

# DECLARATION OF PERFORMANCE

according to Annex III of the Regulation (EU) Nr. 305/2011 (Construction Products Regulation)

## Hilti Firestop Cushion CFS-CU

No. Hilti CFS-CU

**1. Unique identification code of the product-type:**

Hilti Firestop Cushion CFS-CU

**2. Intended use:**

Fire Stopping and Sealing Product for Penetration Seals, see ETA-20/0991 (28.12.2020)

Cable penetrations	Cables, cable bundles, Conduits
Pipe penetrations	Plastic Pipes
Mixed penetrations	Cables, Cable trays, Plastic pipes

**3. Manufacturer:**

Hilti Corporation, Feldkircherstrasse 100, 9494 Schaan, Principality of Liechtenstein

**4. System of AVCP:**

System 1

**5. European Assessment Document:**

EAD 350454-00-1104 "Fire stopping and fire sealing products – Penetrations seals"

**European Technical Assessment:**

ETA-20/0991 (28.12.2020)

**Technical Assessment Body:**

OIB

**Notified body/s:**

MPA-Braunschweig, No. 0761

**6. Declared performance:**

Essential characteristic	Declared performance / Harmonised technical specification
Reaction to fire	Class B-s1, d0 according to EN 13501-1.
Resistance to fire	Resistance to fire performance and field of application in accordance with EN 13501-2. See Annex
Durability and serviceability	Z <sub>2</sub> in accordance with EAD 350454-00-1104
Mechanical resistance and stability	Soft body impact: 300 Nm, Hard body impact: 10Nm

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Dr. Christoph Aubauer  
Global Product Manager  
Business Unit Fire Protection  
Hilti Corporation

Martin Althof  
Head of Quality  
Business Unit Fire Protection  
Hilti Corporation

# Extract of ETA-20/0991 (28.12.2020)

## Intended Use

### 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 13501-1:2007		Clause 3.1.1 of the ETA
	Resistance to fire	EN 13501-2:2007		Clause 3.1.2 of the ETA
<b>BWR 3</b>	Air permeability	No performance assessed		
	Water permeability	No performance assessed		
	Content, emission and/or release of dangerous substances	No performance assessed		
<b>BWR 4</b>	Mechanical resistance and stability	No performance assessed		
	Resistance to impact / movement	EOTA TR 001:2003	Clause 3.3.2 of the ETA	
	Adhesion	No performance assessed		
	Durability	EOTA TR 024:2006	Clause 3.3.4 of the ETA	
<b>BWR 5</b>	Airborne sound insulation	No performance assessed		
<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 Cushion CFS-CU" is classified 'B-s1, d0' in accordance with EN 13501-1.

##### 3.1.2 Resistance to fire

"Hilti Firestop Cushion CFS-CU" has been tested in accordance with prEN 1366-3, installed within apertures in flexible walls (drywalls), rigid walls (masonry) and concrete floors.

The classification of the resistance to fire performance has been carried out in accordance with clause 7.5.8 in EN 13501-2:2007. Penetration seals made from Hilti Firestop Cushion CFS-CU with additional materials and services are classified according to combinations of performance parameters and classes as shown in Annex C. The classifications are valid for services running through openings of maximum dimensions  $w \times h = 1200 \text{ mm} \times 1500 \text{ mm}$ , in flexible and rigid walls with minimum thickness  $t_e = 100 \text{ mm}$  and concrete floors up to 700 mm wide (length may be unlimited subject to a minimum length to seal area ratio of 4,86:1 m/m<sup>2</sup>) with minimum thickness of 150 mm.

The classifications are not valid for sandwich panel constructions.

An aperture framing made from gypsum board must be fixed inside openings in flexible wall constructions. The frame must be made of gypsum boards 12,5 mm thick on each side of the opening fixed by minimum 2 metal screws per side.

### **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**

Hilti Firestop Cushion CFS-CU have been tested in accordance with EOTA Technical Report - TR001 – Edition February 2003 at dimensions of 1500 mm x 1200 mm and without penetrating services.

The results demonstrate suitability for the following foreseen applications in accordance with EOTA Technical Report - TR001: A.1:

- Zones accessible primarily to those with high incentive to exercise care. Small risk of accidents occurring and of misuse.
- Zones accessible primarily to those with some incentive to exercise care. Some risk of accidents occurring and of misuse.
- Zones readily accessible to public and others with little incentive to exercise care. Risk of accidents occurring and of misuse.

#### **3.3.3 Adhesion**

No performance assessed.

#### **3.3.4 Durability**

"Hilti Firestop Cushion CFS-CU" has been tested in accordance with EOTA Technical Report TR024 for the intended use condition.

"Hilti Firestop Cushion CFS-CU" is therefore appropriate for use in internal conditions 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 1.2.1 - be categorized as Type Z<sub>2</sub>.

## ANNEX C

### RESISTANCE TO FIRE CLASSIFICATION OF PENETRATION SEALS MADE OF “HILTI FIRESTOP CUSHION CFS-CU”

**C.1 Flexible wall constructions and rigid wall constructions according to clause 2.1 of the ETA with wall thickness  $t_E$  of minimum 100 mm**

Penetration seal / Services	Classification	
		<b>with additional cable wrapping</b> Additional Hilti Firestop cushion wrapped around cables for an extension of the seal depth by 150 mm on both sides of the seal
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables up to 80 mm diameter)	EI 45 / E 120	EI 120
Tied bundles of up to 80 mm overall diameter containing up to 21 mm diameter sheathed electrical/telecommunication/optical fibre cables	EI 45 / E 120	EI 120
All non-sheathed electrical cables up to 24 mm diameter	EI 45 / E 120	EI 120
All steel or plastic conduits up to 16 mm diameter	EI 45 / E 120 U/U	EI 120 U/U
PVC-U pipes according to EN 1452-1 and DIN 8061/8062 arranged linear, diameter Ø50 mm with wall thickness between 1,8 mm and 5,3 mm.	EI 120 U/C	---

**C.2 Rigid wall constructions according to clause 2.1 of the ETA with wall thickness  $t_E$  of minimum 150 mm**

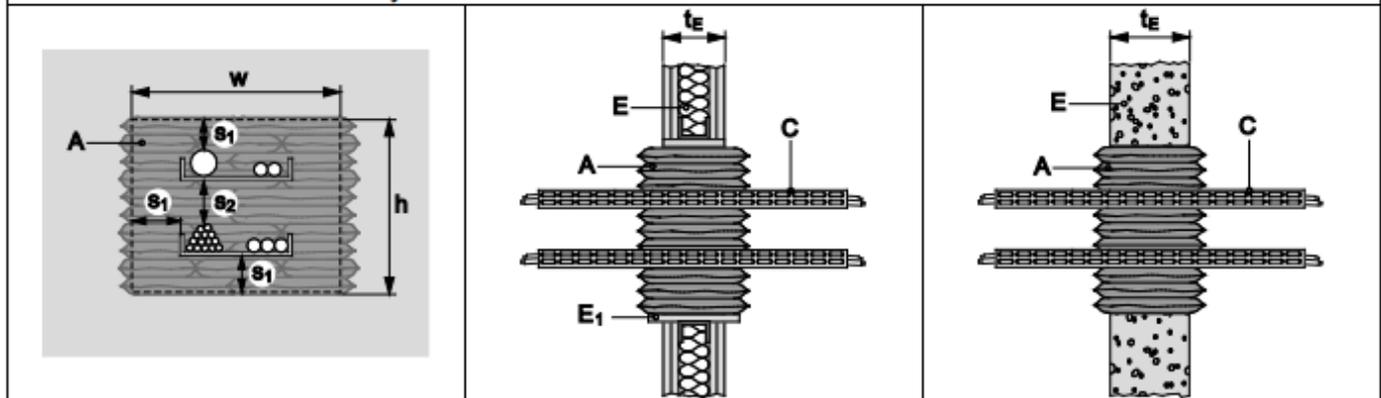
Penetration seal / Services	Classification	
		<b>with additional cable wrapping</b> Additional Hilti Firestop cushion wrapped around cables for an extension of the seal depth by 150 mm on both sides of the seal
All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables up to 80 mm diameter)	EI 60 / E 240	EI 120 / E 240
Bundles of up to 80 mm overall diameter containing up to 21 mm diameter sheathed electrical/ telecommunication/optical fibre cables	EI 60 / E 240	EI 120 / E 240
All non-sheathed electrical cables up to 24 mm diameter	EI 60 / E 240	EI 120 / E 240
All steel or plastic conduits up to 16 mm diameter	EI 45 / E 240 U/U	EI 120 / E 240 U/U
PVC-U pipes according to EN 1452-1 and DIN 8061/8062 arranged linear, diameter Ø50 mm with wall thickness between 1,8 mm and 5,3 mm.	EI 240 U/C	---

**Construction details:**

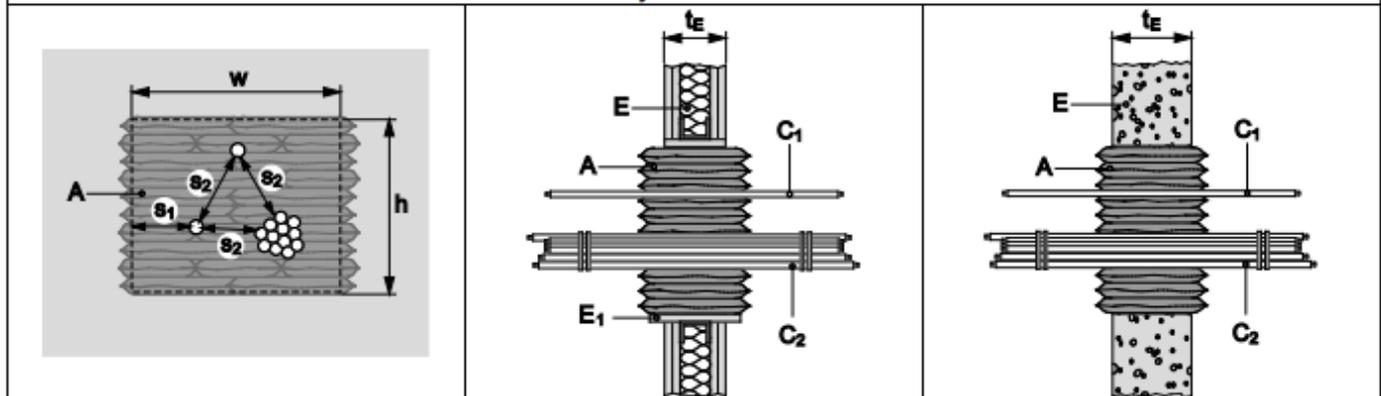
Cable support construction: Perforated metal cable trays with a melting point higher than 1100°C (e.g. galvanised steel, stainless steel). Trays with organic coatings are covered if their overall classification is minimum A2 according to EN 13501-1.

Minimum distance (mm):			
Cables/cable tray to seal edge ( $s_1$ ):	40	Cable to seal edge ( $s_1$ ):	40
Cables to cable tray ( $s_2$ ):	80	Cable to cable ( $s_2$ ):	0
Plastic pipe to seal edge ( $s_1$ ):	100	Cable to cable bundle ( $s_2$ ):	80
Plastic pipe to plastic pipe: ( $s_2$ ):	100		
Plastic pipe to cable tray ( $s_2$ ):	175		

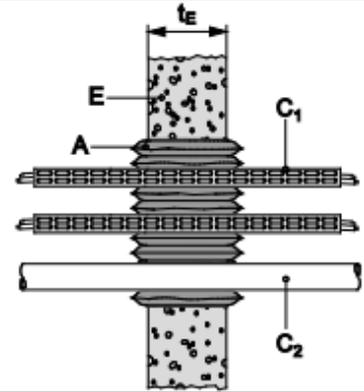
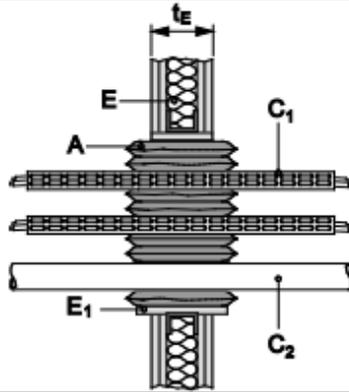
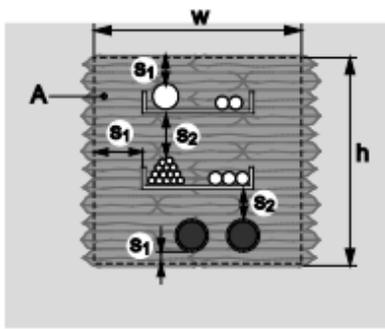
**Cables/conduits on cable trays:**



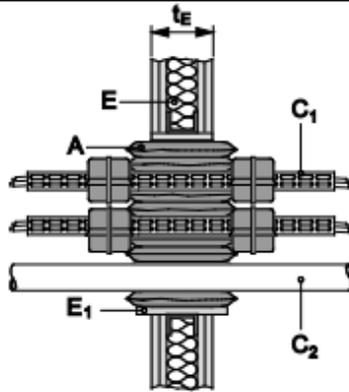
**Cables/cable bundles/conduits without cable tray:**



Cable trays/plastic pipes:

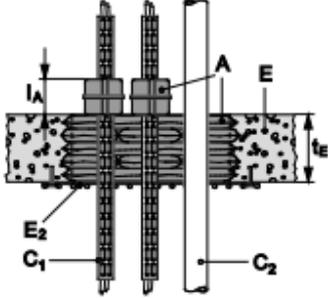
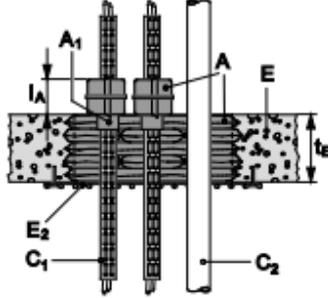


Additional cable wrapping  
(see Installation Instructions for details):



For explanation of abbreviations see the related text and Annex D

**C.3 Rigid floor constructions according to clause 2.1 of the ETA with floor thickness  $t_E$  of minimum 150 mm**

Penetration seal / Services	Classification	
	<p><b>with additional cable wrapping</b> (<math>l_A = 150\text{mm}</math>)</p>	<p><b>with additional cable wrapping</b> (<math>l_A = 150\text{mm}</math>)</p> <p><sup>1)</sup> (<math>l_A = 300\text{mm}</math>)</p> <p><b>+ Hilti Firestop Acrylic Sealant CFS-S ACR (A<sub>1</sub>)</b></p>
		
<p>All sheathed cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical fibre cables with a diameter of:</p>		
<p>Maximum <math>\varnothing</math> 21 mm</p>	<p>EI 120</p>	<p>EI 120</p>
<p><math>21 \leq \varnothing \leq 90</math> mm</p>	<p>EI 60 / E 120</p>	<p>EI 90 EI 120 <sup>1)</sup></p>
<p>Bundles of up to 80 mm overall diameter containing up to 21 mm diameter sheathed electrical/ telecommunication/optical fibre cables</p>	<p>EI 60 / E 120</p>	<p>EI 90 / E 120</p>
<p>All non-sheathed electrical cables up to 24 mm diameter</p>	<p>EI 60 / E 120</p>	<p>EI 120 / E 240</p>
<p>All steel or plastic conduits up to 16 mm diameter</p>	<p>EI 60 / E 120 U/U</p>	<p>EI 120 / E 240 U/U</p>
<p>PVC-U pipes (C) according to EN 1452-1 and DIN 8061/8062 arranged linear, diameter <math>\varnothing</math>50 mm with wall thickness between 1,8 mm and 5,3 mm.</p>	<p>EI 120 U/C</p>	<p>---</p>

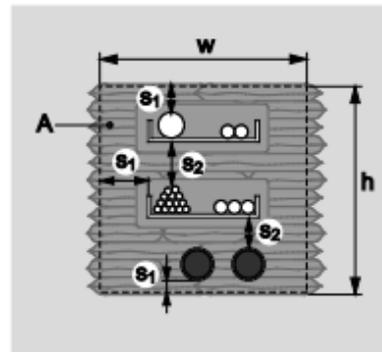
## Construction detail:

Cable support construction: Perforated metal cable trays with a melting point higher than 1100°C (e.g. galvanised steel, stainless steel). Trays with organic coatings are covered if their overall classification is minimum A2 according to EN 13501-1.

Minimum distance (mm):

Cables/cable tray to seal edge ( $s_1$ ):	40
Cables to cable tray ( $s_2$ ):	80
Plastic pipe to seal edge ( $s_1$ ):	40
Plastic pipe to plastic pipe: ( $s_2$ ):	100
Plastic pipe to cable tray ( $s_2$ ):	50

Cable to seal edge ( $s_1$ ):	40
Cable to cable ( $s_2$ ):	0
Cable to cable bundle ( $s_2$ ):	80



For explanation of abbreviations see the related text and Annex D

## ANNEX D

### ABBREVIATIONS USED IN DRAWINGS

Abbreviation	Description
A, A <sub>1</sub> , A <sub>2</sub> ,...	Firestop product
C, C <sub>1</sub> , C <sub>2</sub>	Penetration Service
E	Building element (wall, floor)
E <sub>1</sub>	Supporting board
E <sub>2</sub>	Wire mesh
t <sub>E</sub>	Thickness of building element (wall, floor)
t <sub>E1</sub>	Length of supporting board
w	width
h	height
l <sub>A</sub>	length Firestop product (additional)