



Austrian Institute of Construction Engineering  
Schenkenstrasse 4 | T+43 1 533 65 50  
1010 Vienna | Austria | F+43 1 533 64 23  
www.oib.or.at | mail@oib.or.at



## European Technical Assessment

**ETA-11/0343**  
of 26.11.2020

General part

**Technical Assessment Body issuing the European Technical Assessment**

Österreichisches Institut für Bautechnik (OIB)  
Austrian Institute of Construction Engineering

**Trade name of the construction product**

Hilti Firestop Joint Spray CFS-SP WB

**Product family to which the construction product belongs**

Fire Stopping and Fire Sealing Products:  
Linear Joint and Gap Seals

**Manufacturer**

Hilti AG  
Feldkircherstrasse 100  
9494 Schaan  
LIECHTENSTEIN

**Manufacturing plant**

Hilti production plant 4a

**This European Technical Assessment contains**

14 pages including Annexes 1 to 4 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 "Fire stopping and fire sealing products – Linear Joint and Gap Seals"

**This European Technical Assessment replaces**

European Technical Assessment ETA-11/0343,  
issued on 27.07.2016

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Specific parts

**1 Technical description of the product**

“Hilti Firestop Joint Spray CFS-SP WB” is a membrane-forming coating used to form a perimeter seal between rigid floor slabs and curtain walls with mineral wool as backfilling material. In facade constructions the coating is normally only applied on the top side. Very porous joint edges are treated with “Hilti Firestop Joint Spray CFS-SP WB” diluted with water, to achieve better adhesion. For details of the seal design depending on orientation, building elements forming the joint/gap or backfilling material and the related classifications see Annex 3 of the ETA.

For further details on “Hilti Firestop Joint Spray CFS-SP WB” see Annex 2 of the ETA. For a specification of suitable mineral wool as backfilling material see Annex 2, clause 2.2 of the ETA.

For a description of the installation procedure see Annex 3 of the ETA.

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

**2.1 Intended use**

“Hilti Firestop Joint Spray CFS-SP WB” is intended to be used as a linear joint and gap seal to provide fire resistance performance in the area of the perimeter joint between a curtain wall and rigid floor slabs.

“Hilti Firestop Joint Spray CFS-SP WB” may be used between the following construction elements:

Construction-element	Construction	
1. Rigid floors	1.a) Concrete	
	> Minimum density 2400 kg/m <sup>3</sup> > Minimum thickness 150 mm > The rigid floor shall be classified in accordance with EN 13501-2 for the required fire resistance period	
2. Curtain wall	2.a) Steel framed (transoms, mullions) 2.b) Aluminium framed (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:	
	> ~70 kg/m <sup>3</sup> (with calcium silicate boards and/or steel or aluminium sheet)	> ~120 kg/m <sup>3</sup> (foil faced) (without calcium silicate boards and/or steel or aluminium sheet)

## 2.2 Use conditions

“Hilti Firestop Joint Spray CFS-SP WB” is intended for use at temperatures below 0°C with casual exposure to UV but no exposure to rain, and can therefore – according to EAD 350141-00-1106, clause 2.1 – be categorized as Type Y<sub>1</sub>. Since the requirements for Type Y<sub>1</sub> are met, also the requirements for Type Y<sub>2</sub>, Z<sub>1</sub> and Z<sub>2</sub> are fulfilled.

## 2.3 Working life

The provisions made in this European Technical Assessment are based on an assumed working life of “Hilti Firestop Joint Spray CFS-SP WB” of 25 years, provided the conditions laid down in the technical literature of the manufacturer relating to packaging, transport, storage, installation, use and repair are met.

The indications given on the intended working life cannot be interpreted as a guarantee given by the producer or the Technical Assessment Body, but are to be regarded only as a means for selecting the appropriate product in relation to the expected economically reasonable working life of the works.

The real working life might be, in normal use conditions, considerably longer without major degradation affecting the Basic requirements for construction works.

## 2.4 General assumptions

It is assumed that damages to the perimeter seal are repaired accordingly.

## 2.5 Manufacturing

The European Technical Assessment is issued for the product on the basis of agreed data / information, deposited with the Österreichisches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data / information being incorrect, should be notified to the Österreichisches Institut für Bautechnik before the changes are introduced.

The Österreichisches Institut für Bautechnik 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.

## 2.6 Installation

The product shall be installed and used as described in this European Technical Assessment.

**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 13501-1:2010	Clause 3.1.1 of the ETA
	Resistance to fire	EN 13501-2:2016	Clause 3.1.2 of the ETA
<b>BWR 3</b>	Air permeability (material property)	EN 1026:2000	Clause 3.2.1 of the ETA
	Water permeability (material property)	EAD 350141-00-1106, Annex C	Clause 3.2.2 of the ETA
	Content, emission and/or release of dangerous substances	EN 16516:2018	Clause 3.2.3 of the ETA
<b>BWR 4</b>	Mechanical resistance and stability	EAD 350141-00-1106, clause 2.2.6	Clause 3.3.1 of the ETA
	Resistance to impact / movement	EOTA TR 001:2003	Clause 3.3.2 of the ETA
	Adhesion	EAD 350141-00-1106, clause 2.2.8	Clause 3.3.3 of the ETA
	Durability	EOTA TR 024:2009	Clause 3.3.4 of the ETA
	Movement capability	No performance assessed	
	Cycling of perimeter seals for curtain walls	EAD 350141-00-1106, clause 2.2.14	Clause 3.3.6 of the ETA
<b>BWR 5</b>	Airborne sound insulation	EN ISO 10140-1:2010	Clause 3.4.1 of the ETA
<b>BWR 6</b>	Thermal properties	No performance assessed	
	Water vapour permeability	No performance assessed	

**3.1 Safety in case of fire (BWR 2)**

**3.1.1 Reaction to fire**

“Hilti Firestop Joint Spray CFS-SP WB” was assessed according to EAD 350141-00-1106, clause 2.2.1 and classified according to EN 13501-1:2010.

Component	Class according to EN 13501-1:2010
Hilti Firestop Joint Spray CFS-SP WB	<b>E</b>

**3.1.2 Resistance to fire**

“Hilti Firestop Joint Spray CFS-SP WB” was tested according to EAD 350141-00-1106, clause 2.2.2 and EN 1364-4:2007.

Based upon the gained test results and the field of application specified within EN 1364-4:2007 “Hilti Firestop Joint Spray CFS-SP WB” has been classified according to EN 13501-2:2010, as shown in Annex 2 of the ETA.

For details of suitable floor constructions and curtain wall constructions see clause 2.1 of the ETA.

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### 3.2 Hygiene, health and the environment (BWR 3)

#### 3.2.1 Air permeability

The air permeability of the “Hilti Firestop Joint Spray CFS-SP WB” was tested in a joint set up with dimension 1030 x 80 according to EAD 350141-00-1106, clause 2.2.3 by applying the test principle of EN 1026.

Pressure Pa	50	250	300	450	600
q/A air [m <sup>3</sup> /(h m <sup>2</sup> )]	No representative air flow measured				

#### 3.2.2 Water permeability

The water permeability has been tested using the principles of the test procedure according to Annex C of EAD 350141-00-1106. The specimen consisted of 2 mm “Hilti Firestop Joint Spray CFS-SP WB” (dry film thickness) on mineral wool. Test result: Water tight to 1000 mm head of water for a period of max 10 days.

#### 3.2.3 Content, emission and/or release of dangerous substances

“Hilti Firestop Joint Spray CFS-SP WB” was tested for SVOC and VOC according EAD 350141-00-1106, clause 2.2.3, in accordance with EN 16516 with a loading factor of 0,007 m<sup>2</sup>/m<sup>3</sup>. Release scenario IA1 and IA2 have been tested.

The concentration of SVOC after 3 days and after 28 days was < 0,005 mg/m<sup>3</sup>. The concentration of the total emission of VOC after 3 days was 0,21 mg/m<sup>3</sup> and after 28 days the concentration was 0,08 mg/m<sup>3</sup>.

### 3.3 Safety and accessibility in use (BWR 4)

#### 3.3.1 Mechanical resistance and stability

According to EAD 350141-00-1106, clause 2.2.6 the mechanical resistance and stability is covered by tests carried out for the assessment of resistance to impact / movement (see clause 3.3.2 of the ETA)

#### 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. Due to the maximum seal width of 200 mm the method according to EOTA TR 001, clause 3 of hard body impact had to be used. The hard body impact test simulates the impact, resulting from an object accidentally falling against the seal.

Safety in Use: The requirement of withstanding a 10 Nm impact was fulfilled without damages.

Serviceability: The requirement of withstanding a 10 Nm impact was fulfilled without damages.

#### 3.3.3 Adhesion

Adhesion is covered by the resistance to impact / movement tests described in clause 3.3.2 of the ETA.

### 3.3.4 Durability

“Hilti Firestop Joint Spray CFS-SP WB” has been tested in accordance with EOTA TR 024, Table 4.1 for the Y<sub>1</sub> use category specified in EAD 350141-00-1106 and the results of the test have demonstrated suitability for perimeter seals intended for use at temperatures between -20°C and +70°C (Y<sub>1</sub>, (-20/+70)°C).

“Hilti Firestop Joint Spray CFS-SP WB” may be painted over with Acrylic paint systems.

The compatibility test showed no negative influence of “Hilti Firestop Joint Spray CFS-SP WB” on steel and aluminium surfaces.

### 3.3.5 Movement capability

No performance assessed

### 3.3.6 Cycling of perimeter seals for curtain walls

Before the fire test was carried out, a cycling test according to EAD 350141-00-1106, clause 2.2.14 has been performed - in order to show the ability of the sealing system to accommodate movement ("mechanical ageing") without losing its fire resistance the frequency designated "seismic" (30 cycles per minute and 500 changes between minimum and maximum joint width) was used at an amplitude of ± 25%.

## 3.4 Protection against noise (BWR 5)

### 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 reached values for the airborne sound insulation are given in the following table.

Joint width [mm]	Seal depth [mm]	Coating	R <sub>w(C;Ctr)</sub> [dB]	D <sub>n,e,w (C; Ctr)</sub> [dB]
200	200	Both sides	40 (-1; -5) <sup>a)</sup>	55 (0; -4) <sup>b)</sup>
200	200	Top side	37 (-1; -4) <sup>a)</sup>	52 (-1; -4) <sup>b)</sup>

<sup>a)</sup> where S = 0,3 m<sup>2</sup>

<sup>b)</sup> where A<sub>0</sub> = 10 m<sup>2</sup>

## 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

## 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<sup>1</sup>, amended by Decision 2001/596/EC<sup>2</sup> of the European Commission the system(s) of assessment and verification of constancy of performance (see Annex V of Regulation (EU) No 305/2011) is given in the following table.

<sup>1</sup> Official Journal of the European Communities no. L 178, 14.7.1999, p. 52

<sup>2</sup> Official Journal of the European Communities no. L 209, 2.8.2001, p. 33

Product(s)	Intended use(s)	Level(s) or class(es) (resistance to fire)	System of assessment and verification of constancy of performance
Fire Stopping and Fire Sealing Products	for fire compartmentation and/or fire protection or fire performance	any	1

In addition, 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, is given in the following table.

Product(s)	Intended use(s)	Level(s) or class(es) (reaction to fire)	System of assessment and verification of constancy of performance
Fire Stopping and Fire Sealing 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)***, F	4
<p>* 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)</p> <p>** Products/materials not covered by footnote (*)</p> <p>*** Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of class A1 according to Commission Decision 96/603/EC, as amended)</p>			

## 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 with the Technical Assessment Body Österreichisches Institut für Bautechnik.

The notified product certification body shall visit the factory at least twice a year for surveillance of the manufacturer.

Issued in Vienna on 26.11.2020  
by Österreichisches Institut für Bautechnik

The original document is signed by:

Rainer Mikulits  
Managing Director



## ANNEX 1 - DESCRIPTION OF PRODUCT & ANCILLARY PRODUCT(S)

### 1.1 Hilti Firestop Joint Spray CFS-SP WB

“Hilti Firestop Joint Spray CFS-SP WB” is a water based 1-component product and is composed essentially of filling substances and an acrylic binder. It is delivered in various colours.

“Hilti Firestop Joint Spray CFS-SP WB” is supplied in 19 Litre buckets.

A detailed specification of the product is contained in document “Identification / Product Specification relating to the European technical approval ETA-11/0343 - Hilti Firestop Joint Spray CFS-SP WB” which is a non-public part of this ETA.

The Control Plan is defined in document “Control Plan related to the European Technical Approval ETA-11/0343 - Hilti Firestop Joint Spray CFS-SP WB” which is a non-public part of this ETA.

#### Technical product literature:

- Technical Data Sheet “Hilti Firestop Joint Spray CFS-SP WB”
- Safety Data Sheet according to 1907/2006/EC, Article 31, for “Hilti Firestop Joint Spray CFS-SP WB”

### 1.2 Mineral wool

“Termarock 40” (from manufacturer DEUTSCHE ROCKWOOL Mineralwoll GMBH & Co. OHG) or “Termarock 40” with a higher bulk density has to be used as a backfilling material for the perimeter seal as long as it can be compressed by  $\geq 50\%$ . The valid compression direction is A-A.

No.	Characteristics	Specification
1	Mineral / Stone wool	EN 13162 or EN 14303
2	Density	40 to 70 kg/m <sup>3</sup>
3	Facing	No Al-facing, no other facing
4	Combustibility class	A1 according EN 13501-1
5	Melting point	$\geq 1000^{\circ}\text{C}$

## ANNEX 2 - RESISTANCE TO FIRE CLASSIFICATION OF HILTI FIRESTOP JOINT SPRAY CFS-SP WB

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

Construction-element	Construction	
1. Rigid floors	1.a) Concrete	
	> Minimum density 2400 kg/m <sup>3</sup> > Minimum thickness 150 mm > The rigid floor shall be classified in accordance with EN 13501-2 for the required fire resistance period	
2. Curtain wall	2.a) Steel framed (transoms, mullions)	
	2.b) Aluminium framed (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:	
	> ~70 kg/m <sup>3</sup> (with calcium silicate boards and/or steel or aluminium sheet)	> ~120 kg/m <sup>3</sup> (foil faced) (without calcium silicate boards and/or steel or aluminium sheet)

### 2.2 Perimeter seal installation specifics

“Hilti Firestop Joint Spray CFS-SP WB” (A) must be applied with a  $t_A = \sim 3-5$  mm wet film thickness, resulting in  $\sim 2$  mm dry film thickness. Application of “Hilti Firestop Joint Spray CFS-SP WB” (A) should overlap the floor construction and curtain wall (L<sub>1</sub>) a minimum of 15 mm. As backfilling material, a mineral wool product (B<sub>1</sub>) as specified in Annex 1.2 should be installed. This mineral wool must be compressed by  $\geq 50\%$  during installation to a depth  $t_B \geq 150$  mm.

Splice distances:

- For curtain wall 2.a) (steel framed according to clause 2.1 of the ETA) = 1000mm
- For curtain wall 2.b) (aluminium framed according to clause 2.1 of the ETA) = 200mm

Nominal joint width (w): 10 to 200 mm

Movement capability: max.  $\pm 25\%$

### 2.3 Classification for perimeter seal

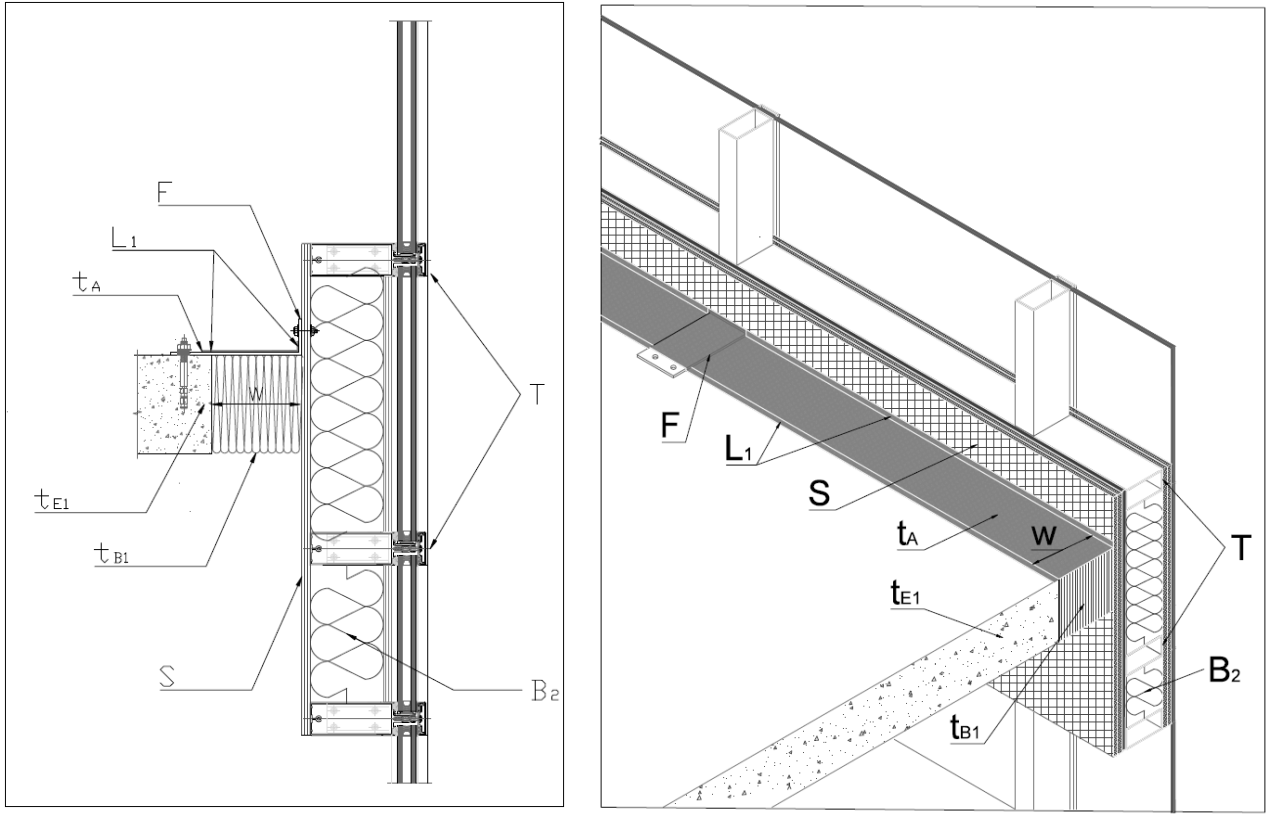
This perimeter seal as described in Annex 2, clause 2.2 of the ETA with

- a joint width (w) of 10 to 200 mm and
- a maximum movement capability of  $\pm 25\%$  has a classification of:

Steel Framed Curtain Wall
<b>EI 90 – H – F – M25 – W 10 to W 200</b>

Aluminium Framed Curtain Wall
<b>EI 180 – H – F – M25 – W 10 to W 200</b>

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



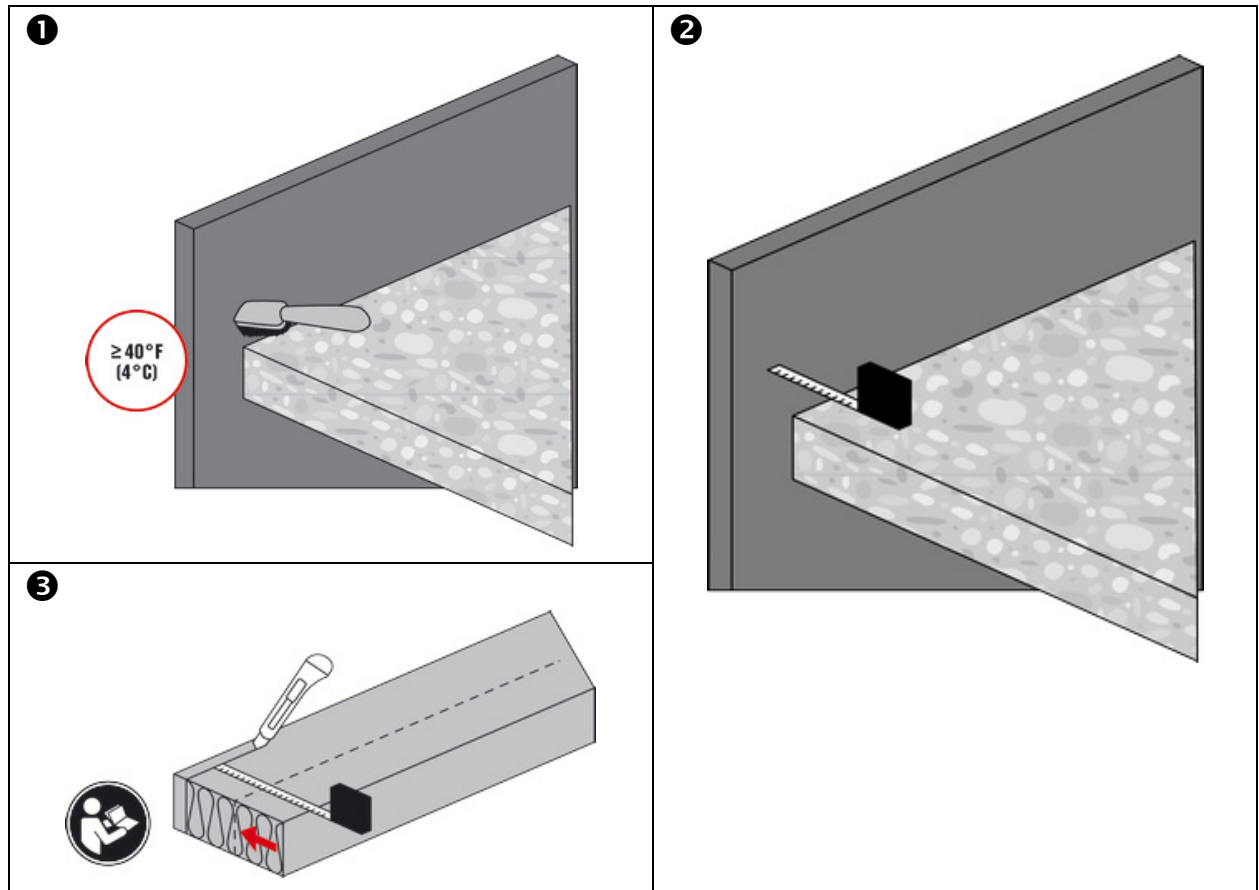
**2.5 Abbreviations used in Drawing**

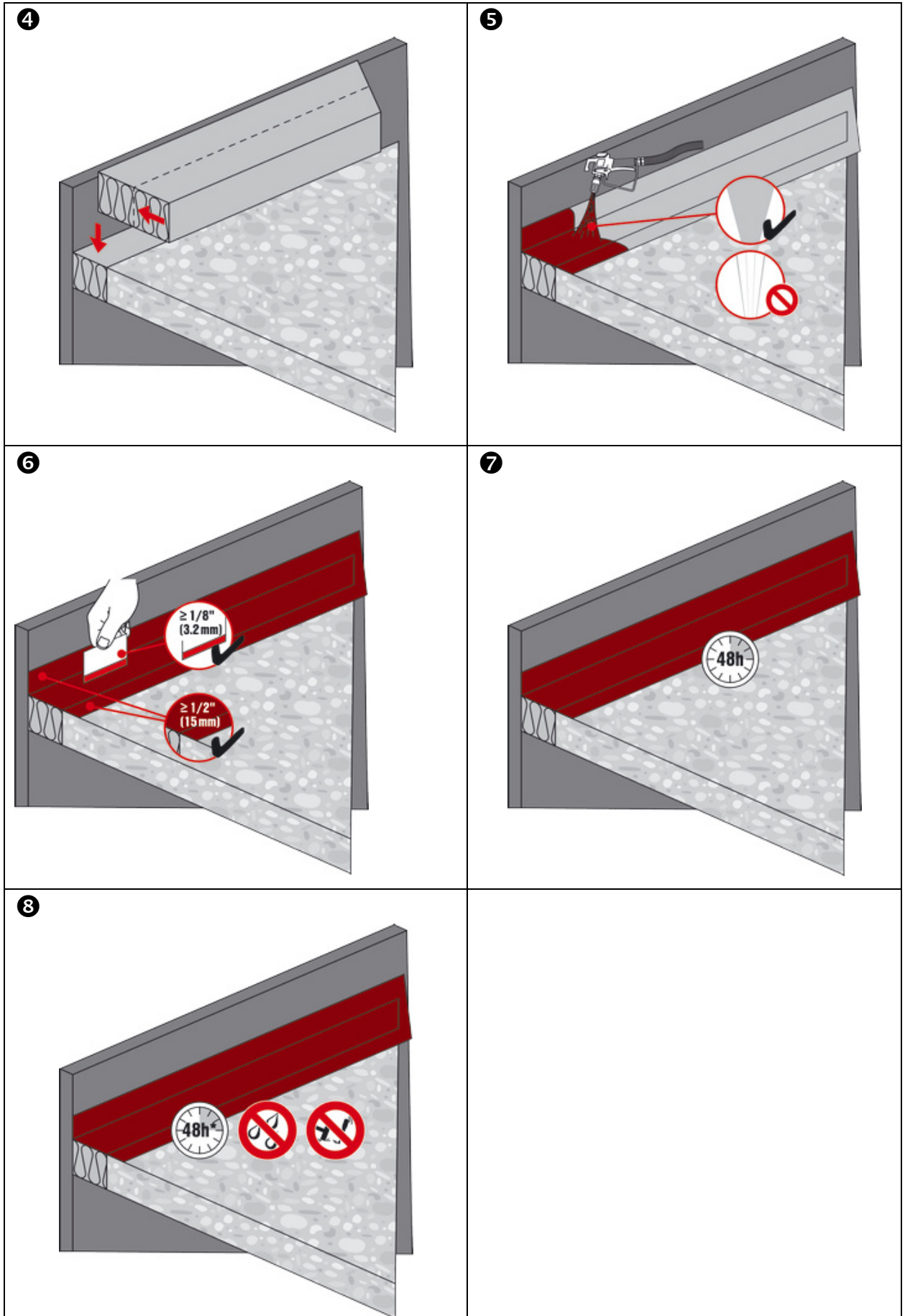
Label	Description
A	Hilti Firestop Joint Spray CFS-SP WB
B <sub>1</sub>	Backfilling material (mineral wool) of perimeter seal
B <sub>2</sub>	Backfilling material (mineral wool) of curtain wall
E <sub>1</sub>	Rigid floor construction
F	Fixing Bracket
L <sub>1</sub>	Overlap of Hilti Firestop Joint Spray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

## ANNEX 3 - INSTALLATION INSTRUCTION OF HILTI FIRESTOP JOINT SPRAY CFS-SP WB

### 3.1 Installation instruction "Hilti Firestop Joint Spray CFS-SP WB"

Installation of the "Hilti Firestop Joint Spray CFS-SP WB" should be conducted as follows:





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## 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 13162     | Thermal insulation products for buildings – Factory made mineral wool (MW) products – Specification   |
| EN 13501     | Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests<br>Part 2: Classification using test data from fire resistance tests  |
| EN 16516     | Construction products: Assessment of release of dangerous substances – Determination of emissions into indoor air   |
| 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<br>Part 3: Laboratory measurements of airborne sound insulation of building elements<br>Part 10: Laboratory measurement of airborne sound insulation of small building elements |
| EN ISO 10140 | Acoustics – Laboratory measurement of sound insulation of building elements -<br>Part 1: Application rules for specific products<br>Part 2: Measurement of airborne sound insulation<br>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  |

### 4.2 Other reference documents:

- EAD 350141-00-1106 – Fire stopping and fire sealing products – Linear Joint and Gap Seals
- 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