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European Technical Assessment

ETA-11/0153
of 28.06.2018

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 Sleeve CFS-SL

Product family to which the construction product belongs

Fire Stopping and Fire Sealing Products:
Penetration Seals

Manufacturer

Hilti AG
Feldkircherstrasse 100
9494 Schaan
LIECHTENSTEIN

Manufacturing plant

Hilti production plant 14

This European Technical Assessment contains

11 pages including Annexes A to C 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 350454-00-1104 "Fire stopping and fire sealing products – Penetration seals"

This European Technical Assessment replaces

European technical approval ETA-11/0153 with validity from 28.06.2013 to 27.06.2018

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Specific parts

1 Technical description of the product

“Hilti Firestop Sleeve CFS-SL” is used as a cable penetration seal based on intumescent material in a steel tube and additional components:

Sleeve	Characteristics
Hilti Firestop Sleeve CFS-SL	consists of a corrugated, electrolytically galvanised steel tube that houses a pair of plastic parts at each end, intumescent wrap strips, and a twistable inner fabric smoke seal; two flanges made from galvanised steel to mount the sleeve to the wall / floor; for details see Annex B of the ETA

Additional component	Characteristics
Hilti Firestop Acrylic Sealant CFS-S ACR	water-based acrylic dispersion, according to Annex B 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 Sleeve CFS-SL” is intended to be used as a cable penetration seal to temporarily or permanently reinstate the fire resistance performance of flexible wall constructions, rigid wall constructions and rigid floor constructions where they have been provided with apertures which are penetrated by various cables. Other parts or service support constructions shall not penetrate the penetration seal. Further details are given in Annex C of the ETA.

The maximum opening size of the penetration seal is Ø 73 mm for sleeve size “S” and Ø 122 mm for sleeve size “M” and size “L”. For more details see Annex C of the ETA.

“Hilti Firestop Sleeve CFS-SL” can be installed only in the types of separating elements as specified in the following table.

Separating element	Construction	Thickness of separating element
Flexible walls	<ul style="list-style-type: none"> > Steel studs or timber studs lined on both faces with minimum 2 layers of boards (minimum thickness 12,5 mm) according to EN 520 type F. > For timber stud walls there must be a minimum distance of 100 mm of the penetration seal to any timber stud. The cavity between the penetration seal and stud has to be closed with minimum of 100 mm of insulation with classification A1 or A2 according to EN 13501-1. > This European Technical Assessment does not cover sandwich panel constructions. 	<ul style="list-style-type: none"> > 100 mm – 200 mm (for Hilti Firestop Sleeve CFS-SL size “S” or “M”) > 200 mm – 300 mm (for Hilti Firestop Sleeve CFS-SL size “L”)

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Rigid walls	<ul style="list-style-type: none">> Aerated concrete, concrete or masonry> Minimum density 650 kg/m³> The rigid wall shall be classified in accordance with EN 13501-2 for the required fire resistance period	<ul style="list-style-type: none">> 100 mm – 200 mm (for Hilti Firestop Sleeve CFS-SL size “S” or “M”)> 200 mm – 300 mm (for Hilti Firestop Sleeve CFS-SL size “L”)
Rigid floors	<ul style="list-style-type: none">> Concrete> Minimum density 550 kg/m³> The rigid floor shall be classified in accordance with EN 13501-2 for the required fire resistance period	<ul style="list-style-type: none">> 150 mm – 200 mm (for Hilti Firestop Sleeve CFS-SL size “S” or “M”)> 250 mm – 300 mm (for Hilti Firestop Sleeve CFS-SL size “L”)

This European Technical Assessment does not cover sandwich panel constructions.

2.2 Use condition

“Hilti Firestop Sleeve CFS-SL” is intended for internal use with humidity lower than 85 % RH excluding temperatures below 0°C, without exposure to rain or UV and can therefore – according to EAD 350454-00-1104 clause 2.2.9.3.1 – be categorized as Type Z₂.

2.3 Working life

The provisions made in this European Technical Assessment are based on an assumed working life of “Hilti Firestop Sleeve CFS-SL” of 10 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 penetration seal are repaired accordingly,
- > the installation of the penetration seal does not affect 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 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 and
- > pneumatic dispatch systems, compressed air systems, etc. are switched off by additional means in case of fire.

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.

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 13501-1:2007+A1:2009	Clause 3.1.1 of the ETA
	Resistance to fire	EN 13501-2:2007+A1:2009	Clause 3.1.2 and Annex C of the ETA
BWR 3	Air permeability	No performance assessed	
	Water permeability	No performance assessed	
	Content, emission and/or release of dangerous substances	No performance assessed	
BWR 4	Mechanical resistance and stability	No performance assessed	
	Resistance to impact / movement	No performance assessed	
	Adhesion	No performance assessed	
	Durability	EAD 350454-00-1104 clause 2.2.9	Clause 3.3.4 of the ETA
BWR 5	Airborne sound insulation	No performance assessed	
BWR 6	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

The components of “Hilti Firestop Sleeve CFS-SL” were assessed according to EAD 350454-00-1104 clause 2.2.1 and classified according to EN 13501-1:2007+A1:2009. The reaction to fire classification of “Hilti Firestop Sleeve CFS-SL” is “E”.

The reaction to fire classification of “Hilti Firestop Acrylic Sealant CFS-S ACR” is “D-s1, d0” in accordance with EN 13501-1.

3.1.2 Resistance to fire

“Hilti Firestop Sleeve CFS-SL” was tested according to EAD 350454-00-1104 clause 2.2.2, EN 1363-1 and EN 1366-3:2009.

Based upon the gained test results and the field of application specified within EN 1363-1 and EN 1366-3:2009 the penetration seal “Hilti Firestop Sleeve CFS-SL” has been classified according to EN 13501-2:2007+A1:2009. The individual fire resistance classes are listed in Annex C of the ETA.

The maximum fire resistance class of the penetration seal in vertical or horizontal separating element depends on the fire resistance class of the penetrating elements. The fire resistance class of the penetration seal is reduced to the fire resistance class of the penetrating element with the lowest fire resistance classification.

The classifications are not valid for sandwich panel constructions.

3.2 Hygiene, health and the environment (BWR 3)

3.2.1 Air permeability

No performance assessed.

3.2.2 Water permeability

No performance assessed.

3.2.3 Content, emission and/or release of dangerous substances

No performance assessed.

3.3 Safety and accessibility in use (BWR 4)

3.3.1 Mechanical resistance and stability

No performance assessed.

3.3.2 Resistance to impact / movement

No performance assessed.

3.3.3 Adhesion

No performance assessed.

3.3.4 Durability

All components of “Hilti Firestop Sleeve CFS-SL” fulfil the requirements for the intended use category.

“Hilti Firestop Sleeve CFS-SL” is therefore appropriate for internal use with humidity lower than 85 % RH excluding temperatures below 0°C, without exposure to rain or UV and can therefore – according to EAD 350454-00-1104 clause 2.2.9.3.1 – be categorized as Type Z₂.

3.4 Protection against noise (BWR 5)

3.4.1 Airborne sound insulation

No performance assessed.

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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/EC¹, amended by Decision 2001/596/EC² 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.

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 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>			

¹ Official Journal of the European Communities no. L 178, 14.7.1999, p. 52
² Official Journal of the European Communities no. L 209, 2.8.2001, p. 33

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.

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by Österreichisches Institut für Bautechnik

The original document is signed by:

Rainer Mikulits
Managing Director

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ANNEX A REFERENCE DOCUMENTS and LIST OF ABBREVIATIONS

A.1 References to standards mentioned in the ETA

- 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

A.2 Abbreviations used in drawings

Abbreviation	Description
A ₁	Hilti Firestop Sleeve CFS-SL
A ₂	Hilti Firestop Sealant CFS-S ACR
C	Services (Cables)
E	Separating element (wall, floor)
t _E	Thickness of the separating element (wall, floor)

ANNEX B

DESCRIPTION OF THE PRODUCT AND PRODUCT LITERATURE OF “HILTI FIRESTOP SLEEVE CFS-SL”:

B.1 Hilti Firestop Sleeve CFS-SL

A detailed specification of the product is contained in document “Identification / Product Specification relating to the European Technical Assessment ETA-11/0153 - Hilti Firestop Sleeve CFS-SL extension” which is a non-public part of this ETA.

The Control Plan is defined in document "Control Plan relating to the European Technical Assessment ETA-11/0153 - Hilti Firestop Sleeve CFS-SL extension" which is a non-public part of this ETA.

B.2 Hilti Firestop Acrylic Sealant CFS-S ACR

A detailed specification of the product is contained in document “Identification / Product Specification relating to the European Technical Assessment ETA-10/0292 and ETA-10/0389 - Hilti Firestop Acrylic Sealant CFS-S ACR” which is a non-public part of this ETA.

The Control Plan is defined in document "Control Plan relating to the European Technical Assessment ETA-10/0292 and ETA-10/0389 - Hilti Firestop Acrylic Sealant CFS-S ACR" which is a non-public part of this ETA.

