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EUROPEAN TECHNICAL ASSESSMENT
No. ETA 24/0105 of 16/10/2024

One component Polyurethane Foam
Sika Boom®- 420 Fire

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Member of EOTA

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European Technical Assessment

ETA 24/0105 of 16/10/2024

General Part

Technical Assessment Body issuing the European Technical Assessment: FIRES, s.r.o., Osloboditeľov 282, 059 35 Batizovce, Slovak Republic	
Trade name of the construction product	One component Polyurethane Foam Sika Boom®-420 Fire
Product family to which the construction product belongs	Fire stopping and fire sealing products. Linear joint and gap seals The Product Area Code (PAC): 35
Manufacturer	Sika Services AG Tüffenwies 16 8064 Zürich Switzerland
Manufacturing plant(s)	"Factory 1" "Factory 2"
This European Technical Assessment contains	13 pages including 1 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	European Assessment Document (EAD) 350141-00-1106, September 2017 Fire stopping and fire sealing products. Linear joint and gap seals

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Specific parts

1. Technical description of the product

The element, polyurethane foam linear joints seals for walls and floors/ceilings type Sika Boom®-420 Fire is used to form linear gap seals where gaps are present in wall and floor constructions and in place of connection of wall and floor constructions.

Linear joints seals for walls and floors/ceilings are vertical and horizontal oriented and used with supporting construction with thicknesses 150 mm and 200 mm.

Sika Boom®-420 Fire is a one-part component Polyurethane foam, applied into or between the separating element/elements to a specified minimum depth with free foamed density (dry) 17 kg.m^{-3} (in case of application with gun) and 30 kg.m^{-3} (in case of application with nozzle applicator).

- Sika Boom®-420 Fire is applied with gun or nozzle applicator (combi application)

Polyurethane Foam Sika Boom®-420 Fire is supplied in canisters ranging in size:

- 500 ml – (65 x 195) mm
- 560 ml – (65 x 195) mm
- 600 ml – (65 x 240) mm
- 700 ml – (65 x 240) mm
- 750 ml – (65 x 300) mm
- 800 ml – (65 x 300) mm
- 810 ml – (65 x 300) mm

Polyurethane Foam Sika Boom®-420 Fire is supplied in two colour variants, Grey and Pink.

Auxiliary products, used with Foam Sika Boom®-420 Fire, linear joints seals, are:

- Mineral wool – bulk density ≥ 87 kg.m^{-3} or ≥ 100 kg.m^{-3}, depending on fire resistance classification
- Softwood with bulk density 440 – 470 kg.m^{-3}.

All mounting and fixing details shall be executed according to the manufacturer´s installation instructions.

The auxiliary products referred to in this ETA as a part of installation provisions or in the framework of determining performances (e.g. fire resistance) are not covered by this ETA and may not be CE-marked separately on the basis of this ETA.

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

2.1 Intended use

The intended use of Polyurethane Foam Sika Boom®-420 Fire is to reinstate the fire resistance performance of rigid wall constructions and rigid floor constructions at linear gaps/joints within those constructions.

1) The specific elements of construction that the Polyurethane Foam Sika Boom®-420 Fire may be used to provide a gap or joint seal in, are as follows:

   Rigid Floors: The floor must have a minimum thickness of 200 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 650 kg.m^{-3}.

   Rigid walls: The wall must have a minimum thickness of 150 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 650 kg.m^{-3}.

2) The supporting construction must be classified in accordance with EN 13501-2 for same or higher fire resistance period.

3) The Polyurethane Foam Sika Boom®-420 Fire may be used to provide a linear joint or gap seal with specific supporting constructions and substrates (for details see Annex A).

4) The maximum permitted joint/gap width for Polyurethane Foam Sika Boom®-420 Fire is 20 mm (for details see Annex A).

2.2 Use condition

The Polyurethane Foam Sika Boom®-420 Fire is intended for use at temperatures below 0 °C, but with no exposure to rain or UV radiation.

According to EAD 350141-00-1106, clause 2.1, products are categorized as Type Y_2. Since the requirements for Type Y_2 are met, also the requirements for Z_1, and Z_2 are fulfilled. (intended for use in internal conditions, excluding temperatures below 0°C, no exposure to frost or changing frost-thaw but permanent or alternating condensation).

Although it is acceptable for a linear joint seal to be intended for indoor applications only, the product may be subjected to more exposed conditions for a period during the construction process before the building envelope is closed. For this case provisions shall be made to protect temporarily exposed linear joint seal according to the ETA-holder's installation instructions.

2.4 Working life

The provisions made in this European Technical Assessment are based on an assumed working life of the Polyurethane Foam Sika Boom®-420 Fire of 10 years, provided the conditions laid down in the technical literature of the manufacturer relating to packaging, transport, storage, installation, use and repair are met.

When assessing the product, the intended use as foreseen by the manufacturer shall be considered. The real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for works. The real working life of product incorporated in specific works depends on the environmental condition to which that works is subject, as well as on the particular conditions of the design, execution, use and maintenance of that works. Therefore, it cannot be excluded that in certain cases the real life of the product may also be shorter than referred to above.

The indications given as to the working life of the construction product cannot be interpreted as a guarantee neither given by the product manufacturer or his representative nor by the Technical Assessment Body, but are regarded only as a means for expressing the expected economically reasonable working life of the product.

2.5. General aspects

It is assumed that damages to the linear joint and gap seal are repaired accordingly and replacement of components during maintenance/repair will be undertaken using materials specified by the ETA.

The European Technical Assessment is issued for the product on the basis of agreed data/information, deposited by the Technical Assessment Body FIRES, s.r.o. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to the Technical Assessment Body FIRES, s.r.o. before the changes are introduced. The Technical Assessment Body FIRES, s.r.o. will decide whether or not such changes affect the European Technical Assessment and consequently the validity of the CE marking on the basis of the European Technical Assessment and if so whether further assessment or alterations to the European Technical Assessment, shall be necessary.

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

3.1 Essential characteristics of the fire protective boards

Table 3: Essential characteristics of the fire protective boards

Product: One component Polyurethane Foam Sika Boom®-420 Fire

Basic requirement for construction work	Essential characteristic	Performance
BWR 2: Safety in case of fire	Reaction to fire	Clause 3.1.1 of this ETA Class: E
	Resistance to fire	Clause 3.1.2 of this ETA
BWR 3: Hygiene, health and the environment	Content, emission and/or release of dangerous substances	Clause 3.1.3 of this ETA Category IA2, S/W2 Declaration of Manufacturer
	Air permeability (material property)	No performance determined
	Water permeability (material property)	No performance determined
BWR 4: Safety and accessibility in use	Mechanical resistance and stability	No performance determined
	Resistance to impact /movement	No performance determined
	Movement capability	No performance determined
	Adhesion	No performance determined
	Durability	Clause 3.1.9 of this ETA Y_2
	Cycling of perimeter seals for curtain walls	No performance determined
	Compression set	No performance determined
	Linear expansion on setting	No performance determined
BWR 5: Protection against noise	Thermal resistance Water vapour transmission coefficient	No performance assessed
BWR 6: Energy economy and heat retention	Thermal properties	No performance assessed
	Water vapour permeability	No performance assessed

3.1.1 Safety in case of fire (BWR 2): Reaction to fire

The one component Polyurethane Foam Sika Boom®-420 Fire was tested as required by EAD 350141-00-1106, September 2017 in accordance with EN ISO 11925-2: 2010-11 and classified according to EN 13501-1: 2007+A1: 2009. Reaction to fire classification of one component Polyurethane Foam Sika Boom®-420 Fire is **E** (valid also acc. to EN 13501-1: 2018). This classification is valid for all end use conditions.

Requirements in clause 2.2.2.1 of EAD 350142-00-1106, September 2017 are met.

3.1.2 Safety in case of fire (BWR 2): Resistance to fire

The one component Polyurethane Foam Sika Boom®-420 Fire was tested as required by EAD 350141-00-1106, September 2017 in accordance with EN 1366-4: 2006+A1: 2010 and EN 1366-4: 2021. Based upon the test results and the field of direct application specified within EN 1366-4: 2021, the one component Polyurethane Foam Sika Boom®-420 Fire has been classified in accordance with EN 13501-2: 2016, as given in Annex A.

The one component Polyurethane Foam Sika Boom®-420 Fire seal may only be used in the elements of construction described in Annex A and against the substrates described in Annex A.

Provisions shall be taken such that floor joint seals cannot be stepped on e.g. by covering with wire mesh or floor finishes.

3.1.3 Hygiene, health and the environment (BWR 3): Content, emission and/or release of dangerous substances

The applicant has presented a declaration that one component Polyurethane Foam Sika Boom®-420 Fire does not contain any substance of high concern with regards to REACH Regulations (EC) No 1907/2006 and the CLP regulation (EC) No 1272/2008 (the European GHS regulation) and are compliant with the requirements reference to https://ec.europa.eu/environment/chemicals/reach/legislation_en.htm.

Confirmation has further been declared that:

- All substances contained in products are
  - registered by upstream suppliers, and/or
  - registered by manufacturer, and/or
  - excluded from the regulation, and/or
  - exempted from the registration.
- One component Polyurethane Foam Sika Boom®-420 Fire does not contain 0.1% (w/w) or more of any substance listed in the most recent Candidate List of substances of very high concern for Authorisation (Article 59), published by the European Chemicals Agency ECHA on the 17. 01.2023.

  The duty is respected to follow the development of new entries of the list and to duly inform customers, should it occur for a substance contained within the product.
- One component Polyurethane Foam Sika Boom®-420 Fire does not contain 0.1% (w/w) or more of any substance listed in the most recent version of the Authorisation List (annex XIV of the REACH regulation) published by the European Chemicals Agency ECHA on the 08.04.2022.
- One component Polyurethane Foam Sika Boom®-420 Fire contain no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB).
- Their hazard classification is compliant with the requirements of the CLP regulation with all adaptions to the technical progress (ATP) up to the 18th ATP of 16.02.2022.
- For one of their components (Diphenylmethane diisocyanate) a restriction (requiring safety measures) is part of the annex XVII of the REACH regulation. Its requirements are fully implemented.
- Both Safety Data Sheets are compliant with the requirements of the annex 2 of REACH regulation, updated by the regulation (EU) 2020/878 (of 18.06.2020). They are applied correctly in order to fulfil the communication duties towards the customers.

All dangerous chemical substances are below the classification limits of 67/548/EEC.

In addition to the specific clauses relating to dangerous substances contained in this European Technical Assessment, 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 Regulation, these requirements need also to be complied with, when and where they apply.

3.1.4 Hygiene, health and the environment (BWR 3): Air permeability (material property)

No performance determined

3.1.5 Hygiene, health and the environment (BWR 3): Water permeability (material property)

No performance determined

3.1.6 Safety and accessibility in use (BWR 4): Mechanical resistance and stability

No performance determined

3.1.7 Safety and accessibility in use (BWR 4): Resistance to impact /movement

No performance determined

3.1.8 Safety and accessibility in use (BWR 4): Movement capability

No performance determined

3.1.9 Safety and accessibility in use (BWR 4): Adhesion

No performance determined

3.1.10 Safety and accessibility in use (BWR 4): Durability

One component Polyurethane Foam Sika Boom®-420 Fire has been tested in accordance with EOTA Technical Report - TR024 Edition November 2009, for the type Y_2 use category specified in EAD 350141-00-1106, and the results of the tests have demonstrated suitability for penetration seals intended for use at temperatures below 0°C, but with no exposure to rain or UV radiation.

Since the requirements for Type Y_2 are met, also the requirements for Z_1, and Z_2 are fulfilled.

3.1.11 Safety and accessibility in use (BWR 4): Cycling of perimeter seals for curtain walls

No performance determined

3.1.12 Safety and accessibility in use (BWR 4): Compression set

No performance determined

3.1.13 Safety and accessibility in use (BWR 4): Linear expansion on setting

No performance determined

3.1.14 Protection against noise (BWR 5): Thermal resistance Water vapour transmission coefficient

No performance determined

3.1.15 Energy economy and heat retention (BWR 6): Thermal properties

No performance determined

3.1.16 Energy economy and heat retention (BWR 6): Water vapour permeability

No performance determined

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

According to the Decision 1999/454/EC[1], amended by Decision 2001/596/EC[2] of the European Commission the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No. 305/2011) given in the following tables apply:

Product(s)	Intended use(s)	Level(s) or Class(es)	System(s) of assessment and verification of constancy of performance (1)
Fire protective products	For fire compartmentation and/or fire protection or fire performance	Any	1
(1) System 1: see Regulation (EU) No 568/2014			

According to the Decision 1999/454/EC, amended by Decision 2001/596/EC of the European Commission the system(s) of assessment and verification of constancy of performance, with regard to reaction to fire:

Product(s)	Intended use(s)	Level(s) or class(es)	System(s)
Fire protective products	For uses subject to regulations on reaction to fire	A1*, A2*, B*, C*	1
		A1**, A2**, B**, C**, D, E	3
		(A1 to E)***, NPD****	4
* Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material) ** Products/materials not covered by footnote (*) *** Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of class A1 according to Commision Decision 96/603/EC, as amended) **** No Performance Declared in accordance with Regulation (EU) No. 305/2011, Article 6(f)			

[1] Official Journal of the European Communities no. L 178, 14. 07. 1999
[2] Official Journal of the European Communities no. L 209, 02. 08. 2001

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 by the Technical Assessment Body FIRES, s.r.o.

The notified product certification body shall carry out the continuous surveillance, assessment and evaluation of factory production control at least twice a year.

Issued in Batizovce on 16. 10. 2024 by FIRES, s.r.o.

Approved by:

Ing. Peter Rákoci

Head of the Technical Assessment Body

Elaborated by:

Ing. Samuel Skokan

Assessor of the Technical Assessment Body

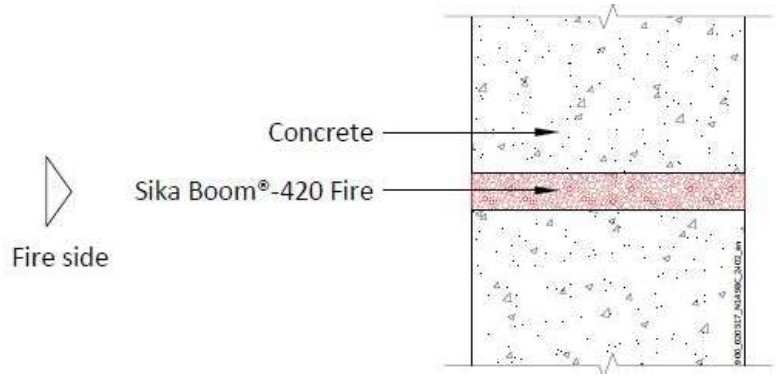
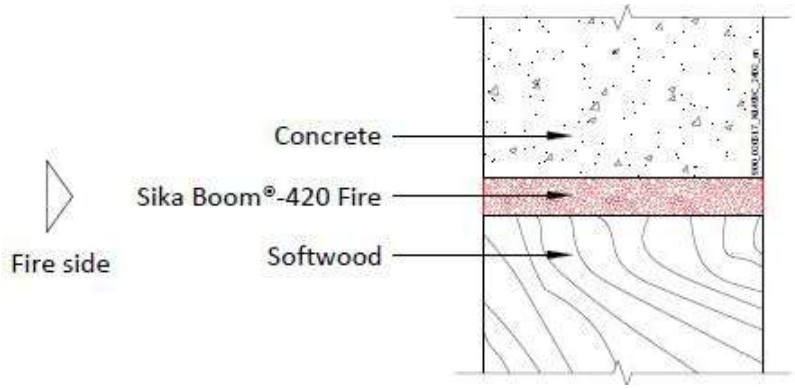
Annex A - Product performance: fire resistance

Classification of fire resistance No. 13 (acc. to ER 24/0105) provides a considered opinion regarding the use of different applicator types to install the foam Linear Joint Sealing products Sika Boom®-420 Fire. The report compares the “gun” applicator to the “nozzle” applicator.

The results from fire resistance tests of comparison samples described in reports No. 1., 2. and 13 (acc. to ER 24/0105) show that the nozzle applied specimens achieved a small increase in overall Insulation performance than the gun applied specimens. It can therefore be concluded that the alternative “Nozzle Applicator” installation does not have any detrimental effect on the integrity performance of the seal.

Wall joints

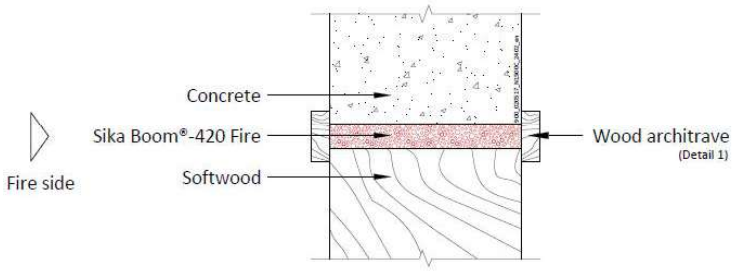
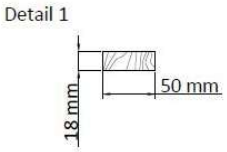
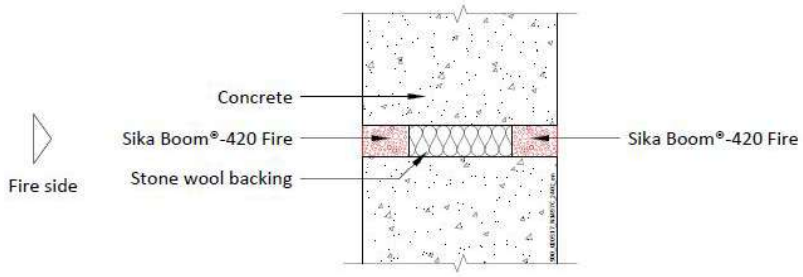
Sika Boom®-420 Fire **(gun or nozzle applicator application (combi application))**
Linear Joint Seals in ≥ 150 mm thick rigid walls

Element	Applicator type	Maximum width of opening [mm]	Seal Depth [mm]	Classification
				
Sika Boom®-420 Fire	gun / nozzle	10	150	**EI 180-V-X-F-W 00 to W 10** [1]
		20	150	**EI 60-V-X-F-W 00 to W 20** [1]
		20	150	**EI 60-T-X-F-W 00 to W 20** [2]
				
Sika Boom®-420 Fire AAC - Softwood	gun / nozzle	20	150	**EI 120-V-X-F-W 00 to W 20** [1]
		20	150	**EI 120-T-X-F-W 00 to W 20** [2]

[1] Vertical oriented linear joint in vertical construction
[2] Horizontal oriented linear joint in vertical construction

Wall joints

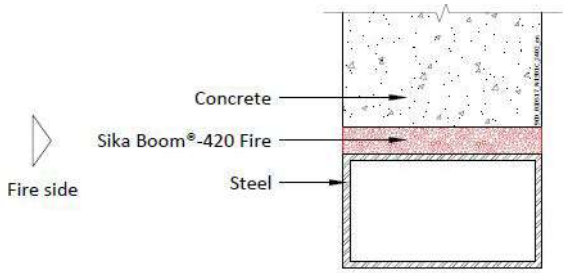
Sika Boom®-420 Fire **(gun or nozzle applicator application (combi application))**
Linear Joint Seals in ≥ 150 mm thick rigid walls

Element	Applicator type	Maximum width of opening [mm]	Seal Depth [mm]	Classification
 				
Sika Boom®-420 Fire AAC - Softwood The joint of the PU-Foam is covered by Softwood (18 x 50) mm (width x depth) from both sides	gun / nozzle	20	150	**EI 90-V-X-F-W 00 to W 20** [1)]
		20	150	**EI 120-T-X-F-W 00 to W 20** [2)]
				
Mineral rock wool of bulk density ≥ 87 kg/m³ in the middle of the depth with depth 100 mm + PU-Foam (Sika Boom®-420 Fire) depth 25 mm from both sides	gun / nozzle	20	150	**EI 240-V-X-F-W 00 to W 20** [1)]
Mineral rock wool of bulk density ≥ 100 kg/m³ in the middle of the depth with depth 50 mm + PU-Foam (Sika Boom®-420 Fire) depth 50 mm from both sides	gun / nozzle	20	150	**EI 180-V-X-F-W 00 to W 20** [1)]

[1)] Vertical oriented linear joint in vertical construction
[2)] Horizontal oriented linear joint in vertical construction

Wall joints

Sika Boom®-420 Fire **(gun or nozzle applicator application (combi application))**
Linear Joint Seals in ≥ 150 mm thick rigid walls

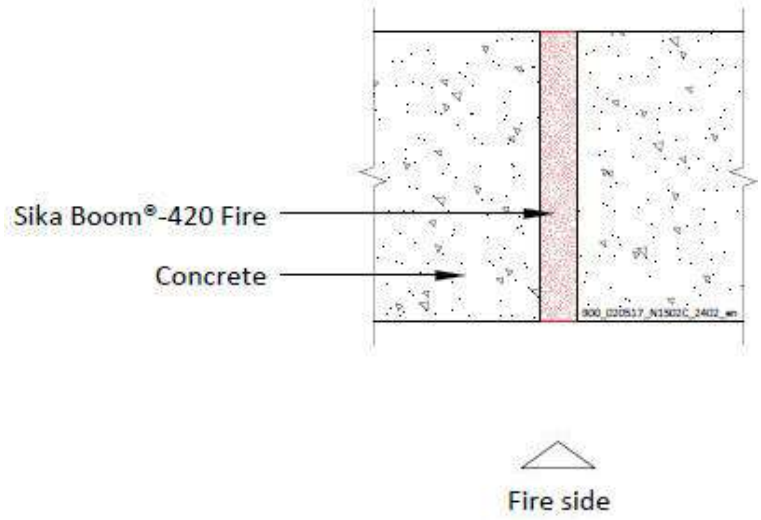
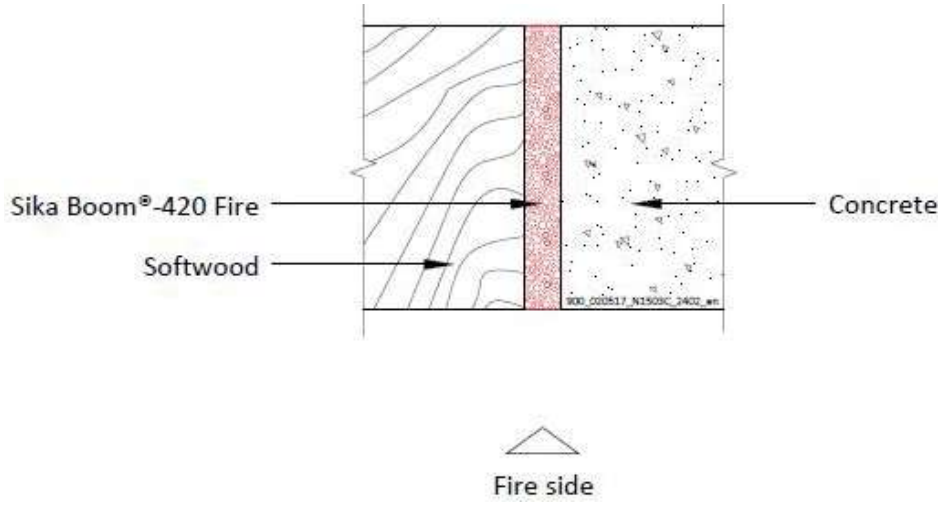
Element	Applicator type	Maximum width of opening [mm]	Seal Depth [mm]	Classification
				
Sika Boom®-420 Fire ACC – steel	gun / nozzle	20	150	**EI 30-V-X-F-W 00 to W 20** [1)]
		20		**E 45-V-X-F-W 00 to W 20** [1)]
		20		**EI 45-T-X-F-W 00 to W 20** [2)]
		20		**E 60-T-X-F-W 00 to W 20** [2)]

This classification is valid according to EN 1366-4 for the following end use applications:

Construction	The construction of the linear joint seal must not change from that tested; Depth of linear seal may be increased;
Orientation of linear joint	Vertical oriented linear joint in vertical construction [1)]; Horizontal oriented linear joint in vertical construction [2)];
Supporting construction	Results are valid for low density rigid wall construction, blockwork and masonry separating elements of a thickness and density equal to or greater than (650 ± 200) kg.m^{-3}; Results obtained with timber standard supporting construction apply to timber separating elements of a thickness and density equal to or greater than that tested. Results obtained with steel angle standard supporting construction as described above separating element are covering constructions made of metals with a melting point higher than 1000°C.
Seal position	Test results are valid only for the position in which the seal was tested, except that were the linear joint seal was fitted flush to the supporting construction and is exposed to fire.

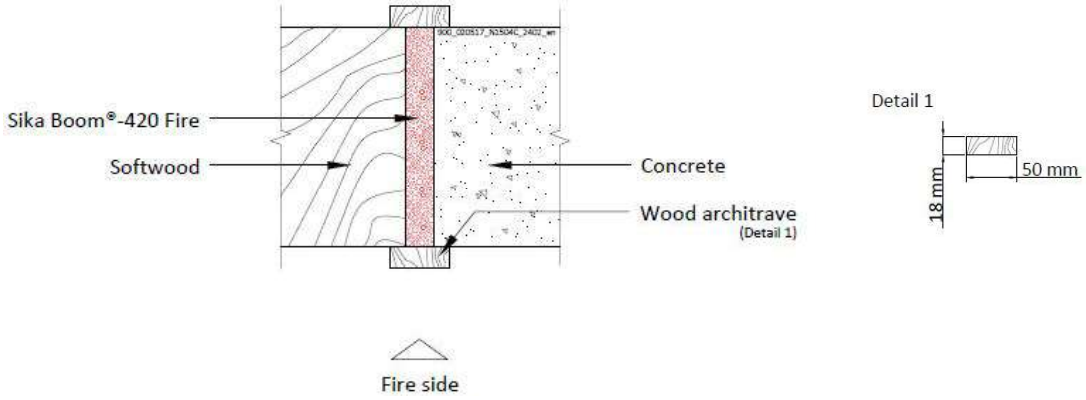
Floor joints

Sika Boom®-420 Fire **(gun or nozzle applicator application (combi application))**
Linear Joint Seals in ≥ 200 mm thick rigid walls

Element	Applicator type	Maximum width of opening [mm]	Seal Depth [mm]	Classification
				
Sika Boom®-420 Fire	gun / nozzle	10	200	**EI 120-H-X-F-W 00 to W 10**
	nozzle	20	200	**EI 120-H-X-F-W 00 to W 20**
	gun / nozzle	20	200	**EI 90-H-X-F-W 00 to W 20**
				
Sika Boom®-420 Fire ACC - Softwood	gun / nozzle	20	200	**EI 120-H-X-F-W 00 to W 20**

Floor joints

Sika Boom®-420 Fire **(gun or nozzle applicator application (combi application))**
Linear Joint Seals in ≥ 200 mm thick rigid walls

Element	Applicator type	Maximum width of opening [mm]	Seal Depth [mm]	Classification
				
Sika Boom®-420 Fire ACC - Softwood The joint of the is covered by Softwood (18 x 50) mm (width x depth) from both sides	gun / nozzle	20	200	**EI 120-H-X-F-W 00 to W 20**

This classification is valid according to EN 1366-4 for the following end use applications:

Construction	The construction of the linear joint seal must not change from that tested; Depth of linear seal may be increased;
Orientation of linear joint	Linear joint in a horizontal construction; Horizontal oriented linear joint in a vertical construction;
Supporting construction	Results are valid for low density rigid wall construction, blockwork and masonry separating elements of a thickness and density equal to or greater than (650 ± 200) kg.m^{-3}; Results obtained with timber standard supporting construction apply to timber separating elements of a thickness and density equal to or greater than that tested. Results obtained with steel angle standard supporting construction as described above separating element are covering constructions made of metals with a melting point higher than 1000°C.
Seal position	Test results are valid only for the position in which the seal was tested, except that were the linear joint seal was fitted flush to the supporting construction and is exposed to fire. In case the linear seal was fitted flush to the supporting construction and is exposed to fire, the seal can be installed at any position in the wall / floor.