

UL INTERNATIONAL (UK) LTD  
 Kingsland Business Park,  
 Unit 1-3 Horizon,  
 Wade Rd,  
 Basingstoke RG24 8AH,  
 United Kingdom

appointed according to Article 29 of Construction Products Regulation 2011 as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020

## UK Technical Assessment

**0843-UKTA-22/0049**  
**of 31/03/2023**

### Technical Assessment Body Issuing the UKTA:

UL International (UK) Ltd

### Trade name of the construction product

Hilti Firestop Filler Mastic CFS-FIL

### Product family to which the construction product belongs

Fire Stopping and Fire Sealing Products - Penetration Seals

### Manufacturer

Hilti Corporation  
 Feldkircherstrasse 100  
 9494 Schaan  
 LIECHTENSTEIN

### Manufacturing plant(s)

HILTI production plant 4a

### This UK Technical Assessment contains

13 pages including Annexes A and B which form an integral part of this assessment

### This UK Technical Assessment\* is issued, on the basis of

EAD 350454-00-1104, September 2017

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

Communication of this UK Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may be made, with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

\* in accordance with Construction Products Regulation 2011 as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020

Content

1 Technical description of the product ..... 3

2 Specification of the intended use(s) in accordance with the applicable UK Assessment Document (Pre-Exit European Assessment Document): EAD 350454-00-1104 ..... 3

3 Performance of the product and references to the methods used for its assessment ..... 4

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base ..... 7

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD ..... 7

ANNEX A: RESISTANCE TO FIRE CLASSIFICATION OF PENETRATION SEALS ..... 9

ANNEX 2: ABBREVIATIONS USED IN DRAWINGS ..... 13

## **SPECIFIC PARTS OF THE UK TECHNICAL ASSESSMENT**

### **1 Technical description of the product**

Hilti Firestop Filler Mastic CFS-FIL is a penetration seal used 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 as cable or pipe penetrations. 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 UKTA - Hilti Firestop Filler Mastic CFS-FIL, which is a non-public part of the UKTA. 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 UK Assessment Document (Pre-Exit European Assessment Document): EAD 350454-00-1104**

The construction product Hilti Firestop Filler Mastic CFS-FIL is assessed on the basis of EAD 350454-00-1104, 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 EN 1366-3 (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 UK 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 a UKTA 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.

The UK Technical Assessment is issued for the product on the basis of agreed data/information, deposited with UL International (UK) Ltd, 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 UL International (UK) Ltd before the changes are introduced.

UL International (UK) Ltd will decide whether or not such changes affect the UK Technical Assessment and consequently the validity of the UKCA marking on the basis of the UK Technical Assessment and if so whether further Assessment or alterations to the UK Technical Assessment, shall be necessary.

## 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	Clause 3.1.1 of this UKTA
	Resistance to fire	EN 13501-2	See Clause 3.1.2 and Annex A of this UKTA
<b>BWR 3</b>	Air permeability	EN 1026 EN 12211	Clause 3.2.1 of this UKTA
	Water permeability	No performance assessed	
	Content and/or release of dangerous substances	Declaration of conformity by the manufacturer	
<b>BWR 4</b>	Mechanical resistance and stability	No performance assessed	
	Resistance to impact/movement	No performance assessed	
	Adhesion	No performance assessed	
	Durability	Clause 3.3.4 of this UKTA	
<b>BWR 5</b>	Airborne sound insulation	EN ISO 10140-1 EN ISO 10140-2 EN ISO 717-1	Clause 3.4.1 of this UKTA
<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 Filler Mastic CFS-FIL” is classified ‘E’ in accordance with EN 13501-1.

#### **3.1.2 Resistance to fire**

The resistance to fire performance according to EN 13501-2 of penetration seals made of “Hilti Firestop Filler Mastic CFS-FIL” is given in Annex A.

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

#### **3.2.1 Air permeability**

The air permeability of “Hilti Firestop Filler Mastic CFS-FIL” with a thickness of 25 mm on both sides of the wall was tested according to EN 1026:2000 and EN 12211:2000 in a timber stud drywall system. The dimension of the tested joint was 700 mm x 25 mm.

Up to a pressure difference of 6000 Pa no air permeability was measured.

#### **3.2.2 Water permeability**

No performance assessed.

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

The manufacturer has provided a declaration on the content, emission and/or release of dangerous substances in relation to their products with the title “Statement on Product Regulatory Compliance: Version 1.1 October 2022).

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

### 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

"Hilti Firestop Filler Mastic CFS-FIL" is intended for use at temperatures below 0°C, but with no exposure to rain nor UV and can therefore - according to EAD 350454-00-1104 clause 2.2.9.3.1 - be categorized as Type Y<sub>2</sub>. Since the requirements for Type Y<sub>2</sub> are met, also the requirements for Type Z<sub>1</sub> and Z<sub>2</sub> are fulfilled.

Although a penetration seal is intended for indoor applications only, the construction process may result in it being subjected to more exposed conditions for a period before the building envelope is closed. For this case provisions shall be made to protect temporarily exposed penetration seals according to the UKTA-holder's installation instructions.

### 3.4 Protection against noise (BWR 5)

#### 3.4.1 Airborne sound insulation

Test reports for airborne sound insulation according to EN ISO 10140-1:2010+A1:2012+A2:2014, EN ISO 10140-2:2010 and EN ISO 717-1:2013 have been provided. The tests were performed in a metal stud partition with an opening of Ø100mm. The opening was filled with a Ø60 mm pipe penetration sealed with mineral wool and "Hilti Firestop Filler Mastic CFS-FIL". The "Hilti Firestop Filler Mastic CFS-FIL" was applied to a depth of approximately 13mm to both sides of the wall.

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

R <sub>w</sub> in dB	C in dB	C <sub>tr</sub> in dB
63	-3	-8

### 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 Statutory Instrument 2019 No. 465 – made 5th March 2019 and cited as the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and coming into force on exit day and Statutory Instrument 2020 No. 1359 – made 26th November 2020 and cited as the Construction Products (Amendment etc.) (EU Exit) Regulations 2020 and coming into force immediately before the 2019 Regulations come into force, on the procedure for attesting the conformity of construction products as regards fire stopping, fire sealing and fire protective products, published as 'Pre-Exit' European Assessment Documents, (see <https://www.gov.uk/guidance/pre-exit-european-assessment-documents-construction-products>), the system of assessment and verification of constancy of performance (see Annex V to Construction Products Regulation 2011 as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020) given in the following table(s) apply.

Product(s)	Intended use(s)	Level(s) or class(es)	System
Fire Stopping and Fire Sealing Products	For fire compartmentation and/or fire protection or fire performance	any	1

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

Tasks of the manufacturer:  
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 ensure that the product is in conformity with this UK Technical Assessment.

The manufacturer may only use initial / raw / constituent materials stated in the technical documentation of this UK Technical Assessment.

The factory production control shall be in accordance with the Control Plan of 16/12/2021 relating to the UK Technical Assessment 0843-UKTA-22/0049 issued on 31/03/2023 which is part of the technical documentation of this UK technical Assessment. The "Control Plan" is laid down in the context of the factory production control system operated by the manufacturer and deposited at UL International (UK) Ltd.

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

Other tasks of the manufacturer  
Additional information

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

(a) Technical data sheet:

- Field of application:
- Building elements for which the penetration seal is suitable, type and properties of the building elements like minimum thickness, density, and - in case of lightweight constructions – the construction requirements.
- Limits in size, minimum thickness etc. of the penetration seal
- 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.
- Services which the penetration seal is suitable, type and properties of the services like material, diameter, thickness etc. in case of pipes including insulation materials; necessary/allowed supports/fixings (e.g. pipe trays)

(b) Installation instruction:

- Steps to be followed
- Procedure in case of retrofitting
- Stipulations on maintenance, repair and replacement

**Issued on: 31<sup>st</sup> March 2023**

Report by:



C. Sweeney  
Project Engineer Associate  
Built Environment

**For and on behalf of UL International (UK) Ltd.**

Reviewed by:



D. Yates  
Senior Project Engineer  
Built Environment



## ANNEX A: RESISTANCE TO FIRE CLASSIFICATION OF PENETRATION SEALS

A.1	General Information
	<p>a) Cables (up to 21mm) cover all cable types currently and commonly used in building practice in the UK except non-sheathed cables (wires), tied bundles and waveguides, optical fibre cables are covered.</p> <p>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.</p> <p>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.</p> <p>d) The pipes and cables are installed perpendicular (90°) to the penetration seal.</p> <p>e) The separation between the adjacent single pipe penetration seals is <math>\geq 50</math> mm.</p> <p>f) The separation between adjacent multiple cable penetration seals is <math>\geq 200</math> mm.</p> <p>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)</p> <p>h) For a thicker separating element (<math>t_E</math>) than given in this UKTA the thickness of the penetration seal (<math>t_A</math>) is increased by an equal amount</p> <p>i) The pipe end configuration U/C also covers C/C.</p>

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 EN 1366-3:2009 (see 7.2.2 standard supporting constructions)

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

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

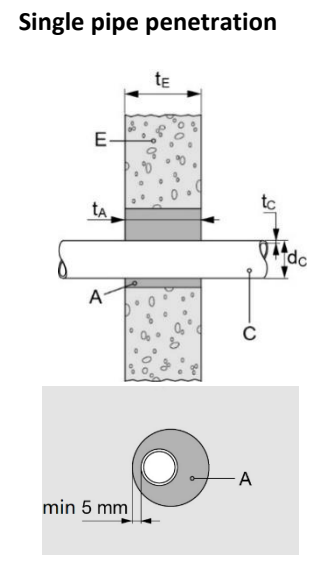
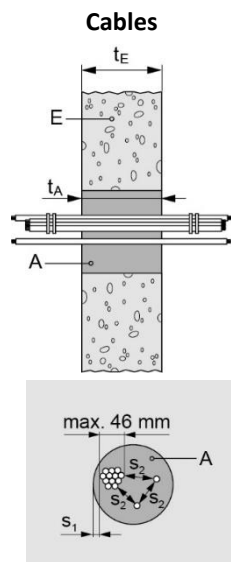
Minimum distances between the cables (mm) acc. A.1

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 **Error! Reference source not found.** of the UKTA.

### 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)

<b>A.2.3 Single pipe penetrations</b>					
		<b>CPVC Blazemaster: The width of the annular gap is min 5 mm, max. 25 mm</b>			
		Pipe		Opening size	Classification
		diameter (d <sub>c</sub> ) [mm]	wall thickness (t <sub>c</sub> ) [mm]	max. (d <sub>c</sub> + 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

		<b>CPVC Spears EverTuff: The width of the annular gap is min 5 mm, max. 25 mm</b>			
		Pipe		Opening size	Classification
		diameter (d <sub>c</sub> ) [mm]	wall thickness (t <sub>c</sub> ) [mm]	max. (d <sub>c</sub> + 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

### 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

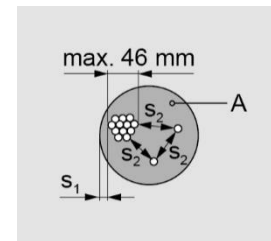
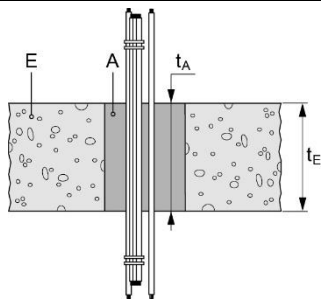
Single/multiple cable(s) to single/multiple cable(s)	$S_2 = 0$
Single/multiple cable(s) to edge of aperture; see A.1 b)	$S_1 = 0$

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

Cable or multiple cable penetration and other services	200
--	-----

#### A.3.1 Construction details

##### Cables



For abbreviations see the related text and Annex **Error! Reference source not found.** of the UKTA.

#### 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)

**ANNEX 2: ABBREVIATIONS USED IN DRAWINGS**

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