

DECLARATION OF PERFORMANCE

according to Annex III of the Regulation (EU) Nr. 305/2011 (Construction Products Regulation)

Hilti Firestop silicone joint spray CFS-SP SIL

No. Hilti CFS-SP SIL

1. Unique identification code of the product-type:

Hilti Firestop silicone joint spray CFS-SP SIL

2. Intended use:

Fire Stopping and Sealing Product for Linear Joint and Gap Seals: Perimeter seal of curtain walls, see ETA-20/1235 (20.12.2020)

Linear Joint and Gap Seals: Perimeter seal of curtain walls

3. Manufacturer:

Hilti Corporation, Feldkircherstrasse 100, 9494 Schaan, Principality of Liechtenstein

4. System of AVCP:

System 1

5. European Assessment Document:

EAD 350141-00-1106

European Technical Assessment:

ETA-20/1235 (20.12.2020)

Technical Assessment Body:

ETA-DK

Notified body/s:

MPA Braunschweig, No. 0761

6. Declared performance:

Essential characteristic	Declared performance / Harmonised technical specification
Reaction to fire	Class E according to EN 13501-1
Resistance to fire	Resistance to fire performance and field of application in accordance with EN 13501-2. See Annex
Dangerous substances	See Annex
Protection against noise	Tested according to EN ISO 10140 and EN ISO 717-1. See Annex
Mechanical resistance and stability	See Annex
Durability and serviceability	X in accordance with EAD 350141-00-1106

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above. Signed for and on behalf of the manufacturer by:

Cynthia Mikhael
Product Manager
Business Unit Chemicals
Hilti Corporation

Martin Althof
Head of Quality
Business Unit Chemicals
Hilti Corporation

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
BWR 2	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
BWR 3	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
BWR 4	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	
BWR 5	Airborne sound insulation	EN ISO 10140-1 and EN ISO 10140-2, EN ISO 717-1	Clause 3.4.1 of the ETA
BWR 6	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) ^{a)}	53 (-1;-4) ^{b)}
200	200	Top side	36 (-1;-3) ^{a)}	51 (-1;-3) ^{b)}

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 kg/m³.
- 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:

~60 kg/m ³	with Calcium Silicate boards and/or Steel or Aluminium sheet
~120 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 (B₁) 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 ≥ 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.

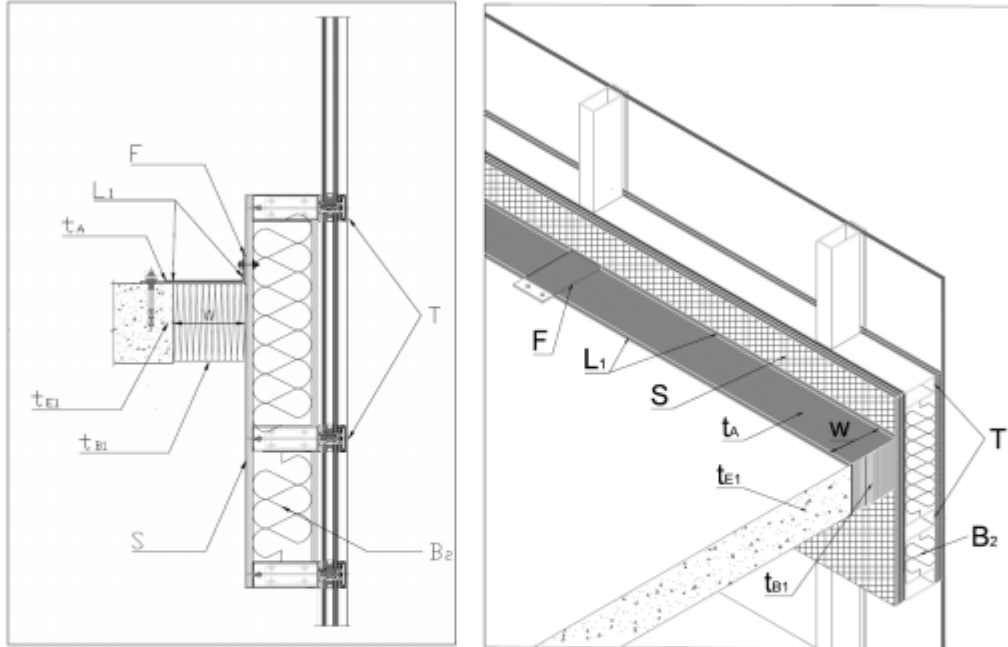
2.3 Classification for perimeter seal

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

Label	Description
A	Hilti Firestop Joint Spray CFS-SP SIL
B ₁	Backfilling material (mineral wool) of perimeter seal
B ₂	Backfilling material (mineral wool) of curtain wall
E ₁	Rigid floor construction
F	Fixing Bracket
L ₁	Overlap of Hilti Firestop Joint Spray CFS-SP SIL
S	Steel or Aluminium Sheet
T	Transom
t _A	Thickness of Hilti Firestop Joint Spray CFS-SP SIL
t _{B1}	Thickness of backfilling material
t _{E1}	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