate";<br>"Rigips Feuerschutzplatte DF" acc. to declaration of performance<br>no.Rigips_Feuerschutplatte_RF_12,5_LE_0613<br>of 23.04.2013 | Class A2, s1, d0 acc. To EN 13501-1                                                                                                                                                                                                                                           |
| Resistance to fire of a penetration seal containing the product                                                                                                  | The resistance to fire depends on the design and installation of the penetration seal and on the other components that make up the penetration seal.<br><br>More details on the tested penetration seals and the related fire resistance classes are given in Annexes 1 to 7. |

#### 3.2 Hygiene, health and the environment (BWR 3)

| Essential characteristic                    | Performance                          |
|---------------------------------------------|--------------------------------------|
| Content and release of dangerous substances | No dangerous substances <sup>2</sup> |

### 4 Assessment and verification of constancy of performance system applied, with reference to its legal basis

In accordance with European Assessment Document (EAD) no. 351281-00-1104, the following legal basis shall apply: 1999/454/EC.

The system to be applied is: 1 for all uses except uses subject to reaction-to-fire requirements.

For uses subject to reaction-to-fire requirements, AVCP system 1, 3 or 4 shall apply depending on the conditions set out in the relevant decision.

<sup>1</sup> The composition of the materials is deposited at DIBt.

<sup>2</sup> In accordance with Regulation (EC) No 1272/2008 of the European Parliament and the European Council of 16 December 2008 (published in the Official Journal of the European Communities L 353 of 31 December 2008, p. 1)

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

The technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with DIBt.

Issued in Berlin on 23 July 2020 by Deutsches Institut für Bautechnik

Maja Tiemann  
Head of Department

*beglaubigt:*  
Bisemeier

The factory manufactured construction products "FlamoX" consists of a moulded part made of sheet steel, an insert of an intumescent building material and a fire protective board

#### Properties and performance criteria of the components of the construction product "FlamoX"

| Component | Description                                                                                                                                                                                                                                      |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| "Housing" | Dimensions: see 2 and 3<br>Material: sheet steel, DX 51 D+Z<br>Thickness: 0,6 mm<br>Classification of the fire behavior: Class A1 according to the commission decision 96/603/EC (current version))                                              |
| "Inlay"   | Dimensions: see Annexes 2 and 3<br>Material: Intumescent building material*<br>Classification of the fire behavior according to EN 13501-1: Class E                                                                                              |
| "Plate"   | Material: Rigips Feuerschutzplatte DF; Rigips GmbH, 40549 Düsseldorf acc. to DIN EN 520<br>Declaration of performance: Rigips_Feuerschutzplatte_RF_12,5_LE_0613<br>Classification of the fire behavior according to EN 13501-1: Class A2, s1, d0 |

The properties listed can be used for the identification of the construction product and for the implementation of the factory production control of the manufacturer.

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

\* The composition of the materials is deposited at DIBt.

#### Performance of penetration seals, tested with the construction product "FlamoX"

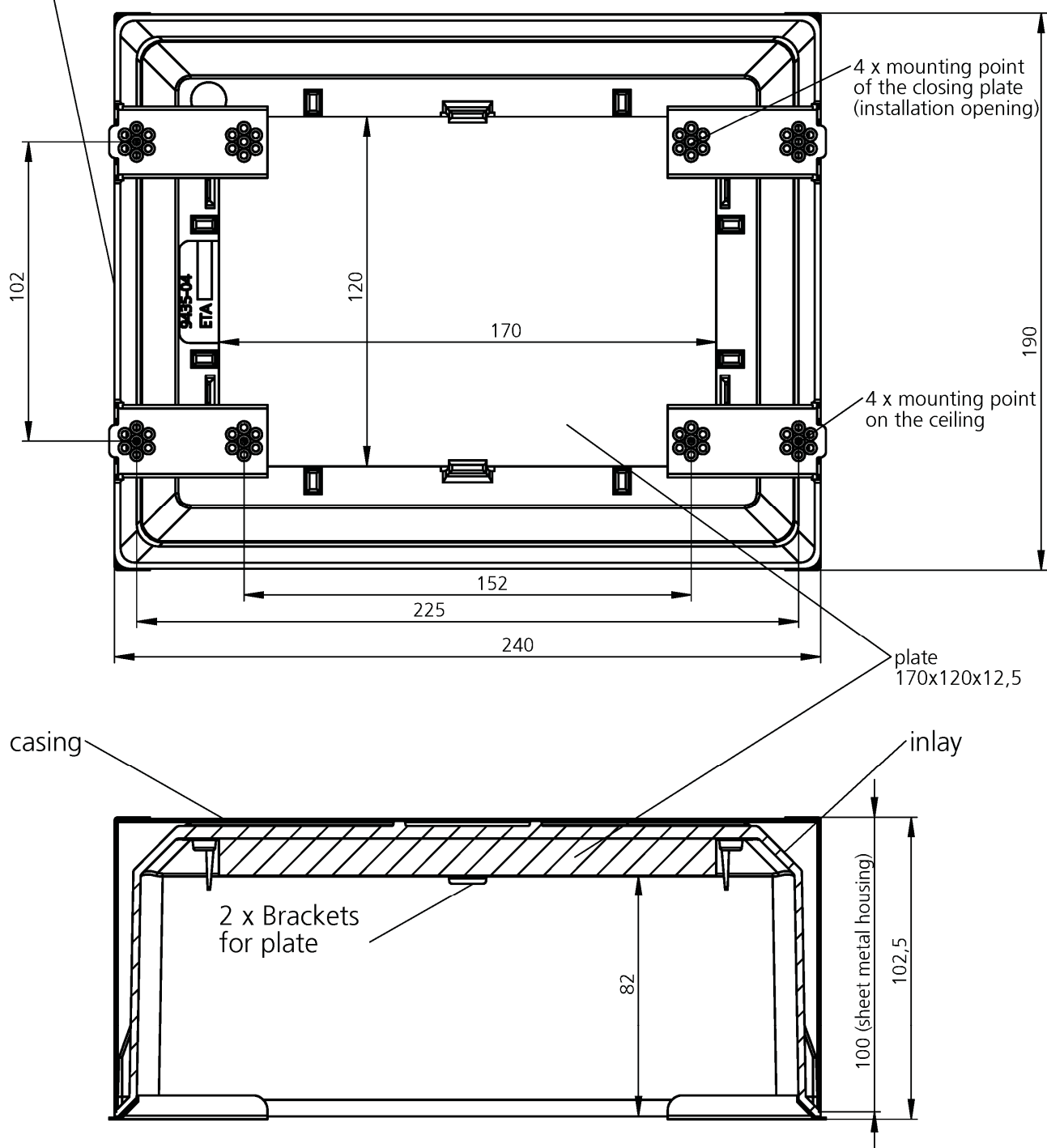
| Essential requirement | Test method | Construction of the sample                                                                                                                                                                                                                                                                               | Performance                                                    |
|-----------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Resistance to fire    | EN 1366-3   | Penetration seal used in conjunction with a suspended ceiling in accordance with P-3966/9669-MPA-BS (national technical test certificate; AbP); linings consisting of 2 x 12,5 mm gypsum plasterboards; flame application from the bottom side of the suspended ceiling (see Annex 4 with 6 resp. 7)     | Fire resistance (integrity and thermal insulation): 30 minutes |
| Resistance to fire    | EN 1366-3   | Penetration seal used in conjunction with a suspended ceiling in accordance with AbP P-3005/3024-MPA-BS (national technical test certificate; AbP); linings consisting of 2 x 12,5 mm gypsum plasterboards; flame application from the bottom side of the suspended ceiling (see Annex 5 with 6 resp. 7) | Fire resistance (integrity and thermal insulation): 30 minutes |

The illustrations on Annexes 2 to 7 are without guarantee for completeness.

The use of the construction product "FlamoX" shall be in accordance with national requirements for planning, design and execution and in accordance with the installation instruction of the manufacturer.  
The tested/ illustrated seals are only examples.

|                                                                       |         |
|-----------------------------------------------------------------------|---------|
| FlamoX                                                                | Annex 1 |
| Description of the construction products, properties and performances |         |

Openings for the entry of cables / electrical installation pipes on the short side of the housing 2 x  $\varnothing 19\text{mm}$  ; 2 x  $\varnothing 24\text{mm}$



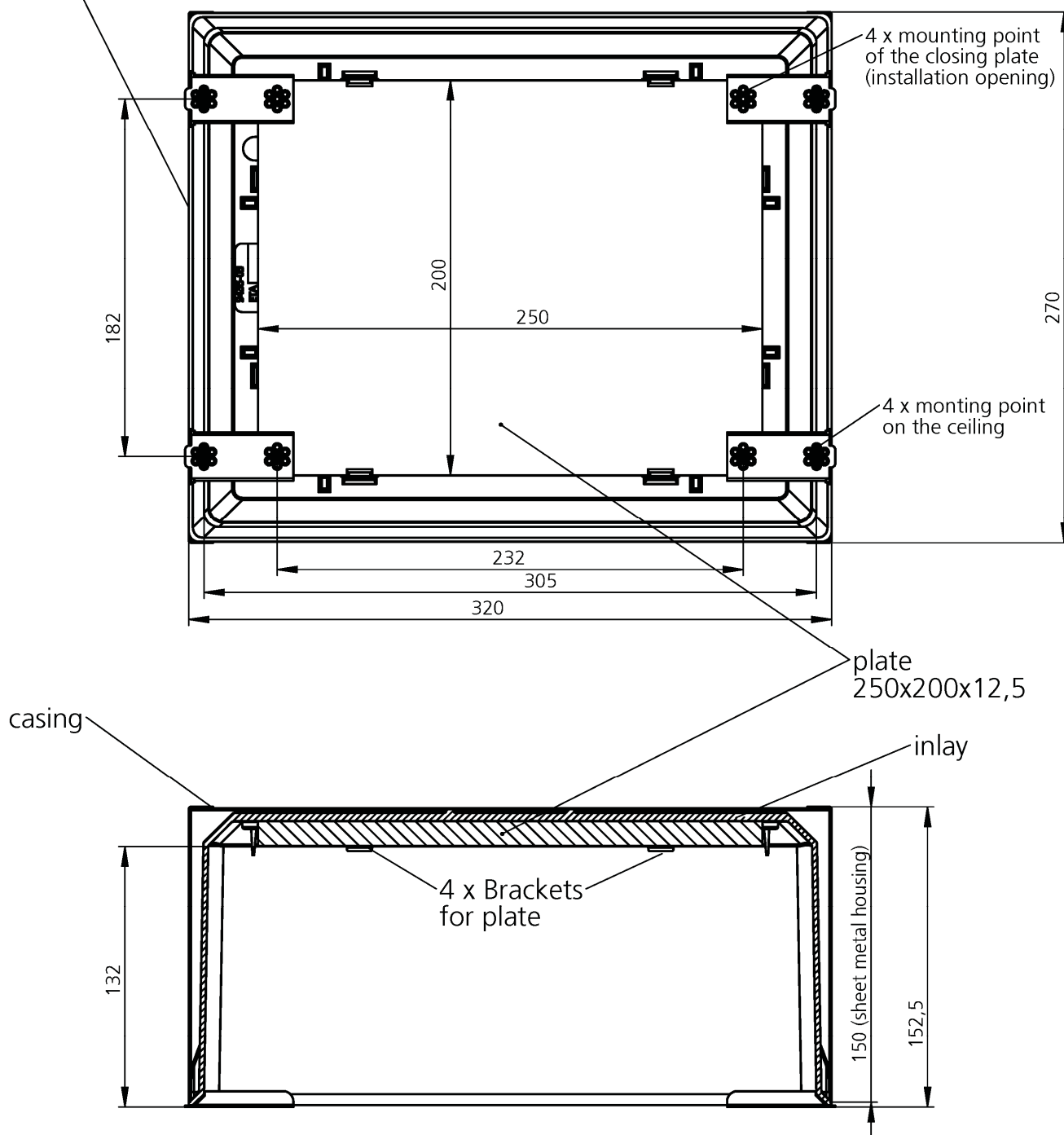
Dimensions in mm

FlamoX

Structure of the construction product "FlamoX"  
in the version "FlamoX Klein"

Annex 2

Openings for the entry of cables / electrical installation pipes on the short side of the housing 2 x  $\varnothing 19\text{mm}$  ; 2 x  $\varnothing 24\text{mm}$

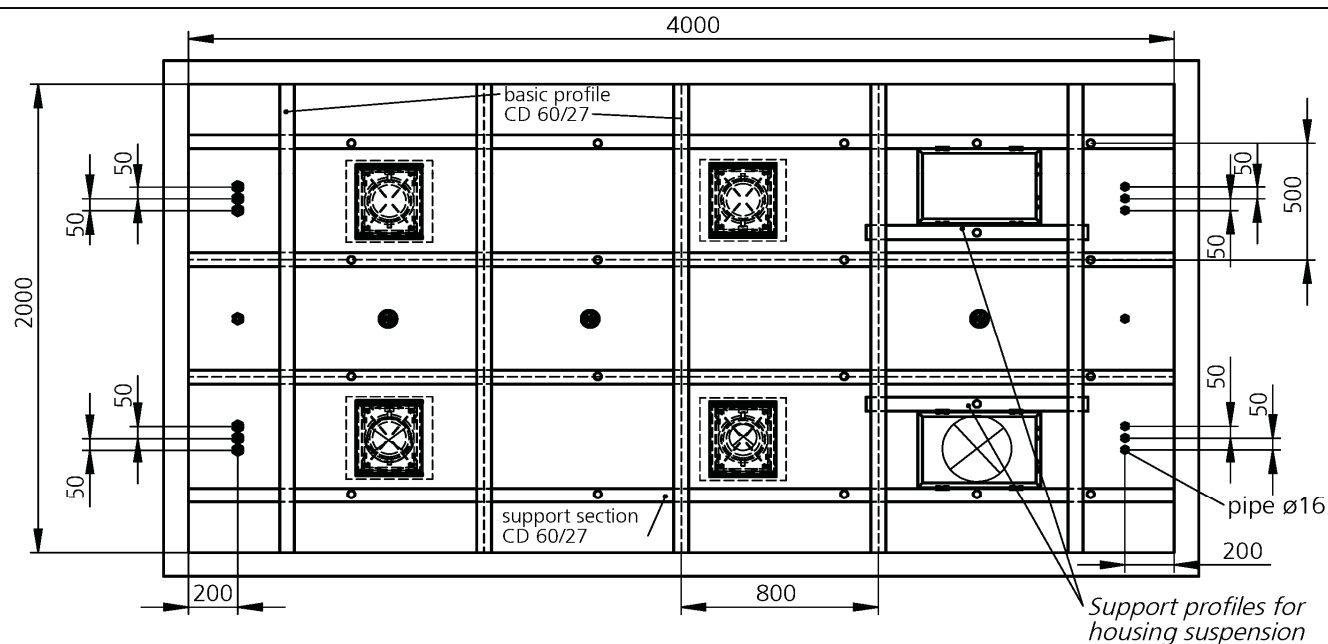


Dimensions in mm

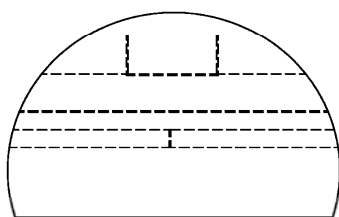
FlamoX

Structure of the construction product "FlamoX"  
in the version "FlamoX Groß"

Annex 3

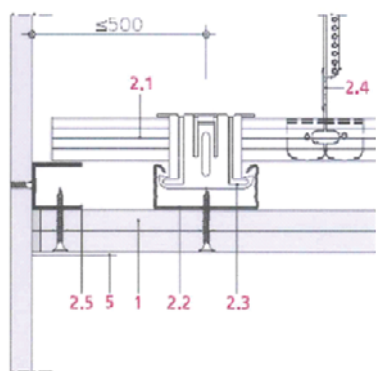


sideview



DETAIL B  
scale 1 : 5

mouting example company Rigips



- 1 Rigips-Platten
- 2.1 Rigips Deckenprofil CD 60/27 (Grundprofil)
- 2.2 Rigips Deckenprofil CD 60/27 (Tragprofil)
- 2.3 Profilverbinder
- 2.4 Abhänger
- 5 Rigips Anschlussprofil UD 28
- 5 Bewehrungsstreifen

Achsabstand *Grundprofile* $\leq 1000 \text{ mm}$ 

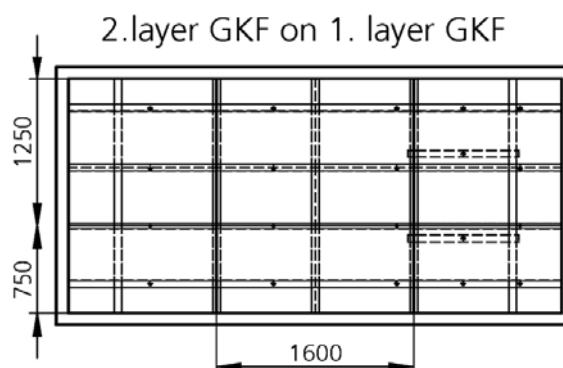
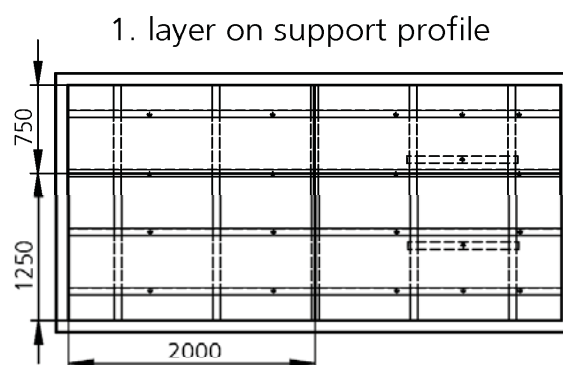
Achsabstand Tragprofi

 $\leq 500 \text{ mm}$ 

Abstände der Abhänger (x + y Richtung)

 $\leq 1000$  mm

Beplankung 2 x 12,5 mm Rigips Feuerschutzplatten Typ DF nach DIN EN 520

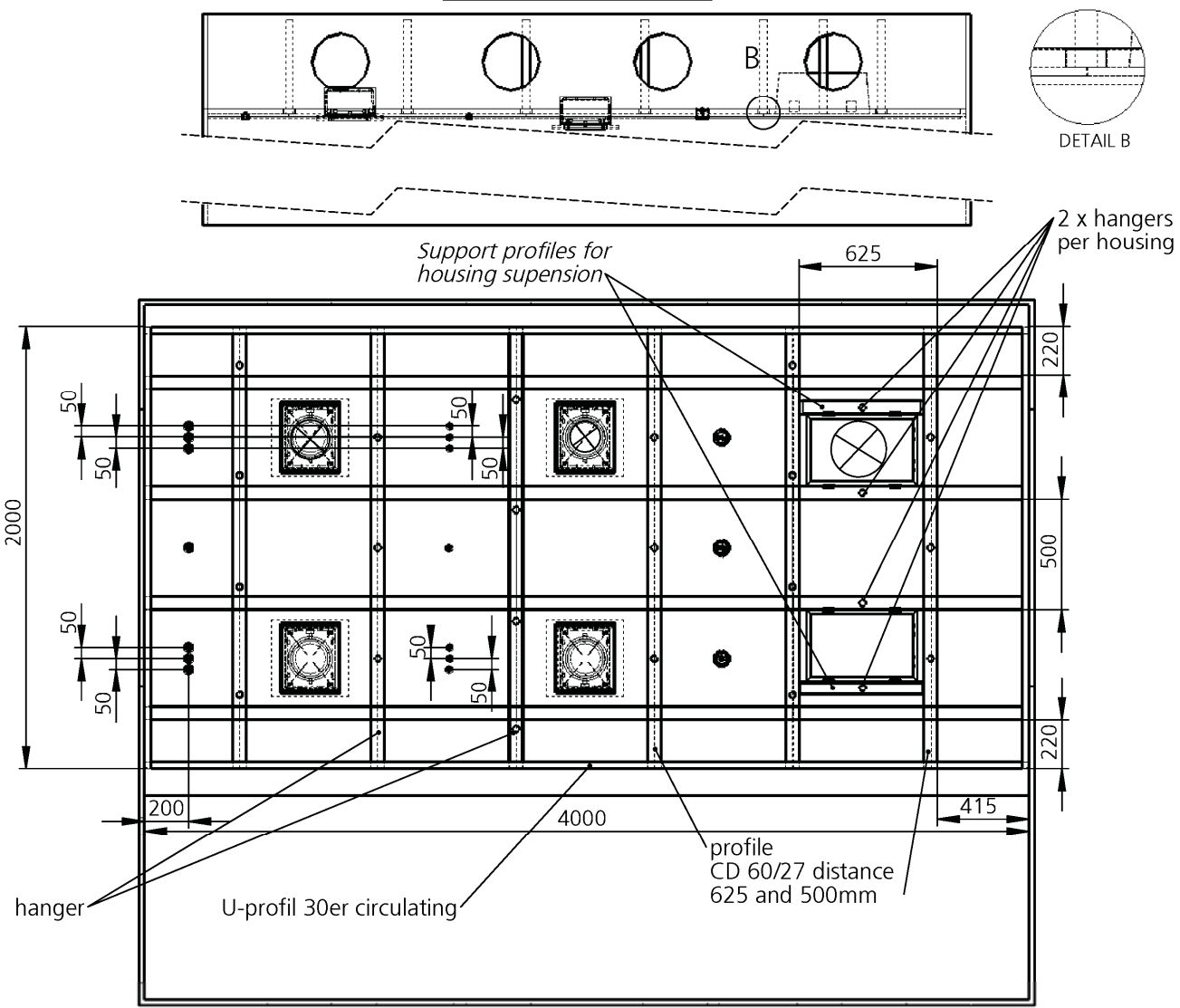
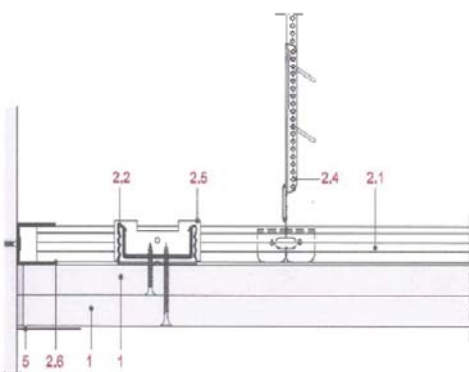


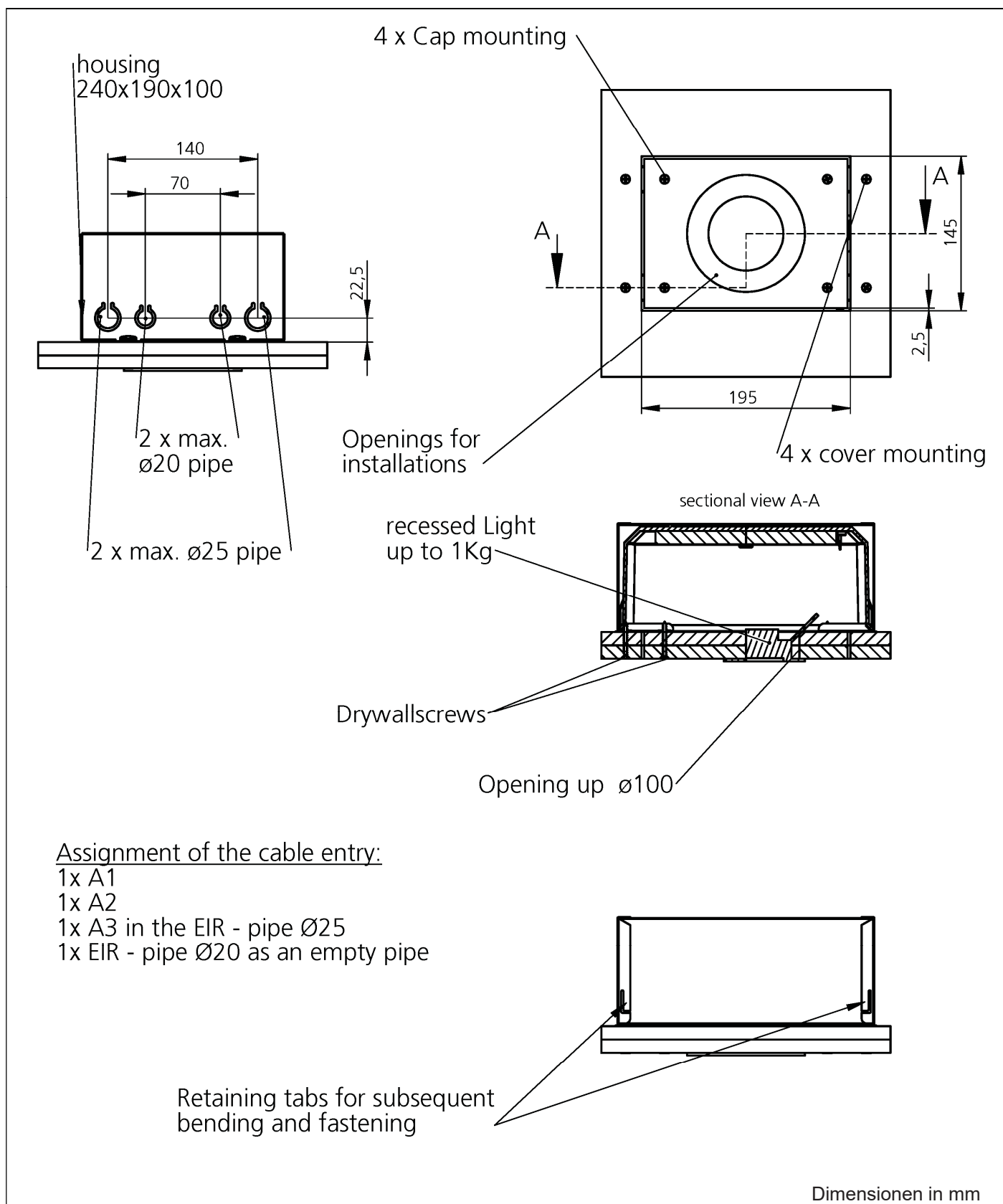
Dimensions in mm

FlamoX

Example for the verification of penetration seals under using the construction product "FlamoX" installed in suspended ceilings  
- in case of flame impingement from the bottom of the suspended ceiling -

Annex 4

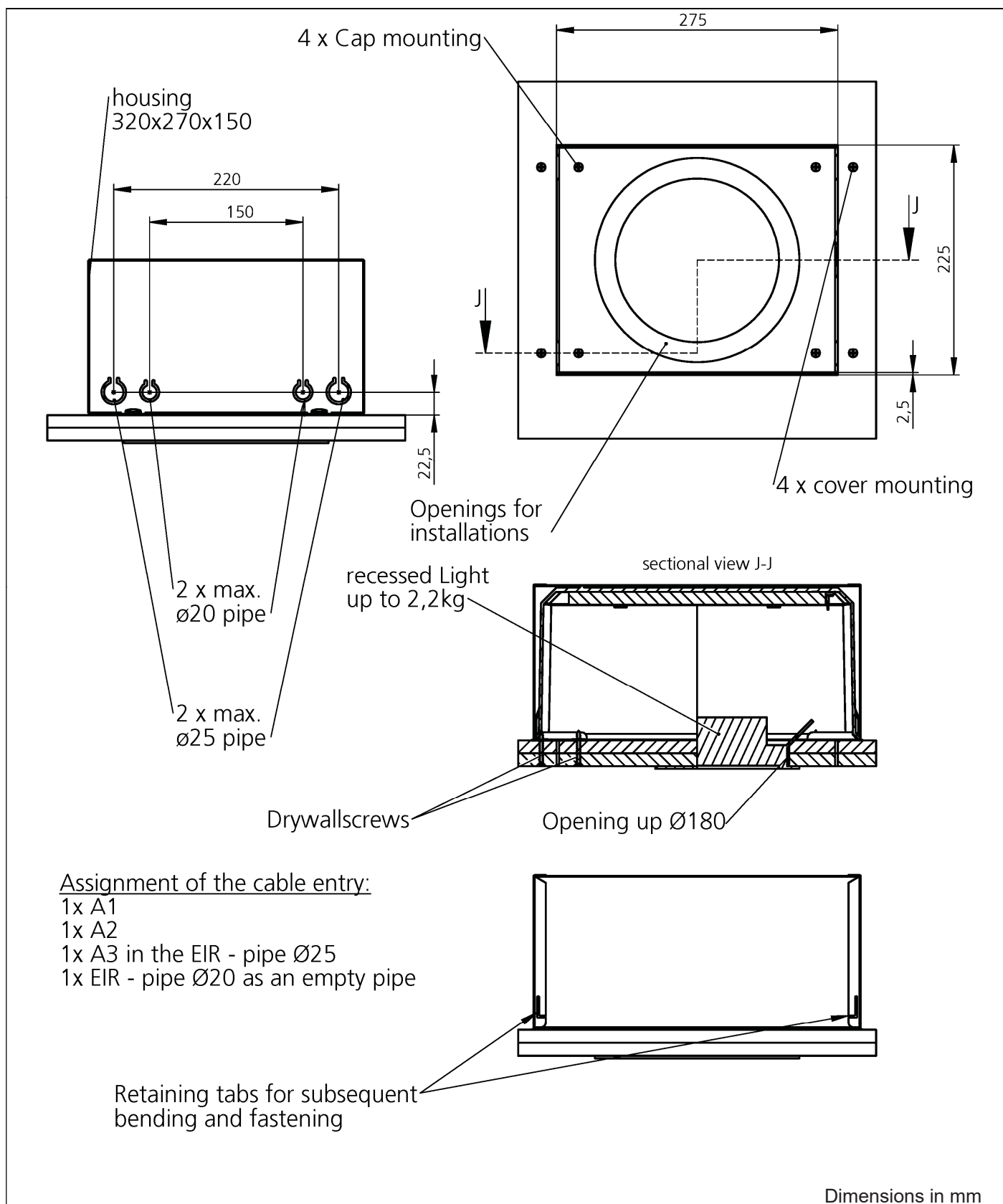
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2 layer GKF 2000x1250x12,5<br/>Profile "on the same level"</p>  <p>Support profiles for housing suspension</p> <p>2 x hangers per housing</p> <p>2000</p> <p>50</p> <p>50</p> <p>50</p> <p>50</p> <p>50</p> <p>50</p> <p>200</p> <p>4000</p> <p>625</p> <p>220</p> <p>500</p> <p>220</p> <p>415</p> <p>profile CD 60/27 distance 625 and 500mm</p> <p>U-profile 30er circulating</p> <p>hanger</p> <p>DETAIL B</p> <p>mounting example company Rigips</p>  <ol style="list-style-type: none"> <li>1 Rigips 2x12,5</li> <li>2.1 Rigips Deckenprofil CD 60/27 (Querprofil)</li> <li>2.2 Rigips Deckenprofil CD 60/27 (Längsprofil)</li> <li>2.4 Rigips Nonius Abhängesystem</li> <li>2.5 Rigips Sicherheitsquerverbinder</li> <li>2.6 Rigips Anschlussprofil UD 28</li> <li>5 Bewehrungsstreifen, eingespachtelt</li> </ol> <p>Abhängesystem</p>  <p>Rigips Nonius-System Unterteil CD 400 mit Rigips Sicherheitsquerverbinder</p> <p>Bei einer Brandbeanspruchung der Decke aus dem Zwischendeckenbereich müssen die Rigips Nonius Unterteile und Rigips Sicherheitsquerverbinder mit Rigips Deckenprofilen CD 60/27 mit je zwei Rigips Bau-schrauben verschraubt werden.</p> <p>Achsabstand Längsprofile <math>\leq 1250</math> mm</p> <p>Achsabstand Querprofile <math>\leq 500</math> mm</p> <p>Abstände der Abhänger (x + y Richtung) <math>\leq 650</math> mm</p> <p>Abstände der Abhänger zur Rohdecke <math>\leq 1500</math> mm</p> <p>Beplankung 2 x 12,5 mm Rigips Feuerschutzplatten Typ DF nach DIN EN 520</p> | <p>Dimensions in mm</p> <p>FlamoX</p> <p>Example for the verification of penetration seals under using the construction product "FlamoX" installed in suspended ceilings<br/>- in case of flame impingement from the top of the suspended ceiling -</p> <p>Annex 5</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



FlamoX

Example of the verification of the construction product "FlamoX"  
in the variant "FlamoX Klein"

Annex 6



FlamoX

Example of the verification of the construction product "FlamoX"  
in the variant "FlamoX Groß"

Annex 7