Deutsches Institut für Bautechnik

DIBt

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

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European Technical Assessment

ETA-16/0369 of 5 August 2016

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	HENSOTHERM® 7KS Gewebe
Product family to which the construction product belongs	Intumescent products for fire sealing and fire stopping purposes
Manufacturer	Rudolf Hensel GmbH Lauenburger Landstraße 11 21039 Börnsen DEUTSCHLAND
Manufacturing plant	01[1]
This European Technical Assessment contains	5 pages including 1 annex 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) 350005-00-1104

[1] Address known at DIBt

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Specific Part

1 Technical description of the product

Object of this European Technical Assessment (ETA) is the intumescent construction product "HENSOTHERM® 7KS Gewebe".

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.

The technical characteristics relevant for fire sealing and fire stopping effects of the construction product "HENSOTHERM® 7KS Gewebe" are given in Annex 1.

The construction product "HENSOTHERM® 7KS Gewebe" is a dense and flexible, factory made intumescent fire sealing fabric.

The fire sealing fabric "HENSOTHERM® 7KS Gewebe" consists of a glass filament fabric[2] mechanically covered with an intumescent coating[3] of anthracite colour grade on both sides. The product is produced of a total thickness of 1 mm or 2 mm (tolerance for each thickness ± 0,2 mm).

The intended unexposed side of the fabric is covered of at least 0,1 mm with the intumescent coating, while the side to be exposed to fire, is coated as intended for the total nominal thickness[3].

The flexible intumescent fabric "HENSOTHERM® 7KS Gewebe" of a nominal thickness of 1 mm is processed to strips, mats and sheets of several nominal widths between 125 mm and 1250 mm (tolerance in width for each of ± 0,5 mm).

The product "HENSOTHERM® 7KS Gewebe" of a nominal thickness of 2 mm is processed to strips with a standard width of 50 mm (tolerance in width ± 0,5 mm).

Other dimensions are possible on demand. Cutting on site is possible.

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

The construction product "HENSOTHERM® 7KS Gewebe" is assessed on the basis of EAD 350005-00-1104[4] as an intumescent product for fire sealing and fire stopping purposes without defined final use (IU 1).

The construction product "HENSOTHERM® 7KS Gewebe" is intended to be used as an essential component in construction products, construction elements, assemblies, kits and special constructions which need to meet requirements concerning the safety in case of fire.

In case of fire, the product delays 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 product "HENSOTHERM® 7KS Gewebe" is used in accordance with the instructions and the conditions stated in section 3.3.

The tests and assessment methods on which this European Technical Assessment is based, lead to an assumption of working life of the intumescent construction product "HENSOTHERM® 7KS Gewebe" of at least 10 years in final use.

2 type, manufacturer and specific parameters deposited with DIBt
3 required quantities and composition deposited with DIBt
4 Official Journal of the EU N° C 378/02 of 13/11/2015

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 nominal thickness of 1 mm, free standing or on mineral substrates of a minimum density of 525 kg/m^3 and on metal substrates with a melting point at least of 500 °C	Class C-s2,d0[5]
Reaction to fire other nominal thicknesses, other substrates	Class E[5]

The intumescent construction product "HENSOTHERM® 7KS Gewebe" meets the reaction to fire requirements of class E in accordance with EN 13501-1.

"HENSOTHERM® 7KS Gewebe" with a nominal thickness of 1 mm, free standing or on mineral substrates of a minimum density of 525 kg/m^3, on metal substrates with a melting point at least of 500 °C and on classified substrates of class A1 and class A2-s1 meets the reaction to fire requirements of class C-s2,d0 in accordance with EN 13501-1.

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.

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Content and emission of dangerous substances	No dangerous substances[6]

The detailed chemical composition of the intumescent construction product "HENSOTHERM® 7KS Gewebe" 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 shall be complied with to ensure the durability of the performance for the intended use. The following specific provisions for use shall be complied with to ensure the durability of the performance.

The testing and the assessment of the product performance were carried out for climatic conditions of type X - product intended for use at conditions exposed to weathering (rain, UV, frost) - in accordance with EOTA Technical Report 024[7] (EOTA TR 024), section 4.2.3.

5 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

6 In accordance with the regulation (EU) N° 1272/2008 of 16/12/2008

7 EOTA TR 024 Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and products; amended version July 2009

Result:

The intumescent construction product "HENSOTHERM® 7KS Gewebe" can be used under climatic use conditions of type X, without having to fear essential changes in the relevant fire sealing and fire stopping properties and the resulting performance. This assessment includes the unlimited in-door use under use conditions of type Y_1, Y_2, Z_1 and Z_2.

Optionally the product was tested under specific application conditions according to EOTA TR 024, section 4.3

- Exposure to a constant temperature of 80 °C for 40 days,
- Exposure to solvents (tested with Butylacetat, Butanol, solvent naphtha and fuel)
- Subsequent over-painting (tested with coatings on the basis of acryl dispersion, alkyd resin, polyurethanacryl and epoxide resin,
- Exposure to water immersion for 4 weeks,
- Exposure to intimate contact to plastics (PVC, PE).

The characteristics "expansion ratio" and "expansion pressure" did not change essentially due to the exposure.

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

In accordance with 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) 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
"HENSOTHERM® 7KS Gewebe"	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 AVCP system, as provided for in the applicable EAD

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 at Deutsches Institut für Bautechnik.

Issued in Berlin on 5 August 2016 by Deutsches Institut für Bautechnik

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ANNEX 1

CHARACTERISTICS OF THE CONSTRUCTION PRODUCT "HENSOTHERM® 7KS Gewebe" RELEVANT FOR THE FIRE SEALING AND FIRE STOPPING EFFECTS

characteristic	Test method[1]	Range of determined values and tolerances
Weight per unit area	EOTA TR 024, cl. 3.1.5	Thickness 1,0 mm: 1,15 kg/m^2 to 1,60 kg/m^2 Thickness 2,0 mm: 1,95 kg/m^2 to 2,85 kg/m^2
Expansion ratio	EOTA TR 024, cl. 3.1.11 Method 1 at 550 °C for 30 minutes with a top load	Thickness 1,0 mm: 16,5 to 23,5 Thickness 2,0 mm:8,0 to 22,0
Expansion pressure	EOTA TR 024[6], cl. 3.1.12 Method 4 at 300 °C	Thickness 1,0 mm: 0,90 N/mm^2 to 1,50 N/mm^2 Thickness 2,0 mm: 0,45 N/mm^2 to 2,50 N/mm^2

The chemical reaction starts at approximately 150 °C

1 Details of testing are deposited with DIBt.