



ETA-Danmark A/S  
Göteborg Plads 1  
DK-2150 Nordhavn  
Tel. +45 72 24 59 00  
Internet [www.etadanmark.dk](http://www.etadanmark.dk)

Authorised and notified according  
to Article 29 of the Regulation (EU)  
No 305/2011 of the European  
Parliament and of the Council of 9  
March 2011

MEMBER OF EOTA



## European Technical Assessment ETA-21/0256 of 2021/01/26

### I General Part

**Technical Assessment Body issuing the ETA and designated according to Article 66 of the Regulation (EU) No 305/2011: ETA-Danmark A/S**

**Trade name of the construction product:**

Hilti Firestop Intumescent Sealant CFS-FIL

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

Fire stopping product – penetration seals.

**Manufacturer:**

HILTI Corporation  
Feldkicherstraße 100  
DE-9494 Schaan  
Telephone: +49 1-800-879-8000  
[www.hilti.com](http://www.hilti.com)

**Manufacturing plant:**

HILTI Entwicklungsgesellschaft  
Hiltistraße 6  
DE-86916 Kaufering  
Hilti Production Plant 4a

**This European Technical Assessment contains:**

11 pages including 2 annexes which form an integral part of the document

**This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, based on:**

European Assessment Document (EAD) No. 350454-00-1104, dated September 2017: Fire Stopping and fire sealing products – Penetration seals

**This version replaces:**

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## **II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT**

### **1 Technical description of product and intended use.**

The Hilti Firestop Filler Mastic CFS-FIL is a penetration seal to reinstate the fire resistance performance of a separating element (wall or floor) temporarily or permanently where they have been provided with apertures, which are penetrated by various services such like cable or pipe penetration. It is a water-based 1-component acrylic sealant with intumescent fire protection additives and binder.

The Hilti Firestop Filler Mastic CFS-FIL is available as a cartridge of 310 ml or as a foil pack of 580 ml or as pail of 19 litres. The Control Plan is defined in the document “Control Plan relating to the present ETA - Hilti Firestop Filler Mastic CFS-FIL, which is a non-public part of the ETA. Suitable dispensers: “Hilti CFS-DISP” (for 310 ml cartridge) “Hilti CS 270-P1” (for 580 ml foil pack) “Hilti CD 4-A22” (for 310 ml cartridge or 580 ml foil pack)

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

The construction product Hilti Firestop Filler Mastic CFS-FIL is assessed on the basis of EAD 35054-00-1104, September 2017 as a fire stopping product, penetration seal.

The construction product Hilti Firestop Filler Mastic CFS-FIL is intended for use as a component with a fire protection effect in building elements, assembled systems or constructions that are subject to requirements related to fire protection. Their reactive effect prevents heat transmission and fire spreading in the event of fire.

For the maximum opening size of the penetration see Annex A, clause A.1.

For the separating elements see Annex A, clause A.1.

The separating elements shall be constructed as prescribed in the EN 1366-3:2009 (see 7.2.2 standard supporting constructions).

For the first support of the service see Annex A, clause A.1.

More information in table, section 3: “Performance of the product and references to the methods used for its assessment”.

The intumescent fire sealing products are to be installed according to the manufacturer’s installation manual.

The provisions made in this European Technical Assessment are based on an assumed intended working life of the Hilti Firestop Intumescent Sealant CFS-FIL of 25 years, provided the manufacturers conditions laid down in the manufacturers data sheet for the packaging, transport, storage, installation, use, maintenance and repair are met.

The indications given as to the working life of the construction product cannot be interpreted as a guarantee neither given by the product manufacturer or his representative nor by the Technical Assessment Body issuing an ETA based on the EAD No. 350454-00-1104 but are regarded only as means for expressing the expected economically reasonable working life of the product.

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

Characteristic	Assessment of characteristic
<b>3.1 Safety in case of fire (BWR2)</b>	
Reaction to fire	The product is classified as <b>Class E</b> in accordance with EN 13501-1
Resistance to fire	Classification according to EN 13501-2, see Annex A for further information of fire resistant designs
<b>3.2 Hygiene, health and the environment (BWR3)</b>	
Content, emission and/or release of dangerous substances	The concentration of total emission of VOC: <b>After 3 days: 0,18 mg/m<sup>3</sup></b> <b>After 28 days: 0,06 mg/m<sup>3</sup></b>
Air permeability (material property)	At a pressure of 50 Pa the nominal flow rate is $\leq 2,1 \text{ E-07 m}^3/(\text{h}\cdot\text{m}^2)$ At a pressure of 250 Pa the nominal flow rate is $\leq 1,0 \text{ E-06 m}^3/(\text{h}\cdot\text{m}^2)$
Water Permeability (material property)	<b>No performance assessed</b>
<b>3.3 Safety in use (BWR4)</b>	
Mechanical resistance and stability	<b>No performance assessed</b>
Resistance to impact/movement	<b>No performance assessed</b>
Adhesion	<b>No performance assessed</b>
Durability	Use condition: <b>Y<sub>2</sub></b>
<b>3.4 Protection against noise (BWR5)</b>	
Airborne sound insulation	<b>R<sub>w</sub> (C; C<sub>tr</sub>) = 63 (-3;-8) dB</b>
<b>3.5 Energy Economy and heat retention (BWR6)</b>	
Thermal properties	<b>No performance assessed</b>
Water vapour permeability	<b>No performance assessed</b>

\*) See additional information in section 3.6 – 3.7.

### **3.6 Methods of verification**

The characteristic values of the joint sealing system are based on the EAD 350454-00-1104, September 2017.

### **3.7 General aspects related to the fitness for use of the product.**

The European Technical Assessment is issued for the product based on agreed data/information, deposited with ETA-Danmark, 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 ETA-Danmark before the changes are introduced. ETA-Danmark will decide if such changes affect the ETA and consequently the validity of the CE marking based on the ETA and if so whether further assessment or alterations to the ETA, shall be necessary.

Hilti Firestop Intumescent Sealant CFS-FIL is manufactured in accordance with the provisions of this European Technical Assessment using the manufacturing processes as identified in the inspection of the plant by the notified inspection body and laid down in the technical documentation.

#### **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 of the European Commission, as amended, the system(s) of assessment and verification of constancy of performance is system 1 (see Annex V to Regulation (EU) No 305/2011).

#### **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 at ETA-Danmark prior to CE marking

Issued in Copenhagen on 2021-03-26 by



Thomas Bruun  
Managing Director, ETA-Danmark

### A.1 General Information

- a) Cables (up to 21mm) cover all cable types currently and commonly used in building practice in Europe except non-sheathed cables (wires), tied bundles and waveguides, optical fibre cables are covered.
- b) The classification results obtained using standard wall and floor configurations for cable penetration seals are valid for a penetration seal size equal to or smaller than tested, the maximum opening size is 60 mm. Provided the total amount of cross sections of the cables (core and insulation) does not exceed 60% of the penetration area and the working clearances are not smaller than the minimum working clearances used in the test.
- c) The maximum opening size of the pipe penetration seal is the sum of the outer diameter of the single pipe (up to 60,3 mm) and the annular sealant Hilti Firestop Filler Mastic CFS-FIL around the circular opening in walls and floors.
- d) The pipes and cables are installed perpendicular (90°) to the penetration seal.
- e) The separation between the adjacent single pipe penetration seals is  $\geq 50$  mm.
- f) The separation between adjacent multiple cable penetration seals is  $\geq 200$  mm.
- g) The first support of the service is located at maximum 250 mm away from both faces of wall constructions (separating element) and maximum 300 mm from the upper face of floor constructions (separating element)
- h) For a thicker separating element ( $t_E$ ) than given in this ETA the thickness of the penetration seal ( $t_A$ ) is increased by an equal amount
- i) The pipe end configuration U/C also covers C/C.

#### A.1.1 Rigid wall constructions $t_E \geq 100$ mm

Rigid walls made of concrete, aerated concrete or masonry with a minimum density of 550 kg/m<sup>3</sup>, a minimum thickness of 100 mm.

#### A.1.2 Rigid floor $t_E \geq 150$ mm

Rigid walls made of concrete, aerated concrete or masonry with a minimum density of 550 kg/m<sup>3</sup>, a minimum thickness of 150 mm.

The separating elements shall be constructed as prescribed in the EN 1366-3:2009 (see 7.2.2 standard supporting constructions)

Hilti Firestop Intumescent Sealant CFS-FIL	Annex A
Resistance to fire classification of penetration seals	

### A.2 Penetration seal for rigid walls $\geq 100$ mm

Hilti Firestop Filler Mastic CFS-FIL(A) applied in full dept of the separating element (E), thickness ( $t_A$ )  $\geq 100$  mm.

Minimum distances between the cables (mm) acc. A.1

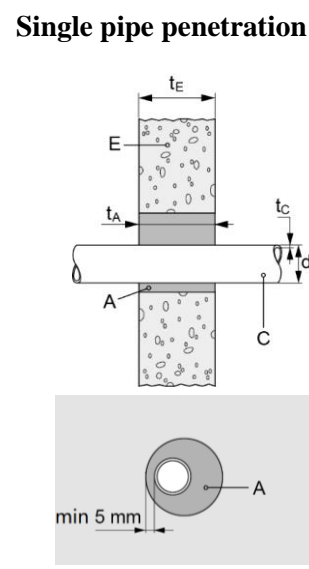
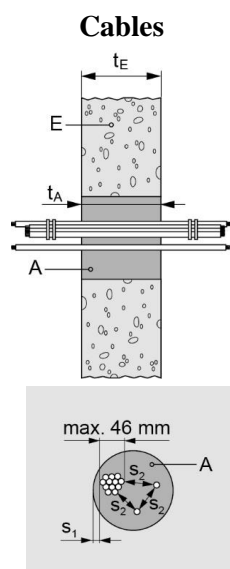
Single/multiple cable to single/multiple cable	$S_2 = 0$
Single cable or multiple cable to edge of aperture; see A.1 b)	$S_1 = 0$

Minimum distances between the penetrations (mm) acc. A.1

CPVC pipe to CPVC pipe penetration	50
Single/multiple cable(s) penetration to other services	200

#### A.2.1 Construction details

For abbreviations see the related text and Annex Fejl! Henvisningskilde ikke fundet. of the ETA.



#### A.2.2 Cables<sup>1</sup>

	Classification
single cable diameter up to $\varnothing 21$ mm (small cables, see A.1 a))	EI 90 E 120
multiple cables (single cable diameter max. $\varnothing 21$ mm. small cables, see A.1 a)), up to a bundle of $\varnothing 46$ mm with zero distance between the cables	EI 90 E 120

<sup>1</sup> the total amount of cross sections of the cables (core and insulation) does not exceed 60% of the penetration area acc. A.1 b)

Hilti Firestop Intumescent Sealant CFS-FIL	Annex A
Resistance to fire classification of penetration seals	



<b>A.2.3 Single pipe penetrations</b>				
CPVC Blazemaster: The width of the annular gap is min <b>5 mm</b> , max. <b>25 mm</b>				
Pipe			Opening size	Classification
	diameter ( $d_c$ ) [mm]	wall thickness ( $t_c$ ) [mm]	max. ( $d_c + 25$ ) [mm]	
Blazemaster 25	33,4	2,7	58,4	EI 120 U/C
Blazemaster 32	42,2	3,4	67,2	EI 120 U/C
Blazemaster 50	60,3	4,7	85,3	EI 120 U/C

CPVC Spears EverTuff: The width of the annular gap is min <b>5 mm</b> , max. <b>25 mm</b>				
Pipe			Opening size	Classification
	diameter ( $d_c$ ) [mm]	wall thickness ( $t_c$ ) [mm]	max. ( $d_c + 25$ ) [mm]	
Spears EverTuff ½"	15,88	1,98	40,88	EI 120 U/C
Spears EverTuff 1"	28,58	2,85	53,58	EI 120 U/C
Spears EverTuff 2"	53,98	5,19	78,98	EI 120 U/C

Hilti Firestop Intumescent Sealant CFS-FIL	Annex A
Resistance to fire classification of penetration seals	

### A.3 Penetration seal for rigid floors $\geq 150$ mm

Hilti Firestop Filler Mastic CFS-FIL (A) applied in full depth of the separating element (E), thickness ( $t_A$ )  $\geq 150$  mm.

Minimum distances between the services (mm) acc. A.1

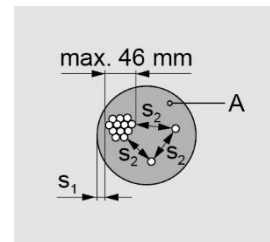
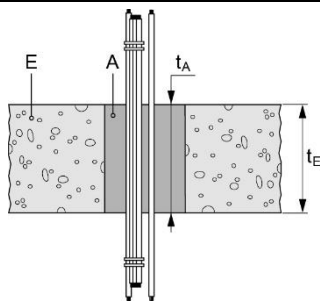
Single/multiple cable(s) to single/multiple cable(s)	$S_2 = 0$
Single/multiple cable(s) to edge of aperture; see A.1 b)	$S_1 = 0$

Minimum distances between the penetrations (mm) acc. A.1

Cable or multiple cable penetration and other services	200
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#### A.3.1 Construction details

##### Cables



For abbreviations see the related text and Annex **Fejl! Henvisningskilde ikke fundet.** of the ETA.

#### A.3.2 Cables<sup>2</sup>

	Classification
single cable diameter up to $\varnothing 21$ mm (small cables, see A.1 a))	EI 120
multiple cables (single cable diameter max. $\varnothing 21$ mm. small cables, see A.1 a)), up to a bundle of $\varnothing 46$ mm with zero distance between the cables	EI 120

<sup>2</sup> the total amount of cross sections of the cables (core and insulation) does not exceed 60% of the penetration area acc. A.1 b)

Hilti Firestop Intumescent Sealant CFS-FIL	Annex A
Resistance to fire classification of penetration seals	

Abbreviation	Description drawings
A	Hilti Firestop Filler Mastic CFS-FIL
E	separating element (wall, floor)
C	penetration/service element (Pipe, cable)
s <sub>1</sub> , s <sub>2</sub>	Distances
t <sub>A</sub>	Thickness (depth) of penetration seal
t <sub>E</sub>	Thickness of the separating element
d <sub>C</sub>	Pipe diameter (nominal outside diameter) for pipes
t <sub>C</sub>	Pipe wall thickness

Hilti Firestop Intumescent Sealant CFS-FIL	Annex B
Abbreviations used in drawings.	