

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
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European Technical Assessment

ETA-20/0664
of 11 June 2021

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

ISIFLEX Fugenelement

Product family
to which the construction product belongs

Fire saeling and fire stopping products - Linear joint and
gap seals

Manufacturer

HBT
Hochbau Brandschutz Technik GmbH
Neue Bahnhofstraße 46
34621 Frielendorf
DEUTSCHLAND

Manufacturing plant

HBT
Hochbau Brandschutz Technik GmbH
Neue Bahnhofstraße 46
34621 Frielendorf
DEUTSCHLAND

This European Technical Assessment
contains

9 pages including 4 annexes 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

EAD 350141-00-1106, Edition September 2017

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Specific part

1 Technical description of the product

Object of this European Technical Assessment (ETA) is the joint sealing kit "ISIFLEX Fugenelement" for executing fire protective linear joint and gap seals.

The joint sealing kit "ISIFLEX Fugenelement" consists at least of a compressible, elastic multi-layered sealing strip made of a foamed plastic¹, coated with an intumescent material¹ and the installation guide. The joint sealing strip is traded of a standard length of ca. 100 cm. It may be compressed for installation up to 60%.

Optionally "ISIFLEX Brandschutzsilikon"¹ (sealant) of grey or white colour for decorative top-cover of the joint and "ISILASTIK Brandschutzbeschichtung B5"¹ (coating) or "ISIFLEX Brandschutzsilikon"¹ to bond adjoining elements, may be components of the kit².

The movement stress on a joint between massive, fire resistant walls and floors executed with "ISIFLEX Fugenelement" shall not exceed 60 % (related to the width of the joint) for mechanically generated shear. The linear expansion of the executed joint generated by pressure, share or deflection shall never exceed 60 %.

The specific parameters of the components of "ISIFLEX Fugenelement" are given in Annex A.

The detailed description of the components, their processing and the chemical composition of the intumescent material are deposited with Deutsches Institut für Bautechnik.

Details of the system setup of the tested variants for "ISIFLEX Fugenelement" in use are given in Annex B.

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

The joint sealing kit "ISIFLEX Fugenelement" will be assessed in accordance with the European Assessment Document (EAD) N° 350141-00-1106³.

The joint sealing kit "ISIFLEX Fugenelement" is intended to be used in horizontal and vertical linear joints (e.g. structural joints and linear butt joints) between massive, fire resistant rigid walls and floors with a fire-separating function made of construction materials classified as class A1 or A2-s1,d0 in accordance with EN 13501-1 and which may be exposed to lateral strain, shear or compression.

The joint sealing kit "ISIFLEX Fugenelement" incorporated in horizontal or vertical linear joints is intended to maintain or reinstate the fire resistance performance of building components with a fire-separating function in case of fire, where they are interrupted or separated by joints.

The incorporated product is not intended for direct load transmission.

The performances given in Section 3 are only valid if the fire sealing kit is used in compliance with

- the specifications and conditions given in Annex B and
- the manufacturer's instructions in accordance with section 5.

¹ Type, manufacturer and parameters deposited.

² The tests for resistance to fire also enclose these variants.

³ Official Journal of the EU N° C 435/07 of 15 December 2017; p. 157; EAD N° 350141-00-1106 „Linear joint and gap seals“

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of working life of the incorporated joint sealing kit "ISIFLEX Fugenelement" at in-door use conditions of ca. 25 years and of at least 10 years at roofed or protected out-door conditions.

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 its assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire "ISIFLEX Fugenelement" "ISIFLEX Fugenelement" with butt-sealing of Brandschutzsilicon "ISIFLEX Fugenelement" with butt-sealing of ISILASTIK B5 Brandschutzbeschichtung	class B-s3,d0 in accordance with EN 13501-1 class B-s3,d0 in accordance with EN 13501-1 class D-s3,d0 in accordance with EN 13501-1
Resistance to fire	class EI in accordance with EN 13501-2, see Annex B

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Content of dangerous substances	No dangerous substances ⁴

The detailed chemical composition of the components of the joint sealing kit "ISIFLEX Fugenelement" was assessed by DIBt and is deposited with the DIBt. The composition of the product has to relate to the deposition.

3.3 Safety and accessibility in use (BWR 4)

No performance determined (NPD)

3.4 Protection against noise (BWR 5)

No performance determined (NPD)

3.5 Energy economy and heat retention (BWR 6)

No performance determined (NPD)

3.6 Sustainable use of natural resources (BWR 7)

No performance determined (NPD)

3.7 General aspects

The evidence of durability is part of testing the basic works requirements and the achievement of the performance assessed.

In accordance with EAD 350141-00-1106³, clause 2.1 the joint sealing kit "ISIFLEX Fugenelement" can be used under the following final use conditions, without having to fear essential changes in the properties relevant for the fire protective effect and the resulting performance:

⁴ In accordance with the Regulation (EC) N° 1272/2008 of the European Parliament and the Council of 16 December 2008; published in the Official Journal of the EU N° L353 of 31 December 2008, p 1

English translation prepared by DIBt

- Type Y₁: use at temperatures below 0 °C with occasional exposure to UV radiation, but no exposure to rain (roofed).
- Type Y₂: use at temperatures also below 0 °C, but no exposure to rain or UV.
- Type Z₁: in-door use at changing relative humidity equal to or higher than 85 % RH, but no temperatures below 0 °C (frost-protected).
- Type Z₂: in-door use at a relative humidity lower than 85 % RH, but no temperatures below 0 °C (dry, frost-protected).

The assumption concerning durability under final use conditions – at in-door conditions for ca 25 years and at roofed out-door conditions for 10 years - is only ensured, if the specifications of intended use are considered according to Annex B and the manufacturer's instructions in accordance with section 5.

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

In accordance with EAD No. 350141-00-1106³, the applicable European legal act is: 1999/454/EC⁵.

The system of assessment and verification of constancy of performance (AVCP) (see Annex V and Article 65 Paragraph 2 to Regulation (EU) N° 305/2011) is:

System 1

as given in the following table:

Product	Intended use	Level(s) or class(es)	AVCP-System
"ISIFLEX Fugenelement"	sealing of joints between fire-resistant separating building elements in case of fire	all resistance to fire reaction to fire	1

5 Technical details necessary for the implementation of the system for Assessment and Verification of Constancy of Performance

Technical details necessary for the implementation of System 1 for Assessment and verification of constancy of performance (AVCP) are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

The manufacturer shall provide installation instructions on every construction kit according to this ETA containing at least the information on type, properties (minimum thickness, density) and resistance to fire of the building components with fire-separating function in which the joint sealing kit "ISIFLEX Fugenelement" may be installed as fire protective joint, and a description or picture of the proper installation of the kit.

Issued in Berlin on 11 June 2021 by Deutsches Institut für Bautechnik

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beglaubigt:
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⁵ Decision of the Commission N° 1999/454/EC of 22 June 1999, published in the Official Journal of the EU N° L 178/52 of 14 July 1999, p. 3, as amended by Decision of the Commission N° 2001/596/EC of 8 January 2001; published in the Official Journal N° L 209/33 of 2 August 2001, p. 2

Parameters of the components of the kit "ISIFLEX Fugenelement"

1. Intumescent component

Characteristic	parameter and tolerance	Test method
Density (as delivered)	1200 kg/m ³ ± 60 kg/m ³	see control plan
Loss of mass at a certain temperature (at 550°C)	48,0 ± 5 %	
expansion ratio at a thickness of 1,0 mm	13,0 to 23,0	
expansion pressure at a thickness of 1,0 mm	1,0 N/mm ² to 2,2 N/mm ²	

2. Compressible elastic sealing strip made of a foamed plastic with intumescent coating

Characteristic	Parameter and tolerance	Test method
Thickness with intumescent layer on both sides	27 mm ± 10%	calliper gauge or digital measuring slide,
Density	230 kg/m ³ ± 10 kg/m ³	EN ISO 845
Reaction to fire	class B-s3,d0	EN 13501-1

3. ISIFLEX Brandschutzsilikon* (sealant)

Characteristic	Parameter and tolerance	Test method
Colour	grey, white	visual
Density at 20°C	1,4 g/ml ± 0,2 g/ml	EN ISO 2811-1
Reaction to fire	class B-s3,d0	EN 13501-1

4. ISILASTIK Brandschutzbeschichtung B5* (coating/adhesive)

Characteristic	Parameter and tolerance	Test method
Density at 20°C	1,3 g/ml ± 0,2 g/ml	EN ISO 2811-1
Reaction to fire	class D-s3,d0	EN 13501-1

5. ISIFEST Brandschutzkleber SB* (adhesive)

Characteristic	Parameter and tolerance	Test method
Density	650 kg/m ³ ± 0,2 kg/m ³	EN ISO 2811-1
reaction to fire	class A2-s1,d0	EN 13501-1

* optional; not mandatory part of the kit, only where intended

Joint sealing kit "ISIFLEX Fugenelement"

Description of the components of the assessed kits

Annex A

English translation prepared by DIBt

Fire-separating elements

The kit "ISIFLEX Fugenelement" is intended to seal linear joints between massive construction elements as walls and ceilings of a minimum density of 600 kg/m³ made of cellular concrete, concrete, reinforced concrete, masonry, hollow block brickwork.

The kit "ISIFLEX Fugenelement" was tested to close horizontal or vertical linear joints of a width of 18 mm up to 100 mm in massive load-bearing walls and ceilings.

Massive vertical load-bearing elements (walls) with fire separating function shall have a minimum thickness of 100 mm and a minimum thickness of 150 mm for massive horizontal load-bearing elements (ceilings). Examples for setup see below.

The fire separating element itself has to show at least the same class of resistance to fire according to EN 13501-2 as required with the joint seal.

The incorporated joint sealing product is not intended for direct load transmission.

The restriction of mechanically induced movement shall be considered as described in section 1 of the European Technical Assessment (ETA).

setup for ceilings	setup for walls	setup ceiling-wall
<p>cross-section – joint sealing</p>	<p>plan view – wall joint</p>	<p>cross-section - connection joint wall-ceiling</p>
<p>cross-section – incorporated split joint sealing</p>	<p>plan view – incorporated split joint sealing</p>	
<p>cross-section – incorporated kit with top-cover of silicone</p>	<p>plan view – wall joint with top-cover of silicone on one side</p>	

legend: 1 massive ceiling; 2 joint sealing "ISIFLEX Fugenelement"; 3 bonding, if intended, with "ISIFLEX-Brandschutzsilikon" or alternatively "ISILASTIK Brandschutzbeschichtung B5"; 4 massive wall; 5 sealing with "ISIFLEX Brandschutzsilikon"

Joint sealing kit "ISIFLEX Fugenelement"

Intended use

Information for execution concerning tested resistance to fire
- construction elements -

Annex B1

Classification of the tested construction elements concerning resistance to fire

Table B.1 Tested vertical joint constructions (walls)
executed with the sealing kit "ISIFLEX Fugenelement"

case of application	Classification in accordance with EN 13501-2
vertical joints, without shear butt-sealings prepared on site	EI 90-V-X-F-W 18 to 100
vertical joints, with shear butt-sealings prepared on site	EI 60-V-M060-F-W 18

Table B.2 Tested horizontal joint constructions (ceillings)
executed with the sealing kit "ISIFLEX Fugenelement"

case of application	Classification in accordance with EN 13501-2
horizontal joints, without shear butt-sealings prepared on site	EI 90-H-X-F-W 18 to 100
horizontal joints, with shear butt-sealings prepared on site	EI 60-V-M060-F-W 18

Joint sealing kit "ISIFLEX Fugenelement"

Intended use

Data for design relating to the proved resistance to fire
- classification -

Annex B 2

List of References

- | | |
|------------------------|--|
| EN 13501-1:2019-05 | Fire classification of construction products and building elements – Part 1: Classification using data from reaction to fire tests |
| EN 13501-2:2016-12 | Fire classification of construction products and building elements – Part 2: Classification using data from resistance tests, excluding ventilation services |
| EN ISO 11925-2:2020-07 | Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2:2010) |
| EN 13823:2020-09 | Reaction to fire tests for building products - Building products exposed to the thermal attack by a single burning item, excluding floorings |
| EN 1363-1:2012-10 | Fire resistance tests – Part 1: General requirements |
| EN 1366-4:2010-08 | Fire resistance tests for service installations – Part 4: Linear joint seals |
| EN ISO 2811-1:2016-08 | Paints and varnishes - Determination of density - Part 1: Pycnometer method |

Joint sealing kit "ISIFLEX Fugenelement"	Annex C
List of References	