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

Designated according to Article 29 of Regulation (EU) No 305/2011

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European Technical Assessment

ETA-12/0078
of 01/12/2014

General part

Technical Assessment Body issuing the ETA	Austrian Institute of Construction Engineering (OIB)
Trade name of the construction product	Hilti Firestop Joint Spray CFS-SP WB
Product family to which the construction product belongs	Fire Stopping and Sealing Product: Linear Joint and Gap Seals
Manufacturer	Hilti AG Feldkircherstrasse 100 9494 Schaan Liechtenstein
Manufacturing plant	HILTI Werk 4a
This European Technical Assessment contains	14 pages including 4 Annexes 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	Guideline for European technical approval (ETAG) No. 026-2 Fire Stopping and Fire Sealing Products – Part 2: Penetration Seals, edition August 2011, used as European Assessment Document (EAD)
This version replaces	ETA-10/0078 with validity from 20.03.2012 to 19.03.2017

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General part

This European Technical Assessment is not to be transferred to manufacturers or agents of manufacturer other than those indicated on page 1, or manufacturing plants other than those laid down in the context of this European Technical Assessment.

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

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1 Specific part

1.1 Technical description of the product

Hilti Firestop Joint Spray CFS-SP WB is a membrane-forming coating used to form a linear joint or gap seal with mineral wool as backfill material. In wall constructions the coating is used on both sides, in floor constructions normally only on the top side. For further details on Hilti Firestop Joint Spray CFS-SP WB respectively for a specification of suitable mineral wool as backfilling material see Annex 2.

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

2.1 Intended use

The intended use of Hilti Firestop Joint Spray CFS-SP WB is to reinstate the fire resistance performance of linear joints and gaps (floor to floor, wall to wall, "top/head of wall"). Details on the classification of the supporting constructions are given in Annex 3. Following specific structures may be used:

- Rigid floors
- Rigid walls
- Flexible walls

2.2 Use Category

The use category of Hilti Firestop Joint Spray CFS-SP WB Y_1. Therefore all requirements for type Y_2, Z_1 and Z_2 are included.

Type Y_1: Products intended for use at temperatures between - 5 °C and + 70 °C with exposure to UV but without exposure to rain.

Type Y_2: Products intended for use at temperatures between - 5 °C and + 70°C but without exposure to rain and UV.

Type Z_1: Products intended for use at internal conditions with high humidity, excluding temperatures below 0 °C.[1]

Type Z_2: Products intended for uses at internal conditions with humidity classes other than Z_1, excluding temperatures below 0 °C.

2.3 General assumptions

It is assumed that:

- damages to the penetration seal are repaired accordingly,
- the installation of the penetration seal does not effect the stability of the adjacent building element (even in case of fire),
- the lintel or floor above the penetration seal is designed structurally and in terms of fire protection such that no additional mechanical load (other than its own weight) is imposed on the penetration seal,
- the aperture lining within a flexible wall is supported by the studs (transoms and mullions) in such a way that the mechanical load imposed to the aperture lining by the penetration seal does not affect the stability of the aperture lining and the flexible wall,
- the installations are fixed to the adjacent building element in accordance with the relevant regulations in such a way that, in case of fire, no additional mechanical load is imposed to the penetration seal,
- the support of the installations is maintained for the required period of fire resistance

[1] These uses apply for internal humidity class 5 in accordance with EN ISO 13788

2.4 Manufacturing control

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 based on the European Technical Assessment and if so whether further assessment or alterations to the European Technical Assessment shall be necessary.

2.5 Installation

The product shall be installed and used as described in this European Technical Assessment. Additional marking of the penetration seal shall be done in case of national requirements.

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

Basic requirements for construction works	Essential characteristics	Method of verification	Performance
BWR 1	None	Not relevant	
BWR 2	Reaction to fire	EN 13501-1	class E
	Resistance to fire	EN 13501-2:2007+A1:2009, EN 1366-4	see clause 3.2.2
BWR 3	Air permeability (material property)	No Performance Determined	see clause 3.3.1
	Water permeability (material property)	ETAG 026-3	see clause 3.3.2
	Content and/or release of dangerous substances	European Council Directive 67/548/EEC-Dangerous Substances Directive and Regulation (EC) No 1272/2008	see clause 3.3.3
BWR 4	Mechanical resistance and stability	ETAG 026-3	see clause 3.4.1
	Resistance to impact / movement	ETAG 026-3	see clause 3.4.2
	Adhesion	ISO 11600	see clause 3.4.3
BWR 5	Airborne sound insulation	EN ISO 140-3 / 20140-10 / 717-1	see clause 3.5.1
BWR 6	Thermal properties	No Performance Determined	see clause 3.6.1
	Water vapour permeability	No Performance Determined	see clause 3.6.2
BWR 7	No Performance Determined		

3.1 Mechanical resistance and stability (BWR 1)

Not relevant.

3.2 Safety in case of fire (BWR 2)

3.2.1 Reaction to fire

The reaction to fire classification for Hilti Firestop Joint Spray CFS-SP WB is class E in accordance with EN 13501.

3.2.2 Resistance to fire

Hilti Firestop Joint Spray CFS-SP WB has been tested in accordance with EN 1366-4:2006.

Based upon these test results and the field of direct application specified within EN 1366-4:2006, Hilti Firestop Joint Spray CFS-SP WB has been classified according to EN 13501-2, as shown in Annex 3.

3.3 Hygiene, health and environment (BWR 3)

3.3.1 Air permeability

No performance determined.

3.3.2 Water permeability

The water permeability has been tested using the principles of the test procedure according to Annex C of ETAG 026-3. 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 or 9806 Pa.

3.3.3 Dangerous substances

Hilti AG have presented a Material Safety Data Sheet according to Regulation 1907/2006/EC, article 31 and a declaration that Hilti Firestop Joint Spray CFS-SP WB is in compliance with Regulation 1907/2006/EC concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Confirmation has been declared that all dangerous chemical substances have been considered for the classification of the products according to the Regulation 1272/2008/EC (classification, labelling and packaging of substances and mixtures, including amendments).

In addition to the specific clauses relating to dangerous substances contained in this European technical approval, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Directive, these requirements need also to be complied with, when and where they apply.

3.4 Safety and accessibility in use (BWR 4)

3.4.1 Mechanical resistance and stability

See 3.4.2

3.4.2 Resistance to impact / movement

The resistance to impact / movement has been tested using the test procedure according to ETAG 026-3. Due to the maximum seal width of 200 mm the method according to Clause 3 of EOTA TR001 (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.

3.4.3 Adhesion

Adhesion is covered by the impact tests described in 3.4.2.

3.5 Protection against noise (BWR 5)

3.5.1 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.

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

Coating	$R_{w(C;Ctr)}$ [dB]	$D_{n,e,w\ (C;\ Ctr)}$ [dB]
Both sides	40 (-1;-5) [a)]	55 (0;-4) [b)]
Top side	37 (-1;-4) [a)]	52 (-1;-4) [b)]

[a)] where S = 0,3 m^2 (S = Area to which the measurement applies)
[b)] where A_0 = 10 m^2 (A_0 = Area on which the standardisation is carried out)

- Joint width 200mm
- Seal depth 200mm

3.6 Energy economy and heat retention (BWR 6)

3.6.1 Thermal properties

No performance determined.

3.6.2 Water vapour permeability

No performance determined.

3.7 Sustainable use of natural resources (BWR 7)

No performance determined

3.8 General aspects relating to fitness for use

3.8.1 Movement capability

The movement capability of ±40 % was verified by a small scale movement test.

3.8.2 Overpaintability

Hilti Firestop Joint Spray CFS-SP WB may be overpainted with Acrylic paint systems.

3.8.3 Compatibility with metals

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

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

4.1 AVCP system

According to the Decision 1999/454/EC[2], no.1 amended by Decision 2001/596/EC[3] of the European Commission, as amended, the system(s) of assessment and verification of constancy of performance (see Annex V of Regulation (EU) No 305/2011) is used.

[2] Official Journal of the European Communities no. L 178, 14.7.1999, p. 52

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

5.1 Tasks of the manufacturer

5.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European technical assessment.

The manufacturer may only use initial / raw / constituent materials stated in the technical documentation of this European technical assessment.

The factory production control shall be in accordance with the "Control Plan" relating to this European technical assessment, which is part of the technical documentation of this European technical assessment. The "Control Plan" is laid down in the context of the factory production control system operated by the manufacturer and deposited at the Österreichisches Institut für Bautechnik.

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

5.1.2 Other tasks of the manufacturer

The manufacturer shall provide a Technical data sheet and an installation instruction with the following minimum information:

Technical data sheet:

Field of application:
Building elements in which the product may be installed, type and properties of the building elements like minimum thickness, density, and - in case of lightweight constructions - the construction requirements.

Services which may penetrate the building element, type and properties of the services like material, diameter, thickness etc. in case of pipes including insulation materials; necessary/allowed supports/fixings (e.g. cable trays), separations etc.

Design of the Linear Joint Seal (s) including limits in size, minimum thickness, separations etc. of the penetration seal(s)

Definitions of ancillary products (e.g. backfilling material) with clear indication whether they are generic or specific.

Environmental conditions covered by the ETA.

Construction of the penetration seal including the necessary components and additional products (e.g. backfilling material) with clear indication whether they are generic or specific.

Installation instruction:

- Steps to be followed
- Stipulations on maintenance, repair and replacement

The manufacturer shall, based on a contract, involve a notified product certification body, which is notified for the tasks referred to in clause 4.1 of the ETA in the field of Assessment product.

[3] Official Journal of the European Communities no. L 209, 2.8.2001, p. 33

For this purpose, the control plan referred to in clause 5.1 and 5.2 of the ETA shall be handed over by the manufacturer to the notified product certification body involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European Technical Assessment.

5.1.3 Further testing of samples taken at the factory

Testing of samples taken at the factory by the manufacturer is not required.

5.2 Tasks of notified product certification body

The Notified Body shall retain the essential points of its actions referred to clause 5.2.1 to 5.2.3, state the results obtained and conclusions drawn in written report.

These tasks shall be performed in accordance with the provisions laid down in the control plan of this European Technical Assessment.

5.2.1 Determination of the product type

Notified bodies undertaking tasks under Systems 1 shall consider the European Technical Assessment issued for the construction product in question as the assessment of the performance of that product. Notified bodies shall therefore not undertake the tasks referred to in point 1.2 (b)(i), in Annex V of Regulation (EU) No 305/2011, unless there are changes in the manufacture or manufacturing plant. In such cases, the necessary initial type testing has to be agreed between the Österreichisches Institut für Bautechnik and notified product certification body involved.

5.2.2 Initial inspection of the manufacturing plant and of factory production control

The notified product certification body shall ascertain that, in accordance with the control plan, the manufacturing plant, in particular personnel and equipment, and the factory production control are suitable to ensure a continuous and orderly manufacturing of the kit according to the specifications given in clause 2 and in the Annexes of the European Technical Assessment.

5.2.3 Continuous surveillance, assessment and evaluation of factory production control

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

It has to be verified that the system of factory production control and the specified manufacturing process are maintained taking into account the control plan.

Continuous surveillance and assessment of factory production control have to be performed according to the control plan.

The results of continuous surveillance shall be made available on demand by the notified product certification body or the Österreichisches Institut für Bautechnik. In cases where the provisions of the European Technical Assessment and the control plan are no longer fulfilled, the certificate of constancy of performance shall be withdrawn.

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by Österreichisches Institut für Bautechnik

Rainer Mikulits
Managing Director

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ANNEX 1

Reference documents and list of abbreviations

1.1 References to standards mentioned in the ETA:

EN 1366-4	Fire resistance tests for service installations - Part 4: Linear joint seals
EN 13501-1	Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests
EN 13501-2	Fire classification of construction products and building elements – 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 20140-3	Acoustics – Measurement of sound insulation in buildings and of building elements – Part 3: Laboratory measurements of airborne sound insulation of building elements
EN 20140-10	Acoustics – Measurements of sound insulation in buildings and 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

1.2 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

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ANNEX 2

DESCRIPTION OF PRODUCT(S) & PRODUCT LITERATURE

1 Hilti Firestop Joint Spray CFS-SP WB

Hilti Firestop Joint Spray CFS-SP WB is a 1-component product. It is composed essentially of filling substances and an acrylic binder, provided in various colours.

Hilti Firestop Joint Spray CFS-SP WB is supplied in 19 Liter pails/buckets.

A detailed specification of the product is contained in document "Identification / Product Specification relating to the European technical approval ETA-11/0343 and ETA-12/0078 - 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 is relating to the European technical approval ETA-11/0343 and ETA-12/0078 - Hilti Firestop Joint Spray CFS-SP WB" which is a non-public part of this ETA.

2 Ancillary products:

2.1 Mineral wool

Mineral wool products suitable for being used as backfilling material

Characteristics	Specification
Stone wool	EN 13162 or EN 14303
Density	30 to 70 kg/m^3
Facing	No Al-facing, no other facing

3 Technical product literature:

- technical Data Sheet Hilti Firestop Joint Spray CFS-SP WB
- Safety Data Sheet acc. to 1907/2006/EC, Article 31, for Hilti Firestop Joint Spray CFS-SP WB

ANNEX 3

RESISTANCE TO FIRE CLASSIFICATION OF LINEAR JOINT/GAP SEALS MADE FROM HILTI FIRESTOP JOINT SPRAY CFS-SP WB

3.1 General information:

3.1.1 Wall / Floor constructions covered:

- rigid floor — The floor must have a minimum thickness of 150 mm and comprise concrete / aerated concrete with a minimum density of 2400kg/m^3 respectively 550 kg/m^3.

- rigid wall — The wall must have a minimum thickness of 100 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 380 kg/m^3.

- flexible wall — The wall must have a minimum thickness of 100 mm and comprise timber or steel studs lined on both faces with minimum 2 layers of 12,5 mm thick boards according EN 520 type F.

  In steel stud construction the space between linings has not to be completely filled with insulation material, especially in the neighbourhood to the seal. Nevertheless the wall has to be set up according requirements.

  For timber stud walls there must be a minimum distance of 100 mm of the seal to any stud and the cavity between stud and seal must be closed and a minimum of 100 mm insulation of Class A1 or A2 (in accordance with EN 13501-1) in the cavity between stud and seal is necessary.

The walls / floors must be classified in accordance with EN 13501-2 for the required fire resistance period or fulfil the requirements of the relevant Eurocode. This ETA does not cover use of the product as a penetration seal in sandwich panel constructions

3.1.2 Application of Hilti Firestop Joint Spray CFS-SP WB (A),

- t_A = 3-5 mm (wet film, resulting in ca. 2 mm dry film thickness)
- Movement capability: ± 40%

3.1.3 Application of mineral wool (B)

- compression of mineral wool ≥ 50%,
- splice distance minimum 625 mm

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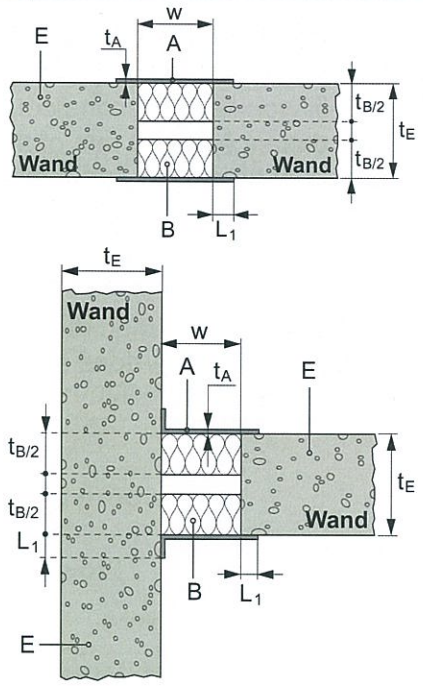
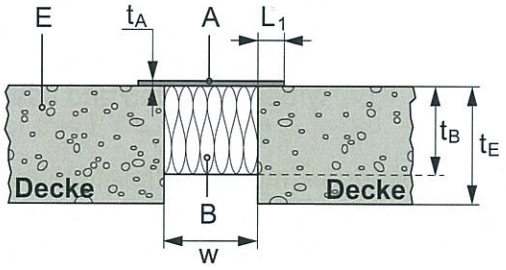
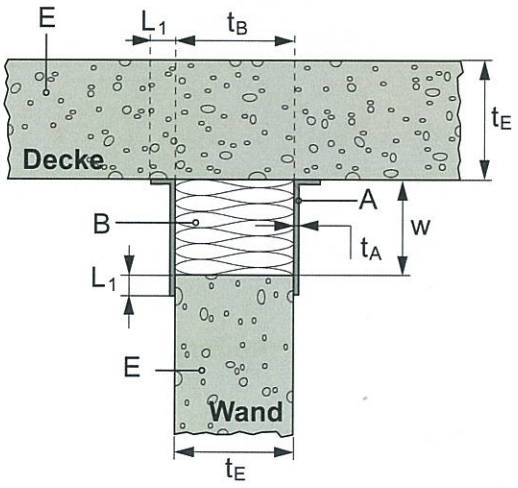
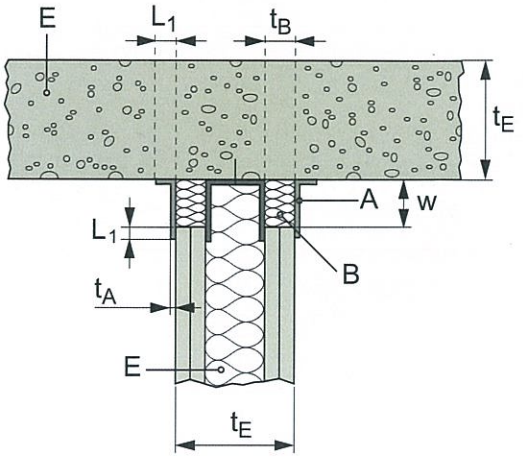
3.2 construction details:

- Differentiation in 4 types

type A	type B
Vertical joints in / between wall constructions	Joints in floor constructions
	
horizontal section	vertical section

type C	type D
Horizontal joints in a wall abutting a floor, ceiling or roof	Horizontal joints in flexible wall abutting a floor, ceiling or roof
	
vertical section	vertical section

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3.3 Classification for linear joint / gaps seals

Orientation (Type)	Joint width (mm)	Classification
Vertical joints in / between wall constructions (type A) $t_B \geq 150$ mm [a)]	6 to 100	EI 240-V-M 40-F-W 6 to 100
Joints in floor constructions (type B) $t_B \geq 100$ mm		EI 120-H-M 40-F-W 6 to 100 E 240-H-M 40-F-W 6 to 100
Horizontal joints in a wall abutting a floor, ceiling or roof (type C) $t_B \geq 100$ mm (joint depth fully filled)		EI 120-H-M 40-F-W 6 to 100 E 240-H-M 40-F-W 6 to 100
Horizontal joints in a flexible wall abutting a floor, celling or roof (type D) $t_B \geq 25$ mm (joint depth fully filled)	6 to 40	EI 90-T-M 40-F-W 6 bis 40 E 120-T-M 40-F-W 6 bis 40

[a)] In case of a wall thickness $t_E > 150$ mm the mineral wool backfilling may be installed on both sides flush with the surface of the wall with a minimum thickness $t_B \geq 75$ mm and an air gap in between.

3.3 Abbreviations used in drawings

Abbreviation	Description
A	Hilti Firestop Joint Spray CFS-SP WB
B	Backfilling material (mineral wool)
E	Building element (wall, floor)
L_1	Overlap of Hilti Firestop Joint Spray CFS-SP WB
t_A	Thickness of Hilti Firestop Joint Spray CFS-SP WB
t_B	Thickness of backfilling material
t_E	Thickness of the building element / joint depth
w	Joint width

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ANNEX 4

INSTALLATION OF THE PRODUCT

4.1 Instruction for use:

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