Deutsches Institut für Bautechnik

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment ETA-13/0543 of 29 May 2018

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	Joint filling system PYRO-SAFE Fugenabdichtung
Product family to which the construction product belongs	Kit for use in linear joint and gap seals
Manufacturer	svt Brandschutz Vertriebsgesellschaft mbH International Glüsinger Straße 86 21217 Seevetal DEUTSCHLAND
Manufacturing plant	1
This European Technical Assessment contains	12 pages including 7 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
This version replaces	ETA-13/0543 issued on 6 June 2013

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Specific part

1 Technical description of the kit

The joint filling system PYRO-SAFE Fugenabdichtung is a kit consisting of the following components:

- mineral fibre boards ProRox SL 970[D],
- the coating PYRO-SAFE FLAMMOPLAST KS 1,
- the filler (putty) PYRO-SAFE FLAMMOPLAST KS 3 and
- loose mineral wool ProRox LF 970.

PYRO-SAFE FLAMMOPLAST KS 1 is a coating, consisting essentially of intumescent ingredients and binder. Applied on a substrate, the dried layer of PYRO-SAFE FLAMMOPLAST KS 1 generates foam in case of fire without developing significant expansion pressure.

PYRO-SAFE FLAMMOPLAST KS 3 is a putty, consisting essentially of intumescent ingredients and binder. Applied on a substrate, the dried layer of PYRO-SAFE FLAMMOPLAST KS 1 generates foam in case of fire without developing significant expansion pressure.

The maximum lateral stretching capability of the joint filling system PYRO-SAFE Fugenabdichtung is 7.4 %.

Detailed technical descriptions of the components of the joint filling system are given in Annex A.

Details of the product composition is deposited with Deutsches Institut für Bautechnik.

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

The joint filling system PYRO-SAFE Fugenabdichtung is intended to be used in horizontal and vertical linear non-movement joints (structural joints as linear butt joints) between fire resistant rigid walls and floors with a fire-separating function.

The joint filling system is intended to maintain or reinstate the fire resistance performance of building components with a fire-separating function where they are interrupted or separated by joints.

Resistance to fire of the joint filling system PYRO-SAFE Fugenabdichtung is given in Annex B.

The performances given in section 3 are only valid if the joint filling system is used in compliance with

- the specifications and conditions given in the Annexes A and B and
- the manufacturer's instructions.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the joint filling system PYRO-SAFE Fugenabdichtung of at least 10 years. 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

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire of the components	Classes in accordance with EN 13501-1 See Annex A
Resistance to fire of the joint filling system	Classes in accordance with EN 13501-2 See Annex B

3.3 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Air permeability	No performance assessed
Water permeability	No performance assessed
Content, emission and/or release of dangerous substances	
Substance/s classified as EU-cat. Carc. 1A and/or 1B in accordance with Regulation (EC) No 1272/2008.	The product does not contain these dangerous substances actively used.[a)]
Substance/s classified as EU-cat. Muta. 1A and/or 1B in accordance with Regulation (EC) No 1272/2008.	
Substance/s classified as EU-cat. Acute Tox. 1, 2 and/or 3; Repr. 1A and/or 1B; STOT SE 1 and/or STOT RE 1 in accordance with Regulation (EC) No 1272/2008.	Components of the product contain a mixture classified as EU-cat. Acute Tox. 3, labelled with H301 and H311.[a)]
SVOC and VOC	No performance assessed (NPA)
Use scenarios regarding BWR 3 in accordance with EOTA TR 034: IA 1, IA 2	

a) Assessment based on a detailed manufacturer's product declaration for "PYRO-SAFE FLAMMOPLAST KS 1" and "PYRO-SAFE FLAMMOPLAST KS 3".

3.4 Safety and accessibility in use (BWR 4)

No performance assessed

3.5 Protection against noise (BWR 5)

No performance assessed

3.6 Energy economy and heat retention (BWR 6)

No performance assessed

3.7 General aspects of durability and serviceability

The verification of durability and serviceability are part of testing the essential characteristics.

The joint filling system PYRO-SAFE Fugenabdichtung may be used in end-use application with the conditions of the following use categories, with no essential changes in its fire protective property to be expected:

Typ Z_1: intended for use at internal conditions with high relative humidity inclusive temporary condensation, excluding temperatures below 0 °C.

Durability is only ensured if the specifications of the intended use according to Annex B and the manufacturer's instructions are taken into account.

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

In accordance with EAD No. 351000-01-1106, the applicable European legal act is: 1999/454/EC.

The system to be applied is: 1.

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 Deutsches Institut für Bautechnik.

Issued in Berlin on 29 May 2018 by Deutsches Institut für Bautechnik

Maja Tiemann
p. p. Head of Department

Beglaubigt:
von Hoerschelmann

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1 Components and properties

1.1 List of all components

Table 1

No	Component	Description / properties
1	ProRox SL 970[D] Deutsche Rockwool Mineralwoll GmbH 45966 Gladbeck Germany	Type Mineral fibre board according to EN 14303 Dimensions Thickness ≥ 50 mm Nominal gross density ≥ 120 kg/m³ Class according to EN 13501-1 Class A1
2	PYRO-SAFE FLAMMOPLAST KS 1 svt Brandschutz Vertriebsgesellschaft mbH International 21217 Seevetal Germany	Class according to EN 13501-1 Class E The chemical composition is deposited with Deutsches Institut für Bautechnik. For further properties, see Annex A2
3	PYRO-SAFE FLAMMOPLAST KS 3 svt Brandschutz Vertriebsgesellschaft mbH International 21217 Seevetal Germany	Class according to EN 13501-1 Class E The chemical composition is deposited with Deutsches Institut für Bautechnik. For further properties, see Annex A2
4	ProRox LF 970 Deutsche Rockwool Mineralwoll GmbH 45966 Gladbeck Germany	Type Loose mineral wool The composition is deposited with Deutsches Institut für Bautechnik. Class according to EN 13501-1 Class A1

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1.2 Properties of the components PYRO-SAFE FLAMMOPLAST KS 1 and PYRO-SAFE FLAMMOPLAST KS 3

PYRO-SAFE FLAMMOPLAST KS 1

	Characteristic/performance	Criteria and tolerance	Test method
1	Density	1200 kg/m^3 to 1370 kg/m^3	EN ISO 2811-1
2	Non-volatile components	67.0 % ± 5 °%	EOTA TR 24 (2009) cl. 3.1.7 EN ISO 3251, tested at 105 °C for 3 hours
3	Loss of mass at a certain temperature	65.0 % ± 5 °%	EOTA TR 24 (2009) cl. 3.1.8 EN ISO 3451-1 at 400°C for 30 minutes
4	Expansion ratio	105 to 130	EOTA TR 24 (2009) cl. 3.1.11 tested at 400 °C for 30 minutes without a top-load with on dry specimen of ca. 1 mm thickness
5	Reaction to fire	Class E	EN ISO 11925-2/EN 13501-1

PYRO-SAFE FLAMMOPLAST KS 3

	Characteristic/performance	Criteria and tolerance	Test method
1	Density	1200 kg/m^3 to 1385 kg/m^3	EN ISO 2811-1
2	Non-volatile components	65.0 % ± 5 °%	EOTA TR 24 (2009) cl. 3.1.7 EN ISO 3251, tested at 105 °C for 3 hours
3	Loss of mass at a certain temperature	61.0 % ± 5 °%	EOTA TR 24 (2009) cl. 3.1.8 EN ISO 3451-1 at 400°C for 30 minutes
4	Expansion ratio	35.0 to 55.0	EOTA TR 24 (2009) cl. 3.1.11 tested at 400 °C for 30 minutes without a top-load with on dry specimen of ca. 2 mm thickness
5	Reaction to fire	Class E	EN ISO 11925-2/EN 13501-1

2 Fire resistance of the joint filling system PYRO-SAFE Fugenabdichtung

2.1 Building components

The joint filling system PYRO-SAFE Fugenabdichtung is intended to be used between the following building components with a thickness ≥ 180 mm:

Rigid walls

- made of concrete, reinforced concrete or masonry with a minimum density 600 kg/m³ ± 20 %

Rigid floors

- made of concrete or reinforced concrete with a minimum density 2200 kg/m³ ± 20 %

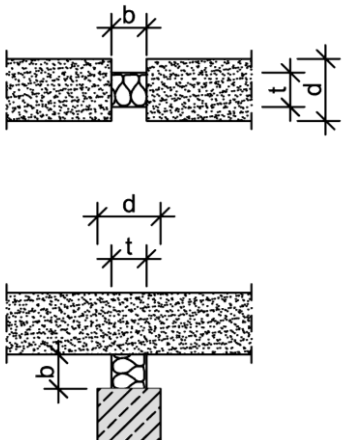
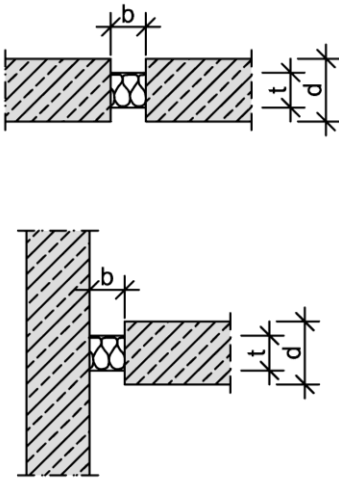
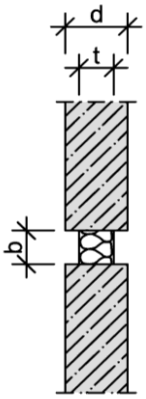
The building components shall be classified in accordance with EN 13501 2 for the corresponding fire resistance period.

2.2 Application

According to the schematic representation of table 2, the joint filling system PYRO-SAFE Fugenabdichtung is intended to be used

- in horizontal joints between fire-resistant floors or between fire-resistant walls abutting these floors (A)
- in vertical joints between fire-resistant walls (B)
- in horizontal joints in fire-resistant walls (C).

Table 2

Application (A)	Application (B)	Application (C)
		
EI 120 - H - X - B – 20 to 100	EI 120 - V - X - B – 20 to 100	EI 120 - T - X - B – 20 to 100

The joint filling system may be installed on any position within the joint.

Legend:

	joint sealing	d	≥ 180 mm
	wall	b	20 – 100 mm
	floor	t	100 mm

Joint filling system PYRO-SAFE Fugenabdichtung	Annex **B1**
Resistance to fire of the joint filling system - Information on the building components, overview of the applications and classification -	

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2.3 Description of the tested application

The joints in which the sealing elements are installed are to be cleaned of any contamination (e. g. loose debris, dirt or remains of installation foams).

The mineral fibre boards ProRox SL 970^{D} shall be coated one-side with PYRO-SAFE FLAMMOPLAST KS 1.

The reveals of the joint shall be coated with PYRO-SAFE FLAMMOPLAST KS 1 in the installation area of the mineral fibre boards.

The mineral fibre boards ProRox SL 970^{D} shall be cut into strips according to the joint width. The cutting edges of the mineral fibre boards shall be coated with PYRO-SAFE FLAMMOPLAST KS 1. The strips shall be installed in two densely juxtaposed layers into the joint in such a way that the pre-coated sides of the mineral fibre boards are arranged to the reveals and the joint is completely and tightly sealed with a thickness of ≥ 100 mm.

All remaining gaps and joints, insofar as they exist, shall be tightly filled and sealed with loose mineral wool ProRox LF 970 and PYRO-SAFE FLAMMOPLAST KS 3 from both sides to a depth of at least 50 mm.

Finally the surfaces of the installed mineral fibre boards ProRox SL 970^{D} shall be coated with PYRO-SAFE FLAMMOPLAST KS 1 such that the thickness of the coating (dry layer thickness) is at least 1 mm.

In case of installing the joint filling system in ceilings, the reveals of the joint may be covered by a frame of 10 mm thick steal angles. Strips of non-combustible mineral fibre boards with a thickness of ≥ 10 mm and a density of ≥ 35 kg/m^3 shall be installed between the reveals and the frame.

The joint shall be installed completely as described above.

The ETA is issued under the assumption that the installation of the construction product is in accordance with the manufacturer's installation instructions.

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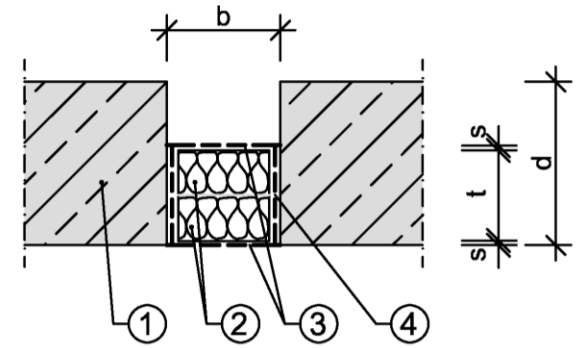
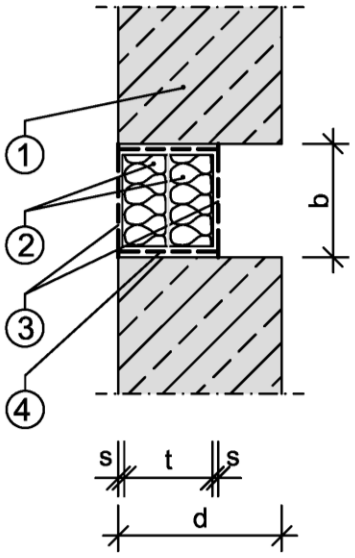


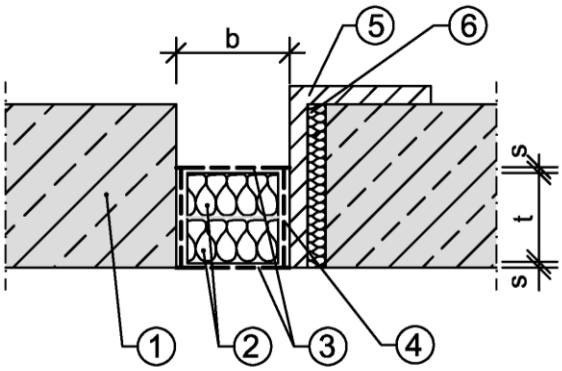


	Construction and dimensions of the joint			
①	Thickness of the wall or floor	d	[mm]	≥ 180
	Joint width	b	[mm]	20 - 100
②	Mineral fibre board "ProRox SL 970 ^{D}" thickness 50 mm density ≥ 120 kg/m³	t	[mm]	100
③	Coating with PYRO-SAFE FLAMMOPLAST KS 1	s	[mm]	≥ 1,0
④	Gluing with PYRO-SAFE FLAMMOPLAST KS 1 and if necessary plugging with loose wool "ProRox LF 970" and filling with the filler PYRO-SAFE FLAMMOPLAST KS 3			

Joint filling system PYRO-SAFE Fugenabdichtung

Resistance to fire of the joint filling system
- in floors and walls -

Annex **B3**



① Floor

② Strip of mineral fibre board "ProRox SL 970 ^{D}"
class A1, thickness 50 mm; density ≥ 120 kg/m³

③ Coating with PYRO-SAFE FLAMMOPLAST KS 1; dry film thickness s ≥ 1,0 mm

④ Gluing with PYRO-SAFE FLAMMOPLAST KS 1
and if necessary plugging with loose wool "ProRox LF 970" and
filling with the filler PYRO-SAFE FLAMMOPLAST KS 3

⑤ Steel angular frame

⑥ Strip of 100 mm thick mineral fibre board, density ≥ 35 kg/m³

Joint filling system PYRO-SAFE Fugenabdichtung	Annex **B4**
Resistance to fire of the joint filling system - in floors with covering of the reveals with a frame of 10 mm thick steal angles -	

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Standards

EN 13501-1	Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests
EN 13501-2	Fire classification of construction products and building elements - Part 2: Classification using data from resistance tests, excluding ventilation services
EN 1363-1	Fire resistance tests – Part 1: General requirements
EN 1366-4	Fire resistance tests for service installations – Part 4: Linear joint seals
EN 13823	Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item
EN 14303	Thermal insulation products for building equipment and industrial installations – Factory made mineral wool (MW) products – Specification
EN ISO 2811-1	Paints and varnishes - Determination of density - Part 1: Pycnometer method (ISO 2811-1:2016)
EN ISO 3251	Paints, varnishes and plastics - Determination of non-volatile-matter content (ISO 3251:2008)
EN ISO 3451-1	Plastics - Determination of ash - Part 1: General methods (ISO 3451-1:2008)
EN ISO 11925-2	Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2:2010)

Other documents

EAD 350141-00-1106	Fire Stopping and fire sealing products - Linear joint and gap seals
TR 024	Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products (Edition November 2006 Amended July 2009)
TR 034	General BWR 3 Checklist for EADs/ETAs - Dangerous substances (October 2015)

Joint filling system PYRO-SAFE Fugenabdichtung	Annex **C**
List of documents referred to	