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European Technical Assessment

ETA-23/0341 of 03/07/2023

English translation prepared by CSTB - Original version in French language

General Part

Nom commercial du kit *Trade name of the kit*	Sika Firestop Profilé HD
Famille de produit *Product family*	**Produits de compartimentage et de calfeutrement au feu : Joints d'étanchéité linéaires** ***Fire Stopping and Sealing Product : Linear Joint and Gap Seals***
Titulaire *Manufacturer*	Sika France 84 rue Edouard Vaillant 93350 Le Bourget
Usine de fabrication e *Manufacturing plants*	Plant 38
Cette evaluation contient *This Assessment contains*	9 pages incluant 5 pages d'annexes qui font partie intégrante de cette évaluation. *9 pages including 5 pages of annexes which form an integral part of this assessment.*
Base de l'ETE *Basis of ETA*	DEE 350141-00-1106 *EAD 350141-00-1106*

Specific Part

1 Technical description of the product

The Sika Firestop Profilé HD is a flexible and elastic seal made of intumescent polyurethane foam to be used as a joint seal between fire-resistant separating elements.

2 Specification of the intended use

2.1 Intended use

The intended use of the Sika Firestop Profilé HD is to maintain the fire resistance of separating building elements where they are separated by joints.

The specific separating elements in which Sika Firestop Profilé HD may be used as follows:

Rigid floors: For joints with a movement capacity of 7,5% **without** lateral displacement of the joint induced by the mechanical action (static). The floors must have a minimum thickness of 150 mm and must be made of concrete, reinforced concrete or masonry with a minimum density of 2200 kg/m^3.

For the joints with a movement capacity of 20% and **with** lateral displacement of joint induced by the mechanical action (dynamic). The floors must have a minimum thickness of 200 mm and must be made of concrete, reinforced concrete and masonry, with a minimum density of 2200 kg/m^3.

Rigid walls: For the joints with a movement capacity of 20% and **with** lateral displacement of joint induced by the mechanical action (dynamic). The walls must have a minimum thickness of 200 mm and must be made of reinforced concrete with a minimum density of 2200 kg/m^3.

The Sika Firestop Profilé HD is not intended for load transmission.

The Sika Firestop Profilé HD can be used to form a linear joint with a maximum joint width from 20 mm to 48 mm **without** a mechanically induced lateral movement in the joint, or from 16 mm to 80 mm width **with** a mechanically induced lateral movement in the joint.

The performances given in Section 3 are only valid if the intumescent seal is used in compliance with:

- The manufacturer's instructions according to Annex A.
- The specifications and conditions given in Annex B.

2.2 Type of use

The Sika Firestop Profilé HD can be used for the following environmental conditions:

Type of use	**Environmental conditions**
Type Z_2	Intended for use in internal conditions with humidity lower than 85% RH excluding temperature below 0°C
Type Z_1	Intended for use in internal conditions with humidity equal to or higher than 85% RH excluding temperatures below 0°C (no exposure to frost or changing frezze-thaw but permanent or alternating condensation)

2.3 Assumed working life

Provisions made in this European Technical Assessment are based on an assumed intended working life of 10 years, provided that the assembled product is subjected to appropriate use and maintenance in accordance with this ETA.

The real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for works[1].

Indications given regarding the working life cannot be interpreted as a guarantee given by the manufacturer or his representatives nor by EOTA nor by the Technical Assessment Body issuing this ETA based on EAD 35350141-00-1106, but are regarded only as a means for choosing the appropriate products in relation to the expected economically reasonable working life of the works. They are also not appropriate to serve as a basis to deliver performance of the product for essential characteristics related to the basic requirement 7 for construction works.

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

3.1 Safety in case of fire (BWR 2)

Essential characteristic	**Performance**
Reaction to fire	Class according to EN 13501-1: E
Resistance to fire	Class according to EN 13501-2: See Annex B

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	**Performance**
Content, emission and/or release of dangerous substances	The manufacturer has presented a written declaration precising that the product and/or the components of the product do not contain any substances that are classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No 1272/2008 and listed in the “indicative list on dangerous substances” of the SGDS[2].
Air permeability	No performance assessed
Water permeability	No performance assessed

3.3 Safety and accessibility in use (BWR 4)

Essential characteristic	**Performance**
Mechanical resistance and stability	No performance assessed
Resistance to impact/movement	No performance assessed
Adhesion	No performance assessed
Durability	Z_1
Movement capability	No performance assessed

[1] The real working life of a product incorporated in a specific type of works depends on the environmental conditions to which that type of works is subjected, as well as on the particular conditions of the design, execution, use and maintenance of that type of works. Therefore, it cannot be excluded that in certain cases, the real working life of the product may also be shorter than referred to above.

[2] In addition to the specific conditions relative to content, emission and/or release of dangerous substances in this ETA, other requirements for products with the same intended use may exist (for example, transposition of European legislation and national laws, regulations and administrative provisions). In order to address the provisions of the Construction Products Regulation, these requirements must also be respected, when and where they apply.

Essential characteristic	**Performance**
Cycling of perimeter seals for curtain walls	No performance assessed
Compression set	No performance assessed
Linear expansion on setting	No performance assessed

3.4 Protection against noise

Essential characteristic	**Performance**
Airborne sound insulation	No performance assessed

3.5 Energy economy and heat retention (BWR 6)

Essential characteristic	**Performance**		
Thermal properties[3]	Thermal conductivity λ	W/m·K	0,054
	Thermal resistance R	(m²·K/W)	1,06
Water vapour permeability	No performance assessed		

4 Assessment and verification of constancy of performance (AVCP)

According to the Decision 1999/454/EC of the European Commission[4], the system of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following Table applies.

Product	**Intended use**	**Level or class**	**System**
Fire stopping and fire sealing products	For fire compartmentation and/or fire protection or fire performance	any	1

5 Technical details necessary for the implementation of the AVCP system, as planned in the relevant EAD

Technical details necessary for the implementation of the Assessment and verification of constancy of performance (AVCP) system are laid down in the control plan deposited at Centre Scientifique et Technique du Bâtiment.

The control plan including confidential informations, it is not included in the published part of this ETA.

The manufacturer shall, on the basis of a contract, involve a notified body approved in the field of fire stopping and sealing products for issuing the certificate of conformity CE based on the control plan.

The Notified Body shall visit the factory at least twice a year for surveillance of the manufacturer.

The original French version is signed by

Anca Cronopol

Head of the Structure, Masonry, Partition Division

[3] At ambient temperature (24,7°C)

[4] Official Journal of the European Communities L 178/52 of 14.7.1999

Annex A: Product description

The Sika Firestop Profilé HD is an intumescent fireproof for the sealing of expansion joints. It is wrapped with high density polyethylene (HDPE) foil. It can be used on wall or slab configurations (concrete support). It is resistant to hydrocarbon making it suitable for car parkings.

Key benefits

- High elasticity
- Easy to install (no tools, no glue, no putty)
- Wide range of use
- Excellent mechanical resistance.

Implemetation

The Sika Firestop Profilé HD can be installed under rain and dust conditions.

The seal is installed by positioning and manual compression.

- Measure the space to be filled in order to identify the adapted Sika Firestop Profilé HD size (see Table 1).
- Press the seal into place to the required position.
- The seals are placed end-to-end without any special connection.

Reference	Diameter (mm)	Opening (mm)	Packaging
Sika Firestop Profilé HD 20	27	16 to 24	4 × 10 m
Sika Firestop Profilé HD 30	40	24 to 36	2 × 10 m
Sika Firestop Profilé HD 40	53	32 to 48	4 × 10 m
Sika Firestop Profilé HD 50	66	40 to 60	30 × 1,2 m
Sika Firestop Profilé HD 60	80	48 to 72	20 × 1,2 m

Table 1: Sika Firestop Profilé HD sizes

Special features

- Soft foam base.
- Grey color.
- Approximate density: 0.16 kg/l.
- Displacement capacity: ± 20%.

Safety measures

- Refer to the product safety shet.
- Observe the usual rules of work hygiene.
- Wear appropriate PPE: safety, clothing, gloves and glasses.

Qualification

The Sika Firestop Profilé HD has a resistance to fire classification from EI 90 to EI 180 and up to E240 according to EN 1366-4 (see Annex B).

A.1 Minimum density of supporting construction in which Sika Firestop Profilé HD is used as a linear joint seal

Supporting construction	**Minimum density**
Rigid floors	≥ 2200 kg/m^3
Rigid walls	≥ 2200 kg/m^3

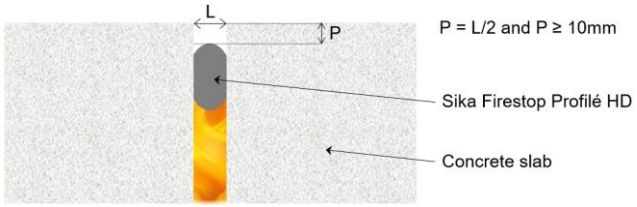
A.2 Minimum thickness of Sika Firestop Profilé HD

Supporting construction	**Minimum thickness**
Rigid floors	≥ 150 mm **without** induced lateral movement
	≥ 200 mm **with** induced lateral movement
Rigid walls	≥ 200 mm **with** induced lateral movement

A.3 Movement capability of different Sika Firestop Profilé HD

Movement capability	**Linear joint**
± 20%	**Sika Firestop Profilé HD:** 16 (Ø21mm), 20 (Ø26mm), 30 (Ø39mm), 40 (Ø53mm), 50 (Ø65mm), 60 (Ø80mm), 80 (Ø104mm)

A.4 Installation instructions

Linear joint	**Position**
Sika Firestop Profilé HD: 16 (Ø21mm), 20 (Ø26mm), 30 (Ø39mm), 40 (Ø53mm), 50 (Ø65mm), 60 (Ø80mm), 80 (Ø104mm)	

A.5 Dimensions of Sika Firestop Profilé HD

	L [mm]	Minimum diameter ϕ_{min} [1)] [mm]
		Sika Firestop Profilé HD
Joint width in a static floor (without induced lateral movement)	20	24
	30	36
	40	48
	48	57
Joint width in a dynamic floor (with induced lateral movement)	16	21
	20	26
	30	39
	40	53
	50	65
	60	80
	80	104
Joint width in a dynamic wall (with induced movement)	16	21
	20	26
	30	39
	40	53
	50	65
	60	80

[1)] The joint seal minimum diameter is calculated depending on the compression ratio fixed in Table 2 to Table 4.

A.6 Applications of Sika Firestop Profilé HD

The Sika Firestop Profilé HD can be used as a linear joint of horizontal elements according to Figure 1.

- in a horizontal construction between fire-resistant separating floors (Application A).
- in a horizontal wall abutting a floor, ceiling or roof (Application D).

Application A[1)] **Application D[1)]**

[1)] Field of application A and D is defined in §13.1 of EN 1366-4.

Figure 1: Application of Sika Firestop Profilé HD as linear joint seal of horizontal concrete floors

The Sika Firestop Profilé HD can be used as a linear joint seal of vertical elements according to Figure 2.

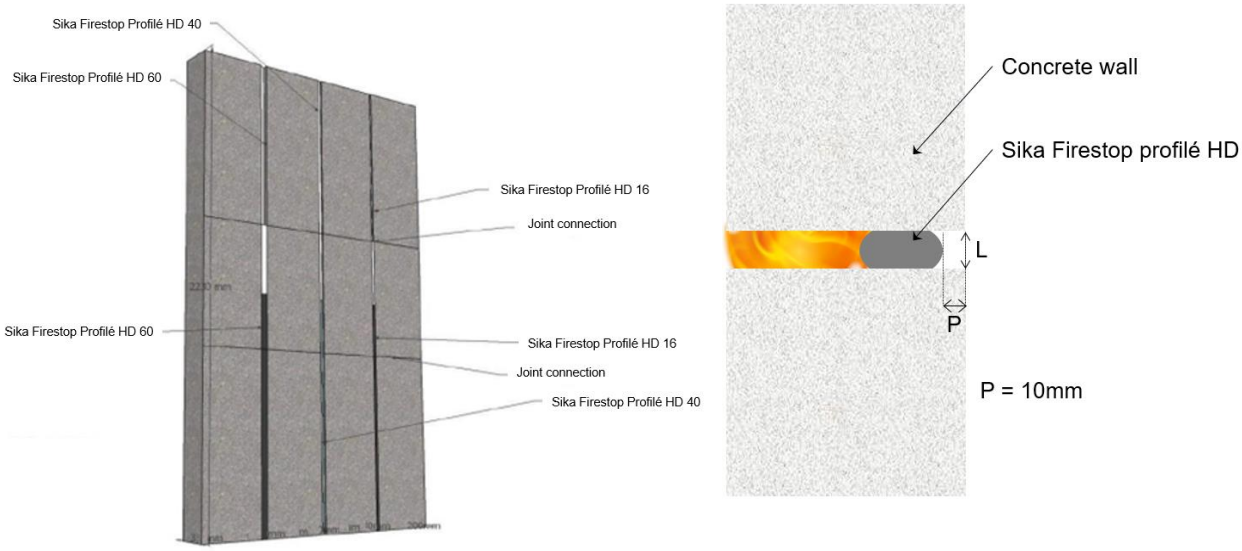


Figure 2: Application of Sika Firestop Profilé HD as linear joint seal of vertical concrete walls

Annex B: Resistance to fire classification

The Sika Firestop Profilé HD can be used as a linear joint seal in or between the following separating building elements.

The joint filling could be arranged only by one product, respecting the compression ratio indicated in Table 3 and Table 4.

Connections of the joint seals are possible if they are made edge to edge with compression of the two pieces.

The classification in Table 2, Table 3 and Table 4 is only valid for the following conditions:

- Respect the arrangement and corresponding installation parameters;
- Preserve the density of sealing elements;
- Maintain the mastic and its thickness when it applies;
- Respect the compression ratio of the sealing joint.

Overview of the fire-resistant designs for the arrangement in rigid floor constructions with a minimum thickness of 150 mm with a minimum density of 2200 kg/m³ (Application A and D according to Figure 1)							
Element thickness	**Joint width L**	**Arrangement**	**Sealing element**		**Wrapping with HDPE**	**Compression ratio**	**Classification**
			Diameter	**Position P**			
[mm]	**[mm]**		**[mm]**			**[%]**	
150	20 - 48	**Sika firestop seal**: 20 or 30 or 40 or 48	ϕ24 or ϕ36 or ϕ48 or ϕ57	$\frac{\phi_{joint\ seal}}{2}$	With or without	16,67	EI 90-H-X-F-W 20 to 48* E 180-H-X-F-W 20 to 48*

* H: Horizontal construction element, X: no induced movement, F: joint connection manufactured on jobsite, W: joint width (in mm)

Table 2: Joints in 1000 mm length rigid concrete floors without lateral displacement (static)

Overview of the fire-resistant designs for the arrangement in rigid floor constructions with a minimum thickness of 200 mm with a minimum density of 2200 kg/m³ (Application A and D according to Figure 1)							
Element thickness	**Joint width L**	**Arrangement**	**Sealing element**		**Wrapping with HDPE**	**Compression ratio**	**Classification**
			Diameter	**Position P**			
[mm]	**[mm]**		**[mm]**			**[%]**	
200	16 - 40	**Sika firestop seal**: 16, 20, 30 or 40	ϕ21 or ϕ26 or ϕ39 or ϕ53	L/2	With or without	24	EI 180 – H – M20 – F – W 16 to 40* E 240 – H – M20 – F – W 16 to 40*
200	40 - 80	**Sika firestop seal**: 40, 50, 60 or 80	ϕ53 or ϕ65 or ϕ80 or ϕ104	L/2	With or without	24	EI 120 – H – M20 – F – W 40 to 80* E 120 – H – M20 – F – W 40 to 80*

* H: Horizontal construction element, M: induced displacement (in %), F: joint connection manufactured on jobsite, W: joint width (in mm)

Table 3: Joints in 1000 mm length rigid concrete floors with lateral displacement (dynamic)

Overview of the fire-resistant designs for the arrangement in rigid concrete wall constructions with a minimum thickness of 200 mm with a minimum density of 2200 kg/m³ (Application according to Figure 2)							
Element thickness	**Joint width L**	**Arrangement**	**Diameter**	**Position P**	**Wrapping with HDPE**	**Compression ratio**	**Classification**
[mm]	**[mm]**		**[mm]**	**[mm]**		**[%]**	
200	16 - 40	**Sika firestop seal**: 16, 20, 30 or 40	ϕ21 or ϕ26 or ϕ39 or ϕ53	10	With or without	24	EI 180 – V – M20 – F – W16 to 40* E 240 – V – M20 – F – W16 to 40*
200	40 - 80	**Sika firestop seal**: 40, 50, 60 or 80	ϕ53 or ϕ65 or ϕ80 or ϕ ϕ104	10	With or without	25	EI 180 – V – M20 – F – W40 to 60* E 180 – V – M20 – F – W40 to 60*

* V: Vertical construction element, M: induced displacement (in %), F: joint connection manufactured on jobsite, W: joint width (in mm)

Table 4: Joints in 1000 mm length rigid concrete walls with lateral displacement (dynamic)