

European Technical Approval ETA-12/0199

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung
Trade name

"Hapuflam Brandschutzgewebe"

Zulassungsinhaber
Holder of approval

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

Zulassungsgegenstand
und Verwendungszweck
*Generic type and use
of construction product*

Biegsames, dämmschichtbildendes Brandschutzgewebe

Flexible Intumescent Fabric

Geltungsdauer:
Validity:

vom
from
bis
to

16 May 2012

16 May 2017

Herstellwerk
Manufacturing plant

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

Diese Zulassung umfasst
This Approval contains

11 Seiten einschließlich 2 Anhänge
11 pages including 2 annexes

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches 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 products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by law of 31 October 2006⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.
- 2 Deutsches 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. 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- 4 This European technical approval may be withdrawn by Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.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 Deutsches 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 its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

¹ Official Journal of the European Communities L 40, 11 February 1989, p. 12
² Official Journal of the European Communities L 220, 30 August 1993, p. 1
³ Official Journal of the European Union L 284, 31 October 2003, p. 25
⁴ *Bundesgesetzblatt Teil I 1998*, p. 812
⁵ *Bundesgesetzblatt Teil I 2006*, p. 2407, 2416
⁶ Official Journal of the European Communities L 17, 20 January 1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product/ products and intended use

1.1 Definition of the construction product

This European technical approval (ETA) applies to the flexible intumescent fabric "Hapuflam Brandschutzgewebe".

The construction product "Hapuflam-Brandschutzgewebe" is a factory-made, tearproof fabric with approximately 7 % open mesh, consisting of a glass filament fabric⁷ completely coated with an intumescent coating⁷.

The construction product is offered in different colours (see annex 2).

The flexible intumescent fabric "Hapuflam Brandschutzgewebe" may be cut in size on site.

The fire sealing effect of the product bases on the creation of foam in case of fire, that closes gaps, joints and other openings of construction elements and restricts the passage of heat, flame and /or smoke this way. When reacting the product creates no essential expansion pressure

The construction product "Hapuflam Brandschutzgewebe" is manufactured in widths of 500 mm and 1000 mm; preferably it will be delivered in pre-cut length of 1500 mm. Other dimensions are possible.

The characteristics of the flexible intumescent fabric and its following relevant performances were determined⁸:

- Thickness: 1,6 mm to 2,2 mm
- Mass per unit area: 1,55 kg/m² to 1,85 kg/m²
- Content of non-volatile components : ≥ 95,0 %
(tested at 105 °C for 3 h)
- Loss of mass on heating: 45,0 % to 55,0 %
(tested at 400 °C for 30 minutes)
- Expansion ratio: 12,0 to 19,0
(tested on samples ca 1,7 mm thick at 400 °C for 30 minutes without a top load)

The ultimate elongation of the product is ca 4 % (longitudinal) and ca 4,4 % (across the fibre) and the ultimate tensile strength is ca 30 kN/m (longitudinal) and 50 kN/m (across the fibre) according to DIN EN ISO 10319⁹.

1.2 Intended use

The construction product "Hapuflam Brandschutzgewebe" is intended to be used as component essential for the fire sealing and fire protective effect of construction elements and special assemblies which shall meet requirements concerning the safety in case of fire. It prevents the heat transmission and propagation of fire by creating foam.

⁷ Type, manufacturer and characteristics deposited at DIBt

⁸ Test methods in accordance with the CUAP 11.04/06, version December 2011, also see Technical Report 024 (TR 024), version July 2009

⁹ EN ISO 10319:2008 Geosynthetics; Wide-width tensile test

The flexible, intumescent fabric in end use conditions or freely suspended according to this ETA may be subjected to conditions for the use category type Y_1 (in-door use without restriction in relative humidity; temperatures -20°C to 80°C and casual UV-Radiation allowed). This includes the in-door use in accordance with the use categories type Z_2 , Z_1 and Y_2 .¹⁰

If the construction product "Hapuflam Brandschutzgewebe" is intended to be used in specific conditions or out-door application, further tests are necessary.

The provisions made in this European technical approval are based on an assumed working life of the flexible, intumescent fabric "Hapuflam Brandschutzgewebe" in end use application of 10 years, provided that the conditions laid down in sections 4.2, 5.1 and 5.2 for packaging, transport, storage, installation, use, maintenance and repair are met.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or the approval body, 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.

2 Characteristics of the products and methods of verification

2.1 Mechanical resistance and stability

Not relevant

2.2 Safety in case of fire

2.2.1 Reaction to fire

The construction product "Hapuflam Brandschutzgewebe" corresponds to the requirements of reaction-to-fire class B-s2,d0 according to EN 13501-1¹¹.

NOTE:

A European reference fire scenario for façades is not available. In some Member States the classification of the flexible, intumescent fabric "Hapuflam Brandschutzgewebe" according to EN 13501-1 may possibly not be sufficient for the use in façades. An additional assessment of "Hapuflam Brandschutzgewebe" according to national provisions (e.g. on the basis of a large scale test) might be necessary to comply with Member State regulations, until the existing European classification system has been completed.

2.2.2 Resistance to fire

For demonstration of the suitability of "Hapuflam Brandschutzgewebe" in fire resistant assemblies (end use) cable bundles wrapped with the flexible, intumescent fabric "Hapuflam Brandschutzgewebe" provided with and without cable trays were tested on the basis of EN 1363-1¹² and EN 1366-3¹³ concerning resistance to fire. The cable bundles were fed through a wall of porous concrete 100 mm thick.

The assembly tested (end use) can be classified according to EN 13501-2¹⁴ on the basis of the test results e.g. EI 30 to EI 90.

¹⁰ EOTA TR 024, version July 2009, clause 4.1, use categories, Note 5

¹¹ EN 13501-1:2009 Fire classification of construction products and building elements, Part 1: Classification using test data from reaction to fire tests.

¹² EN 1363-1:1999 Fire resistance tests; Part 1: General requirements

¹³ EN 1366-3:2009 Fire resistance for service installations; Part 3 Penetration seals

¹⁴ EN 13501-2:2010 Fire classification of construction products and building elements, Part 2: Classification using data from fire resistance tests, excluding ventilation services

This test basically qualifies the flexible, intumescent fabric "Hapuflam Brandschutzgewebe" for use in fire sealing and fire stopping applications.

The performance "resistance to fire" is not being considered in more detail in this ETA. It shall be tested separately for the final assemblies concerned.

2.3 Hygiene, health and the environment

2.3.1 Air and water permeability

Not relevant

2.3.2 Release of dangerous substances

According to the manufacturer's declaration and the chemical composition deposited¹⁵, the flexible, intumescent fabric "Hapuflam Brandschutzgewebe" does not contain dangerous substances as registered in the Council Directive 76/769/EEC (amended by EC Decision 455/2009/EC of 6 May 2009)¹⁶ and listed in the database of the European Commission; published in the Regulation (EC) N° 1272/2008 of 16 December 2008¹⁷.

It was determined that the admissible limit values of these dangerous substances are not being exceeded or rather no dangerous substances are contained.

NOTE:

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

2.4 Safety in use (mechanical resistance and stability)

Not relevant

2.5 Protection against noise

Not relevant

2.6 Energy, economy and heat retention

Not relevant

2.7 Aspects of durability and serviceability

The construction product "Hapuflam Brandschutzgewebe" was tested for the use category type Y₁.⁸

No essential changes of the relevant intumescent properties expansion ratio and expansion pressure could be assessed.

Conclusion:

The construction product "Hapuflam Brandschutzgewebe" under end-use conditions can be exposed to in-door conditions with or without high humidity and to permanent or occasional condensation, to occasional UV-radiation and to occasional temperatures below 0°C without expecting essential changes of the intumescent properties.

¹⁵ The detailed chemical composition of the reactive coating was presented at DIBt for assessment. Type, manufacturer and characteristics of the glass filament fabric are deposited at DIBt.

¹⁶ Official Journal of the European Communities L 137 of 3 June 2009, p 3

¹⁷ Official Journal of the European Communities L 353 of 31 December 2008, p 1

Voluntarily the following additional verifications of the product's behaviour were provided¹⁸:

- exposure to a permanent temperature of 80 °C for 40 days,
- exposure to solvents:
 - butyl acetate
 - butanol
 - solvent naphtha
 - fuel oil

After these exposures no essential changes of the intumescent properties expansion ratio and expansion pressure could be assessed.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the Decision 1999/454/EG of the European Commission¹⁹, system 1 of the attestation of conformity applies.

In addition, according to the Decision 2001/596/EC of the European Commission²⁰ system 3 of the attestation of conformity applies with regard to reaction to fire.

These systems of attestation of conformity are defined as follows:

System 1: Certification of the conformity of the product by an 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;

(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.

System 3: Declaration of conformity of the product by the manufacturer on the basis of:

(a) Tasks for the manufacturer:

- (1) factory production control;

(b) Tasks for the notified body:

- (2) initial type-testing of the product.

¹⁸ EOTA Technical Report 024 (TR 024), version July 2009, clause 4.3

¹⁹ Official Journal of the European Communities L 178/42 of 14 July 1999.

²⁰ Official Journal of the European Communities L 209/33 of 2 August 2001

3.2 Responsibilities

3.2.1 Tasks for the manufacturer and the notified body/bodies

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 may only use raw materials and components stated in the technical documentation of this European technical approval.

The factory production control (FPC) shall be in accordance with the control plan which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the FPC system operated by the manufacturer and deposited with Deutsches Institut für Bautechnik.²¹

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

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is notified for the tasks referred to in section 3.1 in the field of fire sealing and fire stopping products in order to undertake the actions as laid down in section 3.2.2. 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 notified body 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 ETA-12/0199, issued on 16 May 2012.

3.2.2 Tasks for the notified bodies

The notified body shall perform the

- initial type-testing of the product (systems 1 and 3),
 - initial inspection of factory and of factory production control (systems 1),
 - continuous surveillance, assessment and approval of factory production control (system 1)
- in accordance with the provisions laid down in the control plan of 08/03/2012.

The notified body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The notified certification 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 Deutsches Institut für Bautechnik without delay.

²¹ The "control plan" is a confidential part of the European technical approval and only handed over to the approved body/bodies involved in the procedure of attestation of conformity. See section 3.2.2.

3.3 CE marking

The CE marking shall be affixed on the product itself or the label attached to it or on packaging or the accompanying commercial document, e.g. the EC declaration of conformity.

The letters "CE" shall be followed by the identification number of the notified certification body, where relevant, and be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacture),
- 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 generic type of product,
- the use categories

Example: see annex 1

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

4.1 Manufacturing

The European technical approval is issued for the product "Hapuflam Brandschutzgewebe" on the basis of agreed data and information, deposited with Deutsches Institut für Bautechnik, which identifies the products assessed and judged. Changes - concerning the product or the production process, which could result in these deposited data and information being incorrect - should be notified to Deutsches Institut für Bautechnik before implementing the changes.

The Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or modifications to the approval shall be necessary.

4.2 Installation

Additionally installed cover-sheets for mechanical protection must not restrict the creation of foam of the flexible, intumescent fire sealing fabric "Hapuflam Brandschutzgewebe". Subsequently added coatings are not allowed.

The product may be cut to size on site with appropriate tools (cutter, knife).

For installation the manufacturer recommends mounting clips, metal clamps and tying wire.

The manufacturer's installation instruction shall be considered.

5 Indications to the manufacturer

5.1 Packaging, transport and storage

The flexible, intumescent fabric "Hapuflam Brandschutzgewebe" shall be protected from direct exposure to weathering during transport.

The construction product "Hapuflam Brandschutzgewebe" should be stored at a temperature between +2°C and +50 °C and at relative humidity between 50 % and 70 % RH.

European technical approval

ETA-12/0199

English translation prepared by DIBt

Page 9 of 11 | 16 May 2012

5.2 Use, maintenance, repair

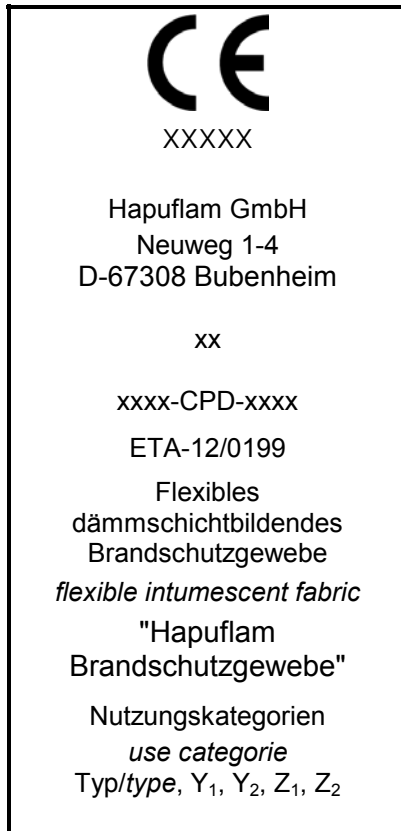
Damaged sections of "Hapuflam Brandschutzgewebe" shall be only replaced by new, intact sections of the same flexible, intumescent fabric. The required quantity and the total thickness of material shall be maintained.

Prof. Gunter Hoppe
Head of Department

beglaubigt
Dr.-Ing. Sabine Dierke

ANNEX 1

Example of CE-Marking the construction product "Hapuflam Brandschutzgewebe"



Symbol "CE"

Identification number of notified certification body for AoC system 1

Name and address of the producer (legal entity responsible for the manufacturer)

Two last digit of year of affixing CE marking for AoC system 1

Number of EC certificate of conformity

ETA number

Generic type of product

and trade name

Use categories according to ETA-12/0199

ANNEX 2

flexible intumescent fabric (mesh) "Hapuflam Brandschutzgewebe"



Sample board of the colours of "Hapuflam Brandschutzgewebe"