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European Technical Assessment

ETA-12/0566
of 04.02.2018

General part

Technical Assessment Body issuing the European Technical Assessment

Österreichisches Institut für Bautechnik (OIB)
Austrian Institute of Construction Engineering

Trade name of the construction product

Hapuflam Brandschutzgewebe

Product family to which the construction product belongs

Fire Stopping and Fire Sealing Products:
Penetration Seals

Manufacturer

Dämmstoff-Fabrik Klein GmbH
Neuweg 1-4
67308 Bubenheim
GERMANY

Manufacturing plant

Dämmstoff-Fabrik Klein GmbH
Neuweg 1-4
67308 Bubenheim
GERMANY

This European Technical Assessment contains

12 pages including Annexes A to D 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

European Assessment Document
EAD 350454-00-1104 „Fire stopping and fire sealing products – Penetration seals”

This European Technical Assessment replaces

European technical approval ETA-12/0566 with validity from 04.02.2013 to 03.02.2018

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Specific parts

1 Technical description of the 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 holder of the European Technical Assessment, which is agreed/deposited at the Österreichisches Institut für Bautechnik.

Type of penetration seal system: Wrap (see EAD 350454-00-1104, clause 1.1).

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

Tensile strength and tensile strength expansion 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

“Hapuflam Brandschutzgewebe” is available in various colours (see Annex D of the ETA).

2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

2.1 Intended use

“Hapuflam Brandschutzgewebe” is intended to be used as cable penetration seal to temporarily or permanently reinstate the fire resistance performance of rigid wall constructions where they have been provided with apertures which are penetrated by various cables and cable support constructions (perforated or non-perforated steel cable trays and steel ladders).

“Hapuflam Brandschutzgewebe” can be only installed in the following type of separating element:

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/m³.

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

2.2 Use condition

“Hapuflam Brandschutzgewebe” is intended for use at temperatures below 0 °C and with exposure to UV, but no exposure to rain, and can therefore – according to EAD 350454-00-1104 clause 2.2.9.3.1 – be categorized as Type Y₁. Since the requirements for Type Y₁ are met, also the requirements for Type Y₂, Z₁ and Z₂ are fulfilled.

Although a penetration seal is intended for indoor applications only, the construction process may result in it being subjected to more exposed conditions for a period before the building envelope is closed. For this case provisions shall be made to protect temporarily exposed penetration seals according to the ETA-holder’s installation instructions.

2.3 Working life

The provisions made in this European Technical Assessment are based on an assumed working life of “Hapuflam Brandschutzgewebe” of 10 years, provided the conditions laid down in the technical literature of the manufacturer relating to packaging, transport, storage, installation, use and repair are met.

The indications given on the intended working life cannot be interpreted as a guarantee given by the producer or the Technical Assessment Body, but are to be regarded only as a means for selecting the appropriate product in relation to the expected economically reasonable working life of the works.

The real working life might be, in normal use conditions, considerably longer without major degradation affecting the Basic requirements for construction works.

2.4 General assumptions

2.4.1 It's assumed that

- > damages to the penetration seal are repaired accordingly,
- > the installation of the penetration seal does not effect the stability of the adjacent building element – even in case of fire,
- > the lintel or floor above the penetration seal is designed structurally and in terms of fire protection such that no additional mechanical load (other than its own weight) is imposed on the penetration seal,
- > the installations are fixed to the adjacent building element in accordance with the relevant regulations in such a way that, in case of fire, no additional mechanical load is imposed to the penetration seal,
- > the support of the installations is maintained for the required period of fire resistance.

2.5 Manufacturing

The European Technical Assessment 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 European Technical Assessment and consequently the validity of the CE marking on the basis of the European Technical Assessment and if so whether further assessment or alterations to the European Technical Assessment, shall be necessary.

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

Basic requirements for construction works	Essential characteristics	Method of verification	Performance
BWR 2	Reaction to fire	EN 13501-1:2007+A1:2009	Clause 3.1.1 of the ETA
	Resistance to fire	EN 13501-2:2007+A1:2009	Clause 3.1.2 of the ETA and Annex C of the ETA
BWR 3	Air permeability	No performance assessed	
	Water permeability	No performance assessed	
	Content, emission and/or release of dangerous substances	No performance assessed	
BWR 4	Mechanical resistance and stability	No performance assessed	
	Adhesion	No performance assessed	
	Durability	EAD 350454-00-1104 clause 2.2.9	Clause 3.3.4 of the ETA
BWR 5	Airborne sound insulation	No performance assessed	
BWR 6	Thermal properties	No performance assessed	
	Water vapour permeability	No performance assessed	

3.1 Safety in case of fire (BWR 2)

3.1.1 Reaction to fire

„Hapuflam Brandschutzgewebe“ was assessed according to EAD 350454-00-1104 clause 2.2.1 and classified B-s2,d0 according to EN 13501-1:2007+A1:2009.

3.1.2 Resistance to fire

„Hapuflam Brandschutzgewebe“ was tested according to EAD 350454-00-1104 clause 2.2.2 and EN 1366-3:2009 in conjunction with EN 1363-1:1999.

The penetration seals may only be penetrated by the services listed in Annex C of the ETA. 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 of the ETA.

3.2 Hygiene, health and the environment (BWR 3)

3.2.1 Air permeability

No performance assessed.

3.2.2 Water permeability

No performance assessed.

3.2.3 Content, emission and/or release of dangerous substances

No performance assessed.

3.3 Safety and accessibility in use (BWR 4)

3.3.1 Mechanical resistance and stability

No performance assessed.

3.3.2 Resistance to impact / movement

No performance assessed.

3.3.3 Adhesion

No performance assessed.

3.3.4 Durability

“Hapuflam Brandschutzgewebe” is intended for use at temperatures below 0 °C and with exposure to UV, but no exposure to rain, and can – according to EAD 350454-00-1104 clause 2.2.9.3.1 – be categorized as Type Y₁. Since the requirements for Type Y₁ are met, also the requirements for Type Y₂, Z₁ and Z₂ are fulfilled.

3.4 Protection against noise (BWR 5)

3.4.1 Airborne sound insulation

No performance assessed.

3.5 Energy economy and heat retention (BWR 6)

3.5.1 Thermal properties

No performance assessed.

3.5.2 Water vapour permeability

No performance assessed.

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

4.1 AVCP system

According to the Decision 1999/454/EC¹, amended by Decision 2001/596/EC² of the European Commission the system of assessment and verification of constancy of performance (see Annex V of Regulation (EU) No 305/2011) is given in the following table.

Product(s)	Intended use(s)	Level(s) or class(es) (resistance to fire)	System of assessment and verification of constancy of performance
Fire Stopping and Fire Sealing Products	for fire compartmentation and/or fire protection or fire performance	any	1

In addition, according to the Decision 1999/454/EC, amended by Decision 2001/596/EC of the European Commission the system(s) of assessment and verification of constancy of performance, with regard to reaction to fire, is given in the following table.

¹ Official Journal of the European Communities no. L 178, 14.7.1999, p. 52

² Official Journal of the European Communities no. L 209, 2.8.2001, p. 33

Product(s)	Intended use(s)	Level(s) or class(es) (reaction to fire)	System of assessment and verification of constancy of performance
Fire Stopping and Fire Sealing Products	for uses subject to regulations on reaction to fire	A1*, A2*, B*, C*	1
		A1**, A2**, B**, C**, D, E	3
		(A1 to E)***, F	4
<p>* Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material)</p> <p>** Products/materials not covered by footnote (*)</p> <p>*** Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of class A1 according to Commission Decision 96/603/EC, as amended)</p>			

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 the Technical Assessment Body Österreichisches Institut für Bautechnik.

The notified product certification body shall visit the factory at least twice a year for surveillance of the manufacturer.

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by Österreichisches Institut für Bautechnik

Rainer Mikulits
Managing Director

ANNEX A

Reference documents and list of abbreviations

1.1 Reference to standards mentioned in this ETA:

EAD 350454-00-1104	European Assessment Document for „Fire stopping and fire sealing products – Penetration seals”
EN 13501-1:2007+A1:2009	Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests
EN 13501-2:2007+A1:2009	Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance tests, excluding ventilation
EN 1363-1:1999	Fire resistance tests - Part 1: General requirements
EN 1366-3:2009	Fire resistance tests for service installations - Part 3: Penetration seals

1.2 Other reference documents:

EOTA TR 024 (2009)	Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products
Technical documentation	Technical Data Sheet and Technical instruction sheet of “Hapuflam Brandschutzgewebe”

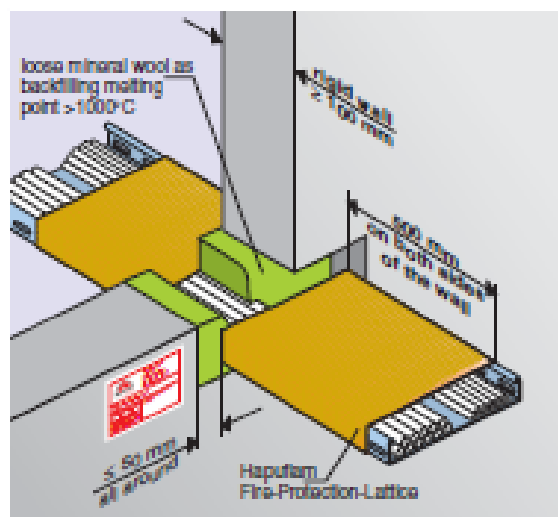
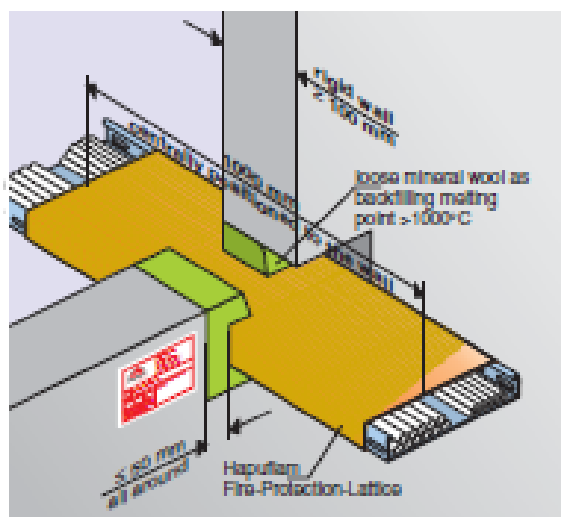
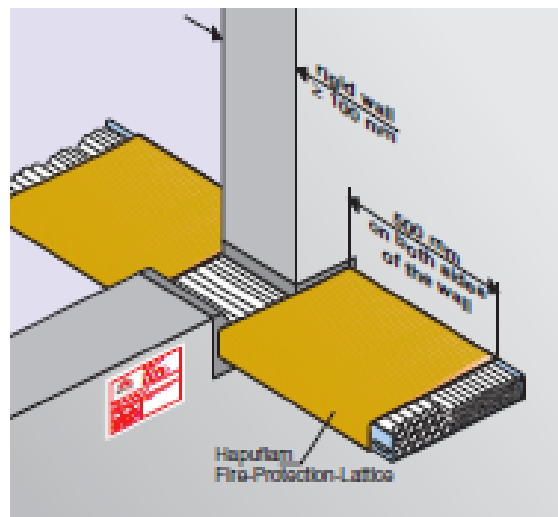
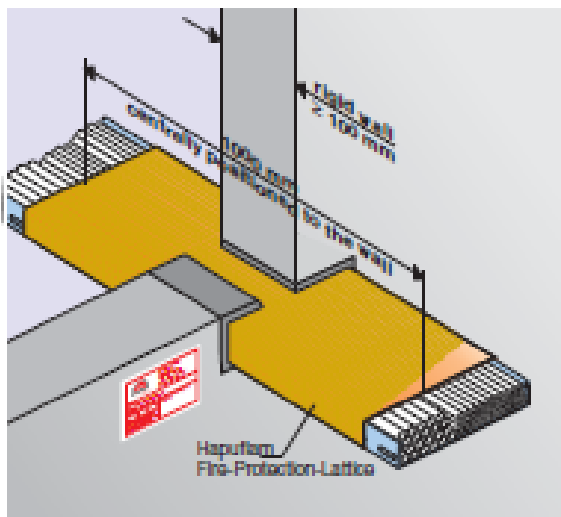
ANNEX B

Details of penetration seals

Annex B.1 supported systems

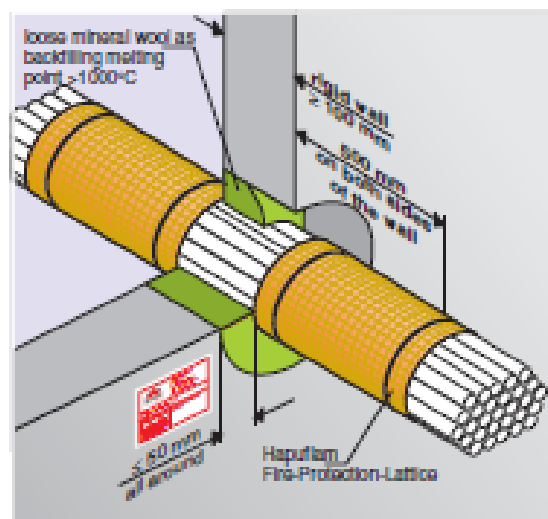
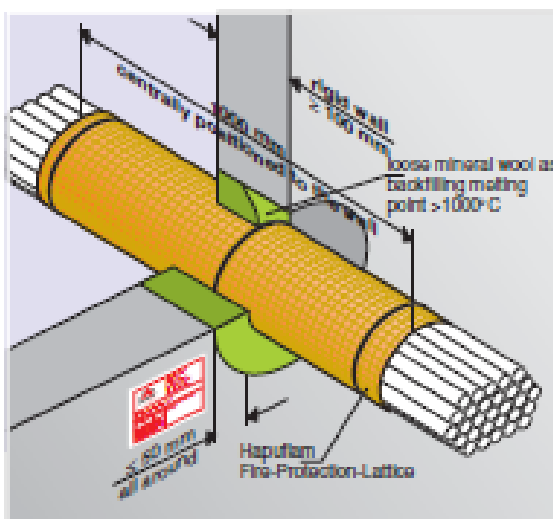
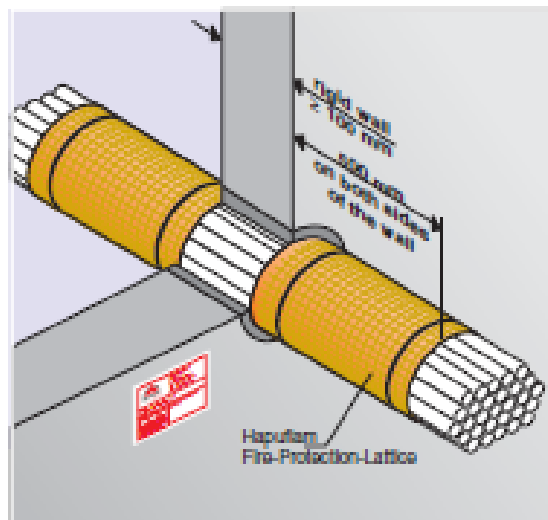
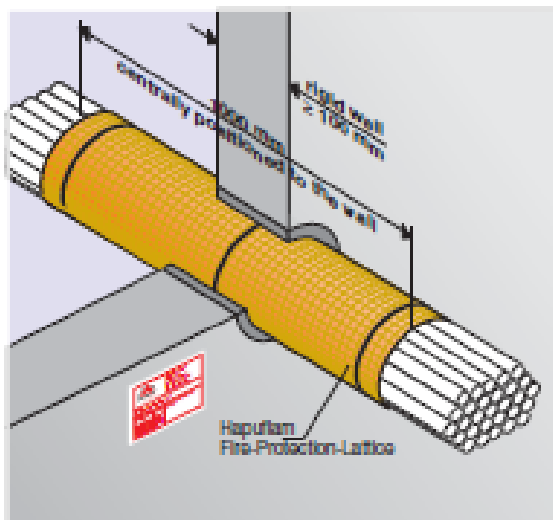
Type A to C

(for further construction details see technical literature of the holder of the European Technical Assessment)



Annex B.2 cable bundles

(for further construction details see technical literature of the holder of the European Technical Assessment)



ANNEX C

RESISTANCE TO FIRE CLASSIFICATION OF PENETRATION SEALS “HAPUFLAM BRANDSCHUTZGEWEBE”

Rigid walls according to clause 2.1 of the ETA

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 of the ETA.

The penetration 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 cables³ (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 bundles⁴ 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.

Classification resistance to fire:

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

³ Single or multicore cable with individual insulation of the cores and an additional protective covering of the assembly

⁴ Several cables running in the same direction, densely packed and bound tightly together by mechanical means

ANNEX D

Colour spectrum of “HAPUFLAM BRANDSCHUTZGEWEBE”

