

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

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European Technical Assessment

ETA-16/0748
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General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Hapuflam Brandschutzgewebe" and
"Hapuflam Brandschutzrüstung"

Product family
to which the construction product belongs

Intumescent products for fire sealing and fire stopping
purposes

Manufacturer

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

Manufacturing plant

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This European Technical Assessment
contains

6 pages including 1 annex which forms an integral part of
this assessment

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

350005-00-1104, Edition May 2015

This version replaces

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Specific Part

1 Technical description of the construction product

This European technical approval (ETA) applies to the intumescent construction products "Hapuflam Brandschutzgewebe" and "Hapuflam Brandschutzrüstung".

In case of fire, exposed to high temperatures, the intumescent product expands and generates foam. This foam seals joints and gaps, closes voids and openings. Thus, the foam restricts the passage and the spread of heat, smoke, flames or any combination of these.

In case of fire the products generate only insignificant expansion pressure during reaction.

The intumescent construction product "Hapuflam Brandschutzgewebe" is a factory-made, flexible, tear-proof fabric with at least 7 % open mesh. According to DIN EN ISO 10319¹ the ultimate elongation is ca 4 % (longitudinal) and ca 4,4 % (across the fibre); the ultimate tensile strength is ca 30 kN/m (longitudinal) and ca. 50 kN/m (across the fibre).

"Hapuflam Brandschutzgewebe" is available in different colours (see appendix).

The intumescent construction product "Hapuflam Brandschutzgewebe" consists of a glass filament mesh² completely coated with a solvent-free intumescent coating consisting essentially of intumescent substances and a binder³. Optionally the coloured top-coat "Hapuflam tc"³ can be used.

The flexible intumescent fabric "Hapuflam Brandschutzgewebe" is manufactured in widths of 500 mm or 1000 mm; preferably it will be delivered in pre-cut lengths of 1500 mm. Other dimensions e.g. fire sealing strips, mats and special cuts are possible.

Optionally the flexible intumescent fabric "Hapuflam Brandschutzgewebe" also may be cut to size on site.

The intumescent construction product "Hapuflam Brandschutzrüstung" consists of an expanded metal mesh of stainless steel², at the factory completely coated with the same intumescent coating³ just as "Hapuflam Brandschutzgewebe". The product can be pre-formed with any dimensions on customers' demand. Optionally the coloured top-coat "Hapuflam tc"³ can be used.

The fixing of the product is not part of this ETA, so the manufacturer's instructions should be considered.

The technical characteristics relevant for fire sealing and fire stopping effects of the construction products "Hapuflam Brandschutzgewebe" and "Hapuflam Brandschutzrüstung" are given in appendix 1.

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

The construction products "Hapuflam Brandschutzgewebe" and "Hapuflam Brandschutzrüstung" are assessed on the basis of EAD 350005-00-1104⁴ as intumescent products for fire sealing and fire stopping purposes without defined final intended use (IU 1).

The construction products are intended to be used as essential components in construction products, construction elements, assemblies, kits and special constructions which need to meet requirements concerning the safety in case of fire.

¹ EN ISO 10319:2008 Geosynthetics; Wide-width tensile test
² Type, manufacturer and characteristics deposited at DIBt
³ Detailed chemical composition deposited with DIBt
⁴ Official Journal of the EU N° C 378/02 of 13/11/2015

In case of fire, the products delay the heat transfer through fire resistant construction products and construction elements by expanding under the impact of high temperatures and thus restricting the spread of fire.

The performance given in section 3 is only valid, if the construction products "Hapuflam Brandschutzgewebe" and "Hapuflam Brandschutzrüstung" in use, consider the instructions and the conditions as assumed in section 3.3.

The test and assessment methods on which this European Technical Assessment is based, lead to the assumption of working life of the intumescent construction products "Hapuflam Brandschutzgewebe" and "Hapuflam Brandschutzrüstung" of at least 10 years⁵ in final use.

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.

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

3.1 Safety in case of fire (BWR 2)

3.1.1 Reaction to fire

Essential characteristic	Performance
Reaction to fire	Class B-s2,d0 in accordance with EN 13501-1

On mineral substrates (density $\geq 800 \text{ kg/m}^3$) and on substrates of class A1 in accordance with EN 13501-1⁶ the intumescent construction products "Hapuflam Brandschutzgewebe" and "Hapuflam Brandschutzrüstung" meet the reaction to fire requirements of class B-s2,d0 in accordance with EN 13501-1⁶.

3.1.2 Resistance to fire

The performance "resistance to fire" shall be determined separately for every final use and shall be classified, if required for the construction element concerned.

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Content and release of dangerous substances	No dangerous substances ⁷

The detailed chemical composition of the intumescent construction product "Hapuflam Brandschutzgewebe" and "Hapuflam Brandschutzrüstung" was assessed by DIBt and is deposited with DIBt.

3.3 General aspects

Durability testing shall be an integral part of assessing the basic works and performance requirements. The following specific provisions for use shall be complied with to ensure the durability of the performance.

The testing and the assessment of the relevant product performance were carried out for environmental conditions of type Y₁ - product although intended for use at temperatures below 0° C and with occasional UV impact but no impact of rain (roofed out-door use) – was carried out in accordance with EOTA Technical Report 024, section 2.2.4⁸

⁵ Results (historical data) of long-term aging available (natural aging for 10 years defined exposure)

⁶ EN 13501-1 Fire classification of construction products and building elements, Part 1 Classification using test data from reaction to fire tests and A1:2009

⁷ In accordance with the Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 (published in the Official Journal of the EU N° L 353 of 31/12/2008, p 1)

⁸ EOTA TR 024 Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and products; edition as amended August 2019

Assessment:

The intumescent construction product "Hapuflam Brandschutzgewebe" and cuts of it and the product "Hapuflam Brandschutzrüstung" can be used under use conditions of type Y₁ indoor with or without the impact of humidity or condensation, with occasional impact of UV radiation and at temperatures between -20 °C and +80 °C without having to fear essential changes in the relevant fire sealing and fire stopping properties (expansion ratio) and the resulting performance.

This assessment includes the in-door use under use conditions of type Y₂, Z₁ and Z₂.

In addition the intumescent coating for the products "Hapuflam Brandschutzgewebe" and "Hapuflam Brandschutzrüstung" were tested under specific durability conditions according to EOTA TR 024, section 2.3

- Exposure to a constant temperature of 80 °C for 40 days,
- Exposure to solvents (tested with Butylacetat, Butanol, solvent naphtha and fuel)
- Exposure to intimate contact to plastics (PVC, PE).

The tested characteristic did not change essentially due to these exposures.

The construction products shall not get subsequently coatings e.g. on the basis of polyurethan or epoxy resin, which could influence the foaming and the reaction to fire behaviour

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

In accordance with the European Assessment Document EAD No 350005-00-1104 the Decision of the commission N° 1999/454/EC of 22 June 1999 (OJ of the EU L 178 of 14 July 1999, p 42), amended by EC Decision 2001/596/EC of 8 January 2001 (OJ of the EU L 209 of 2 August 2001, p 33) is the legal basis for the determination of the AVCP system.

So system 1 applies for the assessment and verification of constancy of performance (AVCP). (See Annex V in conjunction with Article 65 (2) of the Regulation (EU) N° 305/2011) and the following table:

Product	Intended use	characteristic	System
"Hapuflam Brandschutzgewebe" "Hapuflam Brandschutzrüstung"	Components effective in view of safety in case of fire (BWR 2) used in construction products, construction elements, kits and special assemblies	reaction to fire, properties relevant for the fire sealing and fire stopping effect	1

5 Technical details necessary for the implementation of the procedure for assessment and verification of constancy of performance (AVCP) system 1, as provided for in the applicable European Assessment Document

The technical details necessary for the implementation of the system for assessment and verification of constancy of performance are laid down in the control plan (confidential part of this ETA) deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 10 October 2023 by Deutsches Institut für Bautechnik

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Head of Section

beglaubigt:
Dr.-Ing. Dierke

ANNEX


CHARACTERISTICS RELEVANT FOR THE FIRE SEALING AND FIRE STOPPING EFFECTS OF THE CONSTRUCTION PRODUCTS "HAPUFLAM BRANDSCHUTZGEWEBE" AND "HAPUFLAM BRANDSCHUTZRÜSTUNG"

Characteristic	Test method ⁹	Range of determined values and tolerances
"Hapuflam Brandschutzgewebe"		
Nominal thickness	EOTA TR 024, cl. 1.2.2.1	1,9 mm ± 0,3 mm
Mass per unit area	EOTA TR 024, cl. 1.2.5	1,55 kg/m ² to 1,85 kg/m ²
Non-volatile components	EOTA TR 024, cl. 1.2.7	≥ 95 % (tested at 400 °C)
Expansion ratio	EOTA TR 024, cl. 3.1.11, method 2 (without a top load)	12,0 to 19,0 (thickness tested ca. 1,7 mm)
"Hapuflam Brandschutzrüstung"		
Nominal thickness	EOTA TR 024, cl. 1.2.2.1	1,9 mm ± 0,3 mm
Mass per unit area	EOTA TR 024, cl. 1.2.5	1,55 kg/m ² to 1,85 kg/m ²
Expansion ratio	EOTA TR 024, cl. 1.2.11, method 2 (without a top-load)	12,0 to 19,0

In case of fire the construction products do not develop essential expansion pressure.

COLOUR GRADES, AVAILABLE FOR THE CONSTRUCTION PRODUCTS "HAPUFLAM BRANDSCHUTZGEWEBE" AND "HAPUFLAM BRANDSCHUTZRÜSTUNG"

Identification code	Colour
8002sw or 8002sw RÜ	black / anthracite
8002br or 8002br RÜ	brown
8002rt or 8002rt RÜ	red
8002oe or 8002oe RÜ	orange
8002gb or 8002gb RÜ	yellow
8002ws or 8002ws RÜ	light grey / white
8002gr or 8002gr RÜ	grey
8002gn or 8002gn RÜ	green
8002bl or 8002bl RÜ	blue



Examples for the colour grades

⁹ Details of the test methods are deposited with DIBt