

# LEISTUNGSERKLÄRUNG

gemäß Anhang III der Verordnung (EU) Nr. 305/2011 (Bauprodukteverordnung)

## Silikon-Brandschutzfugenspray Hilti CFS-SP SIL

Nr. Hilti CFS-SP SIL

**1. Eindeutiger Kenncode des Produkttyps:**

Silikon-Brandschutzfugenspray Hilti CFS-SP SIL

**2. Vorgesehener Verwendungszweck:**

Brandsperre und Abdichtung für lineare Fugen und Zwischenräume: Brandsperre von Vorhangfassaden, siehe ETA-20/1235 (20.12.2020)

Abdichtung von linearen Fugen und Zwischenräumen: Brandsperre von Vorhangfassaden

**3. Hersteller:**

Hilti Aktiengesellschaft, Feldkircherstrasse 100, 9494 Schaan, Fürstentum Liechtenstein

**4. AVCP-System:**

System 1

**5. Europäisches Bewertungsdokument:**

EAD 350141-00-1106

**Europäische Technische Bewertung:**

ETA-20/1235 (20.12.2020)

**Technische Bewertungsstelle:**

ETA-DK

**Notifizierte Stelle(n):**

MPA Braunschweig, Nr. 0761

**6. Erklärte Leistung:**

Wesentliche Merkmale	Erklärte Leistung / Harmonisierte technische Angaben
Brandverhalten	Klasse E gemäß EN 13501-1
Feuerwiderstand	Feuerwiderstand und Anwendungsgebiet gemäß EN 13501-2. Siehe Anhang
Gefahrstoffe	Siehe Anhang
Lärmschutz	Geprüft gemäß EN ISO 10140 und EN ISO 717-1. Siehe Anhang
Mechanische Festigkeit und Standsicherheit	Siehe Anhang
Dauerhaftigkeit und Gebrauchstauglichkeit	X gemäß EAD 350141-00-1106

Die Leistung des vorstehenden Produkts entspricht den erklärten Leistungen. Alleinverantwortlich für das Erstellen der Leistungserklärung gemäß Verordnung (EU) Nr. 305/2011 ist der oben genannte Hersteller. Unterzeichnet für den Hersteller und in dessen Namen von:

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# Extract of ETA-20/1235 (20.12.2020)

## Intended use

### 3 Performance of The Product And References To The Methods Used For Its Assessment

Basic requirements for construction works	Essential characteristic	Method of verification	Performance
<b>BWR 2</b>	Reaction to fire	EN 13501-1	Clause 3.1.1 of the ETA
	Resistance to fire	EN 13501-2	Clause 3.1.2 and Annex 2 of the ETA
<b>BWR 3</b>	Air permeability (material property)	No performance assessed	
	Water permeability (material property)	No performance assessed	
	Content and/or release of dangerous substances	European Council Directive 67/548/EEC and Regulation (EC) No 1272/2008 as well as EOTA TR 034, edition October 2015	Declaration of conformity by the manufacturer
<b>BWR 4</b>	Mechanical resistance and stability	EOTA TR001	Clause 3.3 of the ETA
	Resistance to impact / movement	EOTA TR001	Clause 3.3 of the ETA
	Adhesion	EOTA TR001	Clause 3.3 of the ETA
	Durability	EOTA TR 024	Clause 2.2 of the ETA
	Movement capability	EAD 350141-00-1106	Clause 3.3 of the ETA
	Cycling of perimeter seals for curtain walls	2.2.14	Clause 3.3 of the ETA
	Compression set	No performance assessed	
	Linear expansion on setting	No performance assessed	
<b>BWR 5</b>	Airborne sound insulation	EN ISO 10140-1 and EN ISO 10140-2, EN ISO 717-1	Clause 3.4.1 of the ETA
<b>BWR 6</b>	Thermal properties	EN 12667:2001	Clause 3.5.1 of the ETA
	Water vapour permeability	No performance assessed	

### **3.1 Safety in case of fire**

#### **3.1.1 Reaction to fire**

The reaction to fire classification for Hilti Firestop Joint Spray CFS-SP SIL is Class E in accordance with EN 13501-1:2007 +A1:2009.

#### **3.1.2 Resistance to fire**

Hilti Firestop Joint Spray CFS-SP SIL has been tested in accordance with EN 1364-4:2014.

Based upon these test results and the field of direct application specified within EN 1364-4:2014, Hilti Firestop Joint Spray CFS-SP SIL has been classified in accordance with EN 13501-2: 2010-02, as shown in Annex 2.

Before the fire test a cycling test according to EAD 350141-00-1106 has been performed to show the ability of the sealing system to accommodate movement ("mechanical ageing") without losing its fire resistance, using the frequency designated "seismic" (30 cycles per minute) at an amplitude of  $\pm 12.5\%$ .

For details of suitable floor constructions and curtain wall constructions see 1.2.1.

### **3.2 Hygiene, Health, and the environment.**

#### **3.2.1. Content and release of Dangerous Substances**

Hilti AG have presented a Material Safety Data Sheet according to 91/155 EEC and a declaration that Hilti CFS-SP SIL is in compliance with Council Directive 76/769/EEC of 27th July 1976 on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations (incl. all amendments and adaptations).

Confirmation has further been declared that all dangerous chemical substances  $\geq 1.0\%$  w/w as well as all toxic, carcinogenic, toxic for reproduction and mutagenic chemical substances  $\geq 0.1\%$  w/w (Status: 29. adaption – 2004/73/EG – of the EU directive 67/548/EEC, classification, packaging and labelling of dangerous substances) are stated in Hilti safety data sheets (according to 91/155/EEC including amendments) and have been considered for the classification of the products according to the directive 1999/45/EG (classification of preparations, including amendments).

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

### **3.3 Safety and accessibility in use**

#### **3.3.1 Mechanical resistance and stability – resistance to dynamic loads**

See 3.3.2

#### **3.3.2 Resistance to impact/movement**

The resistance to impact/movement has been tested using the test procedure according to EAD 350141-00-1106, section 2.4.13.2.2.1. The test construction was subjected to cycling 500 times between the minimum and maximum joint width corresponding to a movement capability of 12.5%. A cyclic rate of 30 cpm (cycles per minute) was used, designated as seismic. This cycling rate also covers lower frequency cycling rates designated as "wind sway" and "thermal".

### 3.3.3 Adhesion

Adhesion is covered by tests carried out for the determination of movement capability described in 3.3.2

## 3.4 Protection against noise

### 3.4.1 Airborne sound insulation

Test reports from noise reduction according to EN 20140-10, EN ISO 140-1, EN 20140-3, EN ISO 10140-1, EN ISO 10140-2, EN ISO 10140-5 and EN ISO 717-1 have been provided.

A special test set-up was used to simulate the conditions of a perimeter seal of a curtain wall. The resulting

$R_{w(C;Ctr)}$  and  $D_{n,e,w} (C; Ctr)$  values are:

Joint width [mm]	Seal depth [mm]	Coating	$R_{w(C;Ctr)}$ [dB]	$D_{n,e,w} (C; Ctr)$ [dB]
200	200	Both sides	38 (-1;-5) <sup>a)</sup>	53 (-1;-4) <sup>b)</sup>
200	200	Top side	36 (-1;-3) <sup>a)</sup>	51 (-1;-3) <sup>b)</sup>

a) where  $S = 0,3 \text{ m}^2$

b) where  $A = 10 \text{ m}^2$

## 3.5 Energy, economy and heat retention (BWR 6)

### 3.5.1 Thermal properties

No performance assessed

### 3.5.2 Water vapour permeability

No performance assessed

## ANNEX 2

### RESISTANCE TO FIRE CLASSIFICATION OF HILTI FIRESTOP JOINT SPRAY CFS-SP SIL

#### 2.1 Specific characteristics for rigid floor and curtain wall construction

- a) Rigid floors: The floor must have a minimum thickness  $t_{E1} \geq 150$  mm and comprise of concrete with a minimum density of  $2400 \text{ kg/m}^3$ .
- b) Curtain wall: Curtain walls with steel or aluminium framing (transoms, mullions). The cavity formed by the spandrel panel and the framing filled with stone wool or stone wool board of a nominal density of minimum:

$\sim 60 \text{ kg/m}^3$	with Calcium Silicate boards and/or Steel or Aluminium sheet
$\sim 120 \text{ kg/m}^3$ (Foil faced)	without Calcium Silicate boards and/or Steel or Aluminium sheet

This forming the perimeter joint edge.

See figures in Annex 2.4.

#### 2.2 Perimeter seal installation specifics

Hilti Firestop Joint Spray CFS-SP SIL (A) should be applied with a  $t_A = \sim 3$  mm wet film thickness and should overlap on floor construction and curtain wall ( $L_1$ ) at minimum 15 mm. As backfilling material, a mineral wool product (B<sub>1</sub>) as specified in Annex 1.2 should be installed by compressing in the A-A direction by  $\geq 33\%$  to a depth  $t_{B1} \geq 150$  mm. Splice distance is required to be  $\geq 200$  mm. The thickness of the mineral wool slab should be such as to result in the application of a minimum number of layers; a maximum number of 3 layers is considered acceptable.

Nominal joint width (w): 10 to 150

mm; Movement capability: max.  $\pm$

12.5%

See figures in Annex 2.4.

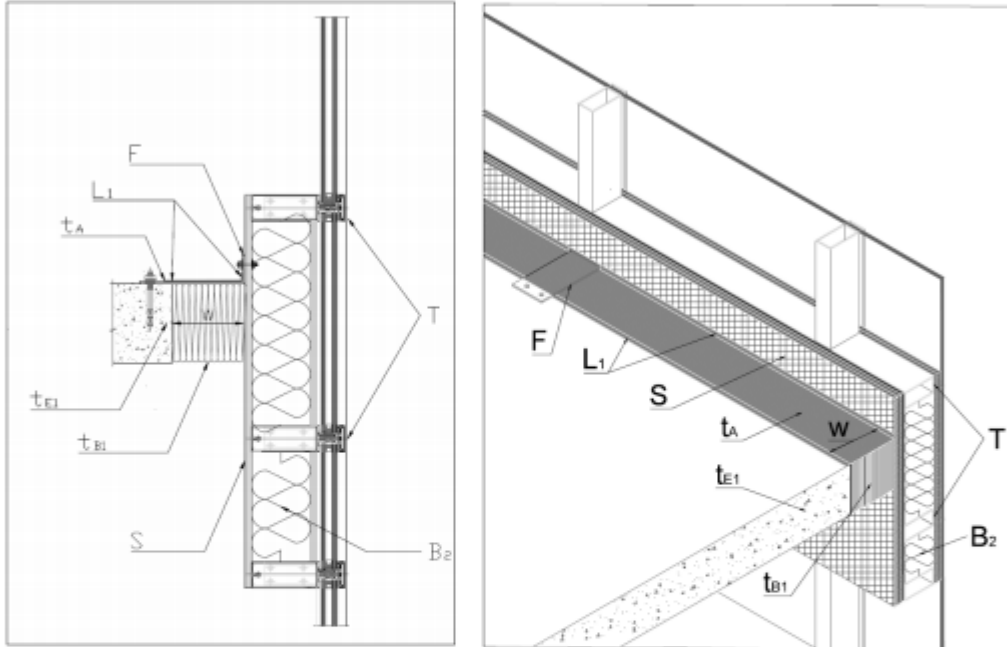
## 2.3 Classification for perimeter seal

Perimeter seal as described in 2.2 with

- A joint width (w) of 10 to 150 mm and
- a maximum movement capability of  $\pm 12.5\%$  has a classification of:

**EI 180 – H – F – M12.5 – W 10 to W 150**

## 2.4 Typical Installation Detail for Floor slab to external façade:



## 2.5 Abbreviations used in Drawing

<b>Label</b>	<b>Description</b>
A	Hilti Firestop Joint Spray CFS-SP SIL
B <sub>1</sub>	Backfilling material (mineral wool) of perimeter seal
B <sub>2</sub>	Backfilling material (mineral wool) of curtain wall
E <sub>1</sub>	Rigid floor construction
F	Fixing Bracket
L <sub>1</sub>	Overlap of Hilti Firestop Joint Spray CFS-SP SIL
S	Steel or Aluminium Sheet
T	Transom
t <sub>A</sub>	Thickness of Hilti Firestop Joint Spray CFS-SP SIL
t <sub>B1</sub>	Thickness of backfilling material
t <sub>E1</sub>	Thickness of the rigid floor construction / joint depth
w	Joint width



## ANNEX 4

### REFERENCE DOCUMENTS

#### 4.1 References to standards mentioned in the ETA:

EN 1364-4	Fire resistance tests for non-loadbearing elements - Part 4: Curtain walling – Part configuration
EN 13501	Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests Part 2: Classification using test data from fire resistance tests
EN ISO 140-1	Measurement of sound insulation in buildings and of building elements – Part 1: Requirements for laboratory test facilities with suppressed flanking transmission
EN 20140	Acoustics – Measurement of sound insulation in buildings and of building elements Part 3: Laboratory measurements of airborne sound insulation of building elements Part 10: Laboratory measurement of airborne sound insulation of small building elements
EN ISO 10140	Acoustics - Laboratory measurement of sound insulation of building elements - Part 1: Application rules for specific products Part 2: Measurement of airborne sound insulation Part 5: Requirements for test facilities and equipment
EN ISO 717-1	Acoustics – Rating of sound insulation of buildings and of building elements – Part 1: Airborne sound insulation
ISO 11600	Building construction - Jointing products - Classification and requirements for sealants

#### 4.2 Other reference documents:

EOTA TR 001	Determination of impact resistance of panels and panel assemblies
EOTA TR 024	Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products