Authorised and notified according to Article 10 of the Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products

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European technical approval ETA-12/0566

(English language translation, the original version is in German language)

Handelsbezeichnung: *Trade name:*	**Hapuflam Brandschutzgewebe**
Zulassungsinhaber: *Holder of approval:*	**Dämmstoff-Fabrik Klein GmbH** **Neuweg 1-4** **67308 Bubenheim** **Germany**
Zulassungsgegenstand und Verwendungszweck: *Generic type and use of construction product:*	**Abschottungen** **Penetration seals**
Geltungsdauer vom: *Validity from:* bis: *to:*	**04.02.2013** **03.02.2018**
Herstellwerk: *Manufacturing plant:*	**Dämmstoff-Fabrik Klein GmbH** **Neuweg 1-4** **67308 Bubenheim** **Germany**
Diese Europäische technische Zulassung umfasst: *This European technical approval contains:*	**15 Seiten inklusive 4 Anhängen** *15 pages including 4 Annexes*

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I LEGAL BASES AND GENERAL CONDITIONS

1 This European technical approval is issued by Österreichisches 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 products[1] modified by Council Directive 93/68/EEC[2] and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council[3];
- Wiener Bauprodukte- und Akkreditierungsgesetz – WBAG. LGBl. Nr. 30/1996, zuletzt geändert durch das Gesetz LGBl. für Wien Nr. 36/2007;
- Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC[4];
- Guideline for European technical approval of Fire Stopping and Fire Sealing Products: Part 2: Penetration Seals.

2 The Österreichisches 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(s). 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 Österreichisches 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 Österreichisches 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 English. This version corresponds fully to the version circulated in EOTA. Translations into other languages have to be designated as such.

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1 Official Journal of the European Communities N° L 40, 11.2.1989, p. 12
2 Official Journal of the European Communities N° L 220, 30.8.1993, p. 1
3 Official Journal of the European Union N° L 284, 31.10.2003, p.1
4 Official Journal of the European Communities N° L 17, 20.1.1994, p. 34

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II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product(s) and intended use

The penetration seal „Hapuflam Brandschutzgewebe" is designed and installed in accordance with the ETA-holder's design and installation instructions, deposited at the Österreichisches Institut für Bautechnik. The approval holder is ultimately responsible for the penetration seal „Hapuflam Brandschutzgewebe".

1.1 Definition of the construction product

„Hapuflam Brandschutzgewebe" is a closure device installed around cables, cable trays and ladders to reinstate the fire resistance performance of wall constructions, where they have been provided with apertures for the penetration of services.

In case of fire (interior fire, e. g. cable fire) „Hapuflam Brandschutzgewebe" forms a fine pored intumescent foam to close gaps and joints. The fabric represents due to the high flexibility and ultimate tensile strength a durable fire protection at existing penetration services.

„Hapuflam Brandschutzgewebe" has to be installed on both sides of the wall according to the technical literature of the approval holder, which is agreed/deposited at the Österreichisches Institut für Bautechnik. Type of penetration seal system: Wrap (see ETAG 026-2, clause 1.1, table 1-1).

„Hapuflam Brandschutzgewebe" is generally used in one layer, delivered in thicknesses of 1,6 to 2,2 mm in widhts of 500 mm or 1000 mm and a pre-cut length of 1500 mm. The mass per unit area is about 1,55 kg/m² up to 1,85 kg/m².

For the purpose of smoke and draft stop, air or water tightness and airborne sound insulation, the gap has to be sealed off with any cementious mortar or mineral wool as backfilling material, considering the detailed prescriptions given in technical literature of the approval holder.

1.2 Intended Use and Use Category

1.2.1 Intended Use

The intended use of "Hapuflam Brandschutzgewebe" is to reinstate the fire resistance performance of rigid wall constructions where they are penetrated by cables, cable trays or ladders.

The specific elements of construction that "Hapuflam Brandschutzgewebe" may be used to provide a penetration seal in, are as follows:

Rigid walls: The wall must have a minimum thickness of 100 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 650 kg/m^3.

This ETA does not cover use of this product as a penetration seal in sandwich panel constructions.

The provisions made in this European technical approval are based on an assumed working life of "Hapuflam Brandschutzgewebe" of 10 years, provided that the conditions laid down in sections 4.2/5.1/5.2 for the packaging/transport/storage/installation/use/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.

1.2.2 Use Category

The use category of "Hapuflam Brandschutzgewebe" is Type $Y_{1\ (-20/+70\ °C)}$.

Type Y_1: Products intended for use at temperatures below 0 °C with exposure to UV, but no exposure to rain.

Since the requirements for type Y_1 are met, also the requirements for type Y_2, Z_1 and Z_2 are fulfilled.

Type Y_2: Products intended for use at temperatures below 0 °C, but with no exposure to rain nor UV.

Type Z_1: Products intended for use at internal conditions with high humidity, excluding temperatures below 0°C.[5]

Type Z_2: Products intended for uses at internal conditions with humidity classes other than Z_1, excluding temperatures below 0°C.

2 Characteristics of the product and methods of verification

The identification tests and the assessment of the fitness for use according to the Essential Requirements were carried out in compliance with the "ETA Guidance no. 026-Part 2" concerning Penetration Seals – edition January 2008 (called ETAG 026-2 in this ETA) and with the "EOTA technical Report no. 024" concerning Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products – edition November 2006 (called EOTA TR 024 in this ETA).

ETAG clause No.	ETA clause No.	Characteristic	Assessment of characteristic
		Mechanical resistance and stability	Not relevant
		Safety in case of fire	
2.4.1	2.1	Reaction to fire	Class B-s2,d0 according to EN 13501-1:2007
2.4.2	2.2	Resistance to fire	See clause 2.2
		Hygiene, Health and the Environment	
2.4.3	2.3	Air permeability	No performance determined
2.4.4	2.4	Water permeability	No performance determined
2.4.5	2.5	Dangerous substances	No performance determined
		Safety in use	
2.4.6	2.6	Mechanical resistance and stability	No performance determined
2.4.7	2.7	Resistance to impact/movement	No performance determined
2.4.8	2.8	Adhesion	No performance determined
		Protection against noise	
2.4.9	2.9	Airborne sound insulation	No performance determined
		Energy, Economy and Heat Retention	

[5] These uses apply for internal humidity class 5 in accordance with EN ISO 13788

2.4.10	2.10	Thermal properties	No performance determined
2.4.11	2.11	Water vapour permeability	No performance determined
		General aspects relating to fitness for use	
2.4.12	2.12	Durability and serviceability	$Y_{1, (-20/+70)°C}$

2.1 Reaction to fire

"Hapuflam Brandschutzgewebe" is classified 'B-s2,d0' in accordance with EN 13501-1.

2.2 Resistance to fire

„Hapuflam Brandschutzgewebe" has been tested in accordance with EN 1366-3:2009, installed within apertures in rigid walls (aerated concrete blocks).

The seals may only be penetrated by the services listed in Annex C. Other parts or support constructions must not penetrate the seal.

All tested configurations are classified "EI 90/E 90" according to EN 13501-2:2007+A1:2009. For further Details see Annex C.

The supporting construction must be classified in accordance with EN 13501-2 for the required fire resistance period.

The service support construction must be fixed to the building element containing the penetration seal or a suitable adjacent building element, on both sides of the penetration in such a manner that in the case of fire, no additional load is imposed on the seal. Furthermore it is assumed that this support is maintained on the unexposed side, for the required period of fire resistance.

2.3 Air permeability

No performance determined.

2.4 Water permeability

No performance determined.

2.5 Dangerous substances

According to the manufacturer's declaration, the product specification has been compared with the list of dangerous substances of the European Commission to verify that that it does not contain such substances above the acceptable limits.

A written declaration in this respect was submitted by the ETA-holder.

In addition to the specific clauses relating to dangerous substances contained in this ETA, 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 Product Directive, these requirements need also to be complied with, when and where they apply.

2.6 Mechanical resistance and stability

The mechanical resistance of„Hapuflam Brandschutzgewebe" was tested according to ISO 10319:2008-10.

	Tensile strength (kN/m)		Tensile strength expansion (%)	
	Warp	Weft	Warp	Weft
Hapuflam Brandschutzgewebe	**51,62**	**29,72**	**4,39**	**3,99**

2.7 Resistance to impact/movement

No performance determined.

2.8 Adhesion

No performance determined.

2.9 Airborne sound insulation

No performance determined.

2.10 Thermal properties

No performance determined.

2.11 Water vapour permeability

No performance determined.

2.12 Durability

"Hapuflam Brandschutzgewebe" has been tested in accordance with ETAG 026-2 for the Y_1 use category specified in ETAG 026-2 and TR024. The results of the tests have demonstrated suitability for penetration seals intended for use at temperatures between -20°C and +70°C, with exposure to UV but no exposure to rain ($Y_{1, (-20/+70)°C}$).

3 Evaluation of Conformity and CE marking

3.1 Attestation of Conformity system

According to the decision 1999/454/EC of the European Commission[6] 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 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;

[6] Official Journal of the European Communities N° L 178, 14.7.1999, p. 52

(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 insure that the product is in conformity with this European technical approval.

The manufacturer shall draw up and keep up-to-date documents defining the factory production control that applies. The documentation to be carried out by the manufacturer and the applicable procedures shall be appropriate to the product and manufacturing process. The factory production control shall ensure the conformity of the product to an appropriate level.

This involves:

a) the preparation of documented procedures and instructions relating to factory production control operations.

b) the effective implementation of these procedures and instructions.

c) the recording of these procedures and their results.

d) the use of these results to correct any deviations, repair the effects of such deviations, treat any resulting instances of non-conformity and, if necessary, revise the factory production control to rectify the cause of non-conformity.

e) a procedure to ensure that both the approval body and the notified (Certification) bodies are advised before any significant change to the product, its components or manufacturing process, is made.

f) a procedure to ensure that personnel involved in the production processes and the quality control procedures are qualified and adequately trained to carry out their required tasks.

g) that all testing and measuring equipment is maintained and up to date calibration records are documented.

h) maintenance of records to ensure every batch produced is clearly labelled with the batch number, which allows traceability to its production to be identified.

The manufacturer may only use components stated in the technical documentation of this European technical approval.

For the components which the ETA-holder does not manufacture by himself, he shall make sure that factory production control carried out by the other manufacturers gives the guaranty of the components compliance with the European technical approval.

The factory production control of the ETA holder and the provisions taken by the ETA-holder for components not produced by himself shall be in accordance with the control plan[7] relating to this European technical approval 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

[7] The control plan is a confidential part of the European Technical Approval and only handed over to the Notified Body or Bodies involved in the procedure of conformity.

control system operated by the manufacturer and deposited at the Österreichisches Institut für Bautechnik.

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

The manufacturer shall provide a technical data sheet and an installation instruction with the following minimum information:

technical data sheet:

- Field of application
- Construction of the penetration seal including the necessary components and additional products with clear indication whether they are generic or specific.

Installation instruction:

- Steps to be followed
- Procedure in case of retrofitting.

3.2.1.2 Other tasks of manufacturer

The manufacturer shall, on the basis of a contract, involve a body (bodies) which is (are) approved for the tasks referred to in section 3.1 in the field of penetration seals in order to undertake the actions laid down in section 3.3. 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 approved body or bodies involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval.

3.2.2 Tasks of Notified Bodies

The Notified Body (Bodies) shall perform the

- initial type-testing of the product (for system1),
  The results of the tests performed as part of the assessment for the European technical approval may be used unless there are changes in the production line or plant. In such cases, the necessary initial type testing has to be agreed between the Österreichisches Institut für Bautechnik and the Notified Bodies involved.
- initial inspection of factory and of factory production control,
  The Notified Body (Bodies) shall ascertain that, in accordance with the control plan, the factory (in particular the employees and the equipment) and the factory production control are suitable to ensure continuous and orderly manufacturing of the components according to the specifications mentioned in clause 2 of this ETA.
- continuous surveillance, assessment and approval of factory production control,
  The Notified Body (Bodies) shall visit the factory at least once a year for surveillance of this manufacturer having a FPC system complying with a quality management system covering the manufacturing of the approval product components. It has to be verified that the system of factory production control and the specified automated manufacturing process are maintained taking into account the control plan.

These tasks shall be performed in accordance with the provisions laid down in the control plan of this European technical approval.

The Notified Body (Bodies) shall retain the essential points of its (their) actions referred to above and state the results obtained and conclusions drawn in a written report.

The Notified 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 the Österreichisches Institut für Bautechnik without delay.

3.3 CE marking

The CE marking shall be affixed on the product itself, on a label attached to it, on its packaging or on the commercial documents accompanying the components of the product. The letters „CE" shall be followed by the identification number of the Notified Body involved and be accompanied by the following additional information:

- the name or identifying mark and address of the ETA holder,
- 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 ETAG (ETAG N° 026 part 2)
- the designation of the product (trade name)
- the use category in accordance with the ETA section 1 and 2
- "see ETA-12/0566 for other relevant characteristics (e.g. resistance to fire)"

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

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

4.2 Installation

The ETA is issued under the assumption that the installation of the approval product shall be in accordance with the manufacturer's technical literature.

5 Indications to the manufacturers

5.1 Packaging, transport and storage

In the accompanying document and/or on the packaging the manufacturer shall give information as to transport and storage.

At least the following shall be indicated: storing temperature, maximum duration of storage and required data related to minimum temperature for transport and storage.

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5.2 Use, maintenance and repair

The product shall be installed and used as described in this ETA.

The assessment of the fitness for use is based on the assumption that necessary maintenance and repair if required is carried out in accordance with the manufacturer's instructions during the assumed intended working life.

On behalf of Österreichisches Institut für Bautechnik

Rainer Mikulits
Managing Director

Member of EOTA

ANNEX A

REFERENCE DOCUMENTS and LIST OF ABBREVIATIONS

A.1 References to standards mentioned in the ETA:

EN 1366-3	Fire resistance tests for service installations - Part 3: Penetration seals
EN 13501-1	Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests
EN 13501-2	Fire classification of construction products and building elements – Part 2: Classification using test data from fire resistance tests

A.2 Other reference documents:

EOTA TR 024	Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products

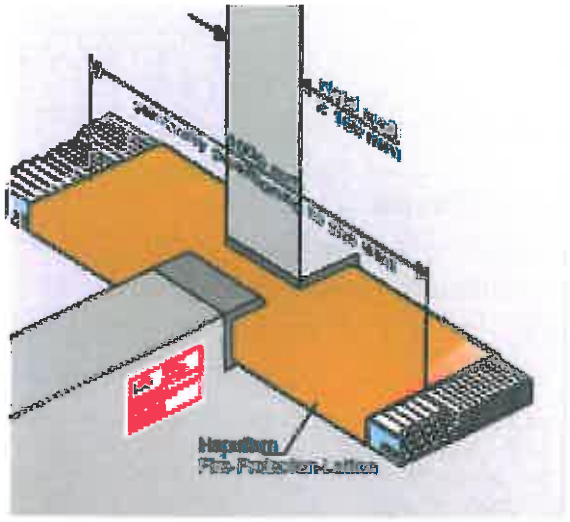
Material Safety Data Sheet according to 1907/2006/EC for "Hapuflam Brandschutzgewebe".
Technical Data Sheet of "Hapuflam Brandschutzgewebe".

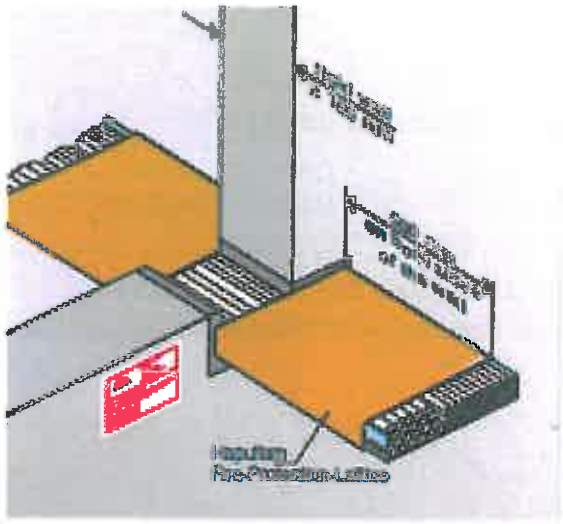
ANNEX B

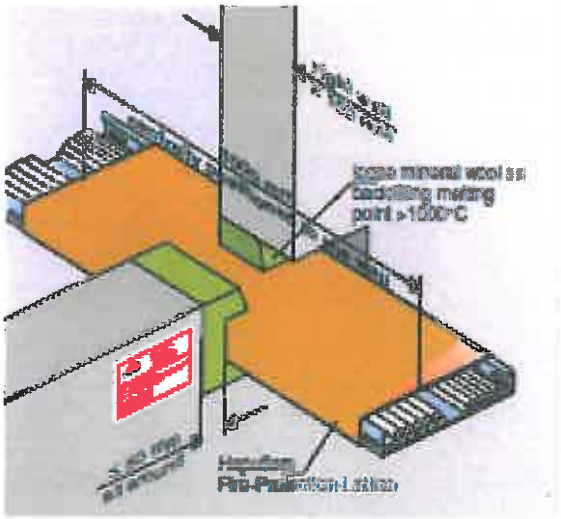
Details of penetration seals

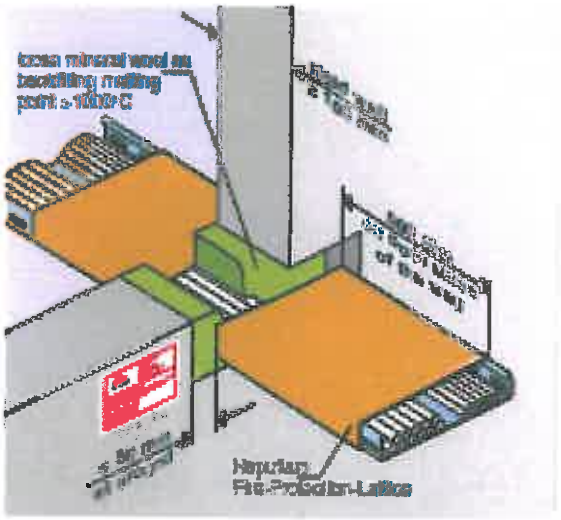
Annex B.1 supported systems

Type A to C
(for further construction details see technical literature of the approval holder)









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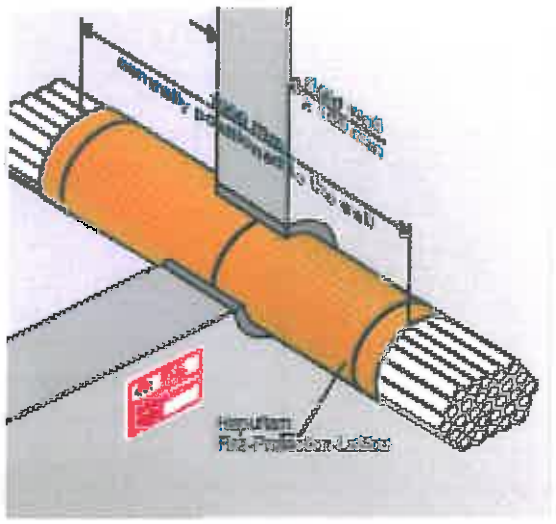
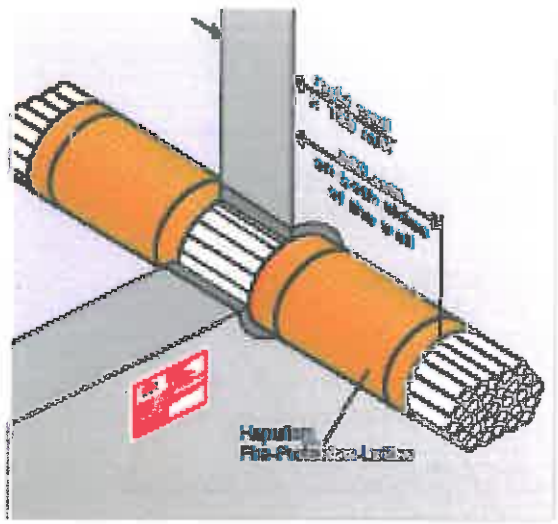
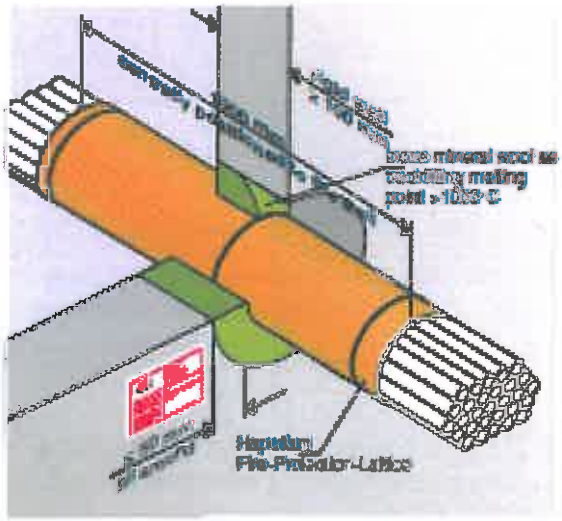
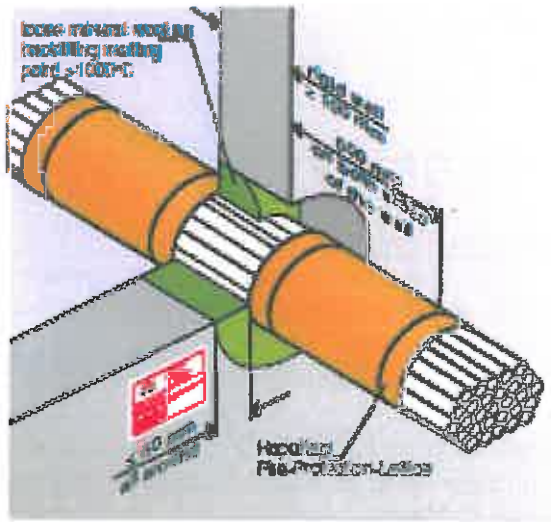
Annex B.2 cable bundles

(for further construction details see technical literature of the approval holder)









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ANNEX C

RESISTANCE TO FIRE CLASSIFICATION OF PENETRATION SEALS MADE FROM „HAPUFLAM BRANDSCHUTZGEWEBE"

Rigid walls according to 1.2.1

Penetration seal:
„Hapuflam Brandschutzgewebe" on both sides. The sealant may be backfilled with mineral wool (melting point ≥ 1000 °C). The minimum depth is 100 mm.

For further details see Annex B.

The seals may only be penetrated by cables/cable bundles (with and without support constructions). The support constructions have to comply with the dimensions listed in this table. Other parts and/or support constructions must not penetrate the seal.

Size of tested support constructions		
	width (mm)	**height (mm)**
Type A	**200**	**110**
Type B	**300**	**60**
Type C	**500**	**60**

Penetrating elements:

All types of sheathed cables (except waveguides) currently and commonly used in building practice in Europe (e.g. electrical / signal / telecommunication / data / optical fibre cables) according to technical literature of the manufacturer with a diameter ≤ 80 mm.

Tied bundles up to 100 mm overall diameter containing sheathed cables (except waveguides) currently and commonly used in building practice in Europe (e.g. electrical / signal / telecommunication / data / optical fibre cables) according to technical literature of the manufacturer with a diameter ≤ 21 mm.

RESISTANCE TO FIRE CLASSIFICATION:

All described penetration seals are classified according to EN 13501-2:2007+A1:2009. The classification for all approved configurations is "EI 90/E 90".

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ANNEX D
Colour spectrum of
„HAPUFLAM BRANDSCHUTZGEWEBE"