



DICHIARAZIONE DI PRESTAZIONE

conformemente all'Allegato III al Regolamento (EU) n. 305/2011 (Regolamento sui prodotti da costruzione)

Hilti Spray antifuoco siliconico Hilti CFS-SP SIL

N. Hilti CFS-SP SIL

1. Codice di identificazione univoco del tipo di prodotto:

Hilti Spray antifuoco siliconico CFS-SP SIL

2. Uso previsto:

Prodotti ignifughi e sigillanti per giunti lineari e guarnizioni: sigillatura perimetrale di muri non portanti, vedere ETA-20/1235 (20.12.2020)

Giunti lineari e guarnizioni: sigillatura perimetrale di muri non portanti

3. Fabbricante:

Hilti Corporation, Feldkircherstrasse 100, 9494 Schaan, Principato del Liechtenstein

4. Sistema di VVCP:

Sistema 1

5. Documentazione di valutazione europea:

EAD 350141-00-1106

Valutazione tecnica europea:

ETA-20/1235 (20.12.2020)

Organismo di valutazione tecnica:

ETA-DK

Organismo/i notificato/i:

MPA Braunschweig, n. 0761

6. Prestazione dichiarata:

| Caratteristiche essenziali | Prestazioni dichiarate / specifica tecnica armonizzata |
|----------------------------------|---------------------------------------------------------------------------------------------|
| Reazione al fuoco | Classe E conforme alla norma EN 13501-1 |
| Resistenza al fuoco | Resistenza al fuoco e campo di applicazione conformi alla norma EN 13501-2. Vedere allegato |
| Sostanze pericolose | Vedere allegato |
| Protezione contro il rumore | Testato conformemente a EN ISO 10140 e EN ISO 717-1. Vedere allegato |
| Resistenza meccanica e stabilità | Vedere allegato |
| Durata e operatività | X in conformità con EAD 350141-00-1106 |

La prestazione del prodotto sopra identificato è conforme all'insieme delle prestazioni dichiarate. La presente dichiarazione di prestazione viene rilasciata in conformità al Regolamento (UE) N. 305/2011, sotto l'esclusiva responsabilità del fabbricante identificato in precedenza. Firmato a nome e per conto del fabbricante da:

Cynthia Mikhael
Product Manager
Divisione prodotti chimici
Hilti Corporation

Martin Althof
Responsabile della qualità
Divisione prodotti chimici
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.

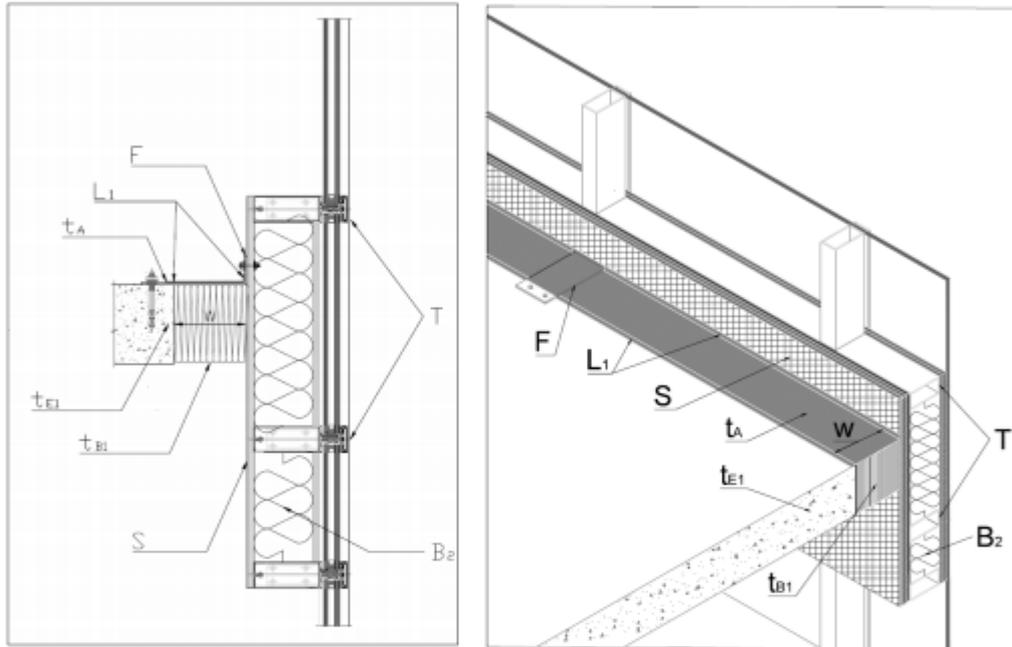
2.3 Classification for perimeter seal

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 |