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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-22/0046 of 31/03/2023

### Technical Assessment Body Issuing the UKTA:

UL International (UK) Ltd

### Trade name of the construction product

Hilti Firestop Acrylic Sealant CFS-S ACR

### Product family to which the construction product belongs

Fire Stopping and Fire Sealing Products – Linear Joint and Gap Seals

### Manufacturer

Hilti Corporation  
 Feldkircherstrasse 100  
 9494 Schaan  
 LIECHTENSTEIN

### Manufacturing plant(s)

HILTI production plant 4a

### This UK Technical Assessment contains

27 pages including Annexes 1 to 3 which form an integral part of this assessment

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

EAD 350141-00-1106, 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.

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\* 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

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

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

“Hilti Firestop Acrylic Sealant CFS-S ACR” is a sealant used to form a linear joint or gap seal with mineral wool, “Hilti Firestop Round Cord CFS-CO” or combustible material as backfilling material. For details of the seal design depending on orientation, building elements forming the joint/gap or backfilling material and the related classifications see Annex 3 of the UKTA.

For further details on “Hilti Firestop Acrylic Sealant CFS-S ACR”, “Hilti Firestop Round Cord CFS-CO” and for a specification of suitable backfilling material see Annex 3 of the ETA.

### **2 Specification of the intended use(s) in accordance with the applicable UK Assessment Document (Pre-Exit European Assessment Document): EAD 350141-00-1106**

#### **2.1 Intended use**

The intended use of “Hilti Firestop Acrylic Sealant CFS-S ACR” is to reinstate the fire resistance performance of flexible wall constructions, rigid wall constructions, rigid floor constructions and horizontal and vertical steel constructions at linear gaps/joints within those constructions or where they are abutting another wall or floor construction.

The specific elements of construction between which “Hilti Firestop Acrylic Sealant CFS-S ACR” may be used to provide a linear joint seal, are:

- Flexible walls
- Rigid walls
- Rigid floors
- Steel constructions

For detail specifications of construction elements see Annex 3 of the UKTA.

The supporting construction must be classified in accordance with EN 13501-2 for the required fire resistance period.

#### **2.2 Use category**

“Hilti Firestop Acrylic Sealant CFS-S ACR” has been tested in accordance with EOTA TR 024, table 4.2 for the Y<sub>2</sub> use category specified in EAD 350141-00-1106 and the results of the test have demonstrated suitability for linear joint and gap seals intended for use at temperatures below 0°C, but with no exposure to rain or UV.

#### **2.3 Working life**

The provisions made in this UK Technical Assessment are based on an assumed working life of “Hilti Firestop Acrylic Sealant CFS-S ACR” 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 seal are repaired accordingly.

## **2.5 Manufacturing**

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.

## **2.6 Installation**

The product shall be installed and used as described in this UK Technical Assessment. Additional marking of the linear joint or gap seal shall be done in case of national requirements.

## 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	Clause 3.1.2 of this UKTA
<b>BWR 3</b>	Air permeability	EN 1026:2000	Clause 3.2.1 of this UKTA
	Water permeability	Annex C of EAD 350141-00-1106	Clause 3.2.2 of this UKTA
	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	EN ISO 11600	Clause 3.3.3 of this UKTA
<b>BWR 5</b>	Airborne sound insulation	EN ISO 10140-1	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 Acrylic Sealant CFS-S ACR” and associated products are classified according to EN 13501-1 as below:

Component	Class according to EN 13501-1:2010
Hilti Firestop Acrylic Sealant CFS-S ACR	D, s1, d0
Hilti Firestop Round Cord CFS-CO	A1
Backfilling mineral wool	A1
Backfilling material, combustible, based on PE or PU	F

#### 3.1.2 Resistance to fire

“Hilti Firestop Acrylic Sealant CFS-S ACR” has been tested in accordance with EN 1366-4:2010, installed within linear joints in flexible and rigid walls, steel constructions and floors. As backfilling material mineral wool “Rockwool RP-V” and “Terमारock 40” has been used as well as “Hilti Firestop Round Cord CFS-CO”.

Based upon these test results and the field of direct application specified within EN 1366-4:2010, “Hilti Firestop Acrylic Sealant CFS-S ACR” has been classified in accordance with EN 13501-2, as shown in Annex 3 of the UKTA.

For details of suitable wall and floor constructions see Annex 3 of the UKTA.

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

#### 3.2.1 Air permeability

The air permeability of “Hilti Firestop Acrylic Sealant CFS-S ACR” with a thickness of 25 mm on both sides of the wall was tested according to EN 1026:2000 and EN 12211:2000 in an aerated concrete wall. The dimension of the tested joint was 1000 mm x 50 mm.

Up to a pressure difference of 9700 Pa no air permeability was measured.

#### 3.2.2 Water permeability

Water permeability has been tested using the principles of the test procedure according to Annex C of EAD 350141-00-1106. The specimen consisted of 2 mm “Hilti Firestop Acrylic Sealant CFS-S ACR” (dry film thickness) on mineral wool. Test result: Water tight to 1000 mm head of water.

#### 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

Adhesion is covered by tests for determining movement capability according to EN ISO 11600.

### 3.4 Protection against noise (BWR 5)

#### 3.4.1 Airborne sound insulation

Test reports from noise reduction 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 joint (length 1200mm, depth 100mm, width 25mm) in a rigid wall backfilled with compressed mineral wool. Installation depth of “Hilti Firestop Acrylic Sealant CFS-S ACR” was 12mm on both sides of the wall.

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

<b>R<sub>s,w</sub> in dB</b>	<b>C in dB</b>	<b>C<sub>tr</sub> in dB</b>
64	-2	-7

### 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.

### 3.6 General aspects relating to fitness for use

All components of “Hilti Firestop Acrylic Sealant CFS-S ACR” fulfil the requirements for the intended use category.

“Hilti Firestop Acrylic Sealant CFS-S ACR” is therefore appropriate for use at temperatures below 0°C, but with no exposure to rain or UV and can therefore – according to EAD 350141-00-1106 clause 2.2.12 – 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.

**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 30/11/2021 relating to the UK Technical Assessment 0843-UKTA-22/0046 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 linear joint and gap 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 linear joint and gap seal
- Construction of the linear joint and gap seal including the necessary components and additional products (e.g. backfilling material) with clear indication whether they are generic or specific.

(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:



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

Reviewed by:



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## ANNEX 1: REFERENCE DOCUMENTS and LIST OF ABBREVIATIONS

### 1.1 References to standards mentioned in the UKTA

EN 1026	Windows and doors – Air permeability – Test method
EN 1363-1	Fire resistance tests – Part 1: General Requirements
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 717-1	Acoustics – Rating of sound insulation of buildings and of building elements – Part 1: Airborne sound insulation
EN ISO 10140-1	Acoustics - Laboratory measurement of sound insulation of building elements - Part 1: Application rules for specific products
EN ISO 10140-2	Acoustics - Laboratory measurement of sound insulation of building elements -Part 2: Measurement of airborne sound insulation
EN ISO 10140-3	Acoustics - Laboratory measurement of sound insulation of building elements -Part 3: Measurement of impact 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

### 1.3 Abbreviations used in drawings

Abbreviation	Description
A, A <sub>1</sub>	Hilti Firestop Acrylic Sealant CFS-S ACR
B	Backfilling material, organic, combustible
B <sub>1</sub>	Backfilling material, inorganic, incombustible
E	Building element (wall, floor)
t <sub>A</sub>	Thickness of Hilti Firestop Acrylic Sealant CFS-S ACR
E <sub>1</sub>	Steel elements as joint faces
t <sub>B</sub>	Thickness of backfilling material
t <sub>E</sub>	Thickness of the building element / joint depth
w	Joint width

## ANNEX 2: DESCRIPTION OF PRODUCT(S) & PRODUCT LITERATURE

### 2.1 Hilti Firestop Acrylic Sealant CFS-S ACR

“Hilti Firestop Acrylic Sealant CFS-S ACR” is a 1-component product and is composed essentially of filling substances and an acrylic binder. It is delivered in various colours.

“Hilti Firestop Acrylic Sealant CFS-S ACR” is supplied in 310 ml cartridges, 580 ml foil packs, 5 litre buckets and 19 litre buckets.

### 2.2 Ancillary Products

#### 2.2.1 Mineral wool

Mineral wool products suitable for being used as backfilling material:

Characteristics	Specification
Stone wool	EN 13162 or EN 14303
Density	39.4 to 100 kg/m <sup>3</sup>
Facing	No aluminium-facing, no other facing
Combustibility class	A1 according EN 13501-1
Melting point	≥ 1000°C

#### 2.2.2 Hilti Firestop Round Cord CFS-CO

“Hilti Firestop Round Cord CFS-CO” is a rod made from stone wool weaved in glass fibre. It is provided in diameters of 20, 30, 40, 50 and 60 mm to accommodate various joint widths.

#### 2.2.3 Combustible backfilling material

Any Polyethylene or Polyurethane based product may be used as backfilling material, covered with “Hilti Firestop Acrylic Sealant CFS-S ACR”. For a more detailed description see Annex 3, clause 3.4.2 of this UKTA.

### 2.3 Technical product literature

Technical Datasheet and Instructions for Use Hilti Firestop Acrylic Sealant CFS-S ACR (including Hilti Firestop Round Cord CFS-CO)

### ANNEX 3: RESISTANCE TO FIRE CLASSIFICATION OF LINEAR JOINT AND GAP SEALS MADE FROM HILTI FIRESTOP ACRYLIC SEALANT CFS-S ACR

#### 3.1 GENERAL INFORMATION FOR WALL AND FLOOR DESIGN:

##### 3.1.1 Wall / Floor constructions covered:

- a) Flexible walls: The flexible wall construction must be classified in accordance with EN 13501-2 for the required fire resistance period and must have a minimum thickness of 100 mm. The flexible wall construction comprise steel or timber studs lined on both faces with minimum 2 layers of minimum 12.5 mm thick boards.  
For timber stud walls there must be a minimum distance of 100 mm of the seal to any stud. The cavity between stud and seal must be closed with an insulation of Class A1 (in accordance with EN 13501-1) for at least 100 mm distance. No joint is closer than 100 mm to the next stud.
- b) Rigid walls: The rigid wall must have a minimum thickness of 100 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 550 kg/m<sup>3</sup>.
- c) Rigid walls: The wall must have a minimum thickness of 150 mm and comprise concrete or masonry, with a minimum density of 2400 kg/m<sup>3</sup>.
- d) Rigid floors: The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 2400 kg/m<sup>3</sup>.
- e) Rigid floors: The floor must have a minimum thickness of 150 mm and comprise aerated concrete with a minimum density of 550 kg/m<sup>3</sup>.
- f) Steel constructions: The constructions, e.g. columns, beams or joint edges protected by steel angles, must form a minimum seal depth of 150 mm. The steel construction should be made from steel alloys or iron with a melting point higher than 1000°C.

The walls / floors must be classified in accordance with EN 13501-2 for the required fire resistance period.

##### 3.1.2 Joint position and basement preparation

In rigid and flexible wall constructions the joint has to be sealed symmetrically on both sides of the wall. In floor constructions the joint has to be sealed from the top side only.

The following table shows the assessed joint types and the related test and application orientations according to EN 1366-4, Figure 12.

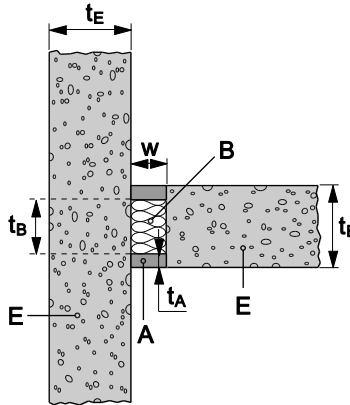
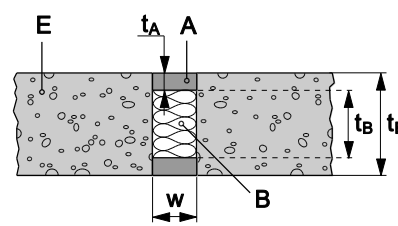
Joint types	Affected clause in the ETA	Tests and application orientation of joint seals
Type IA joint	Annex 3, clause 3.2.1.1	B; vertical linear joint in a vertical test construction
Type IB joint	Annex 3, clause 3.2.1.1	B; vertical linear joint in a vertical test construction
Type II joint	Annex 3, clause 3.2.1.2	A; linear joint in a horizontal test construction
Type III joint	Annex 3, clause 3.2.1.3	D; horizontal wall joint abutting a floor, ceiling or roof
Type IV joint	Annex 3, clause 3.2.2.1	B; vertical linear joint in a vertical test construction
Type V joint	Annex 3, clause 3.2.2.2	A; linear joint in a horizontal test construction
Type VI joint	Annex 3, clause 3.2.3.1	D; horizontal wall joint abutting a floor, ceiling or roof
Type VII joint	Annex 3, clause 3.2.3.2	B; vertical linear joint in a vertical test construction
Type VIII joint	Annex 3, clause 3.2.3.3	B; vertical linear joint in a vertical test construction
Type IX joint	Annex 3, clause 3.3.2.1	B; vertical linear joint in a vertical test construction
Type X joints	Annex 3, clause 3.3.2.2	A; linear joint in a horizontal test construction
Type XI joints	Annex 3, clause 3.3.2.3	D; horizontal wall joint abutting a floor, ceiling or roof
Type XII joint	Annex 3, clause 3.4.3.1	B; vertical linear joint in a vertical test construction
Type XIII joint	Annex 3, clause 3.4.3.2	A; linear joint in a horizontal test construction
Type XIV joint	Annex 3, clause 3.4.3.3	D; horizontal wall joint abutting a floor, ceiling or roof
Type XV joint	Annex 3, clause 3.4.4	A; linear joint in a horizontal test construction
Type XVI joint	Annex 3, clause 3.4.4	A; linear joint in a horizontal test construction

Very porous joint edges have to be cleaned from dust and brittle material first and then pre-treated with “Hilti Firestop Acrylic Sealant CFS-S ACR”, diluted with water, to achieve better adhesion. After a short drying time the sealant should be installed wet-in-wet.

**3.2 RESISTANCE TO FIRE CLASSIFICATION OF LINEAR JOINT/GAP SEALS MADE FROM “HILTI FIRESTOP ACRYLIC SEALANT CFS-S ACR” WITH MINERAL WOOL BACKFILLING MATERIAL**

**3.2.1 “Hilti Firestop Acrylic Sealant CFS-S ACR” in combination with mineral wool products as backfilling material in rigid constructions**

**3.2.1.1 “Hilti Firestop Acrylic Sealant CFS-S ACR” within or between rigid walls**

<b>Type I</b>	
Vertical joints in between rigid wall constructions (according to Annex 3, clause 3.1.1.c of this UKTA)	
 <p><b>Type IA</b> (top view)</p>	 <p><b>Type IB</b> (top view)</p>
<ul style="list-style-type: none"> <li>• <b>A</b> = Hilti Firestop Acrylic Sealant CFS-S ACR</li> <li>• <b>B</b> = mineral wool product (see Annex 2, clause 2.2.1 of this UKTA)</li> <li>• <math>t_E \geq 150</math> mm, <math>t_B \geq 100</math> mm</li> <li>• maximum movement capability: <math>\pm 12.5\%</math></li> <li>• splice distance of insulation minimum 1250 mm</li> </ul>	

For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

For **type IA** and **type IB** joints:

Joint Width (w) (mm)	Joint Depth (t <sub>A</sub> ) (mm)	Mineral wool Backfilling Compression by (%)	Classification
6 – 20	≥ 6	≥ 60 <sup>a</sup>	EI 180-V-M 12.5-F-W 6 to 20 E 240-V-M 12.5-F-W 6 to 20
20 – 100	≥ 10	≥ 50 <sup>b</sup>	EI 180-V-M 12.5-F-W 20 to 100 E 240-V-M 12.5-F-W 20 to 100

<sup>a</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 15mm (for 6mm joint) up to 50mm (for a 20mm joint).

<sup>b</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 40mm (for 20mm joint) up to 200mm (for a 100mm joint).

3.2.1.2 “Hilti Firestop Acrylic Sealant CFS-S ACR” within or between rigid floors according to Annex 3, clause 3.1.1 of this UKTA

<b>Type II</b>	
Joints in rigid floor constructions	
<p style="text-align: center;">(sectional view)</p>	
<ul style="list-style-type: none"> <li>• <b>A</b> = Hilti Firestop Acrylic Sealant CFS-S ACR</li> <li>• <b>B</b> = mineral wool products (see Annex 2, clause 2.2.1 of this UKTA)</li> <li>• <math>t_E \geq 150</math> mm, <math>t_B \geq 100</math> mm</li> <li>• maximum <math>\pm 12.5\%</math> movement</li> <li>• splice distance minimum 1250 mm</li> </ul>	

For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

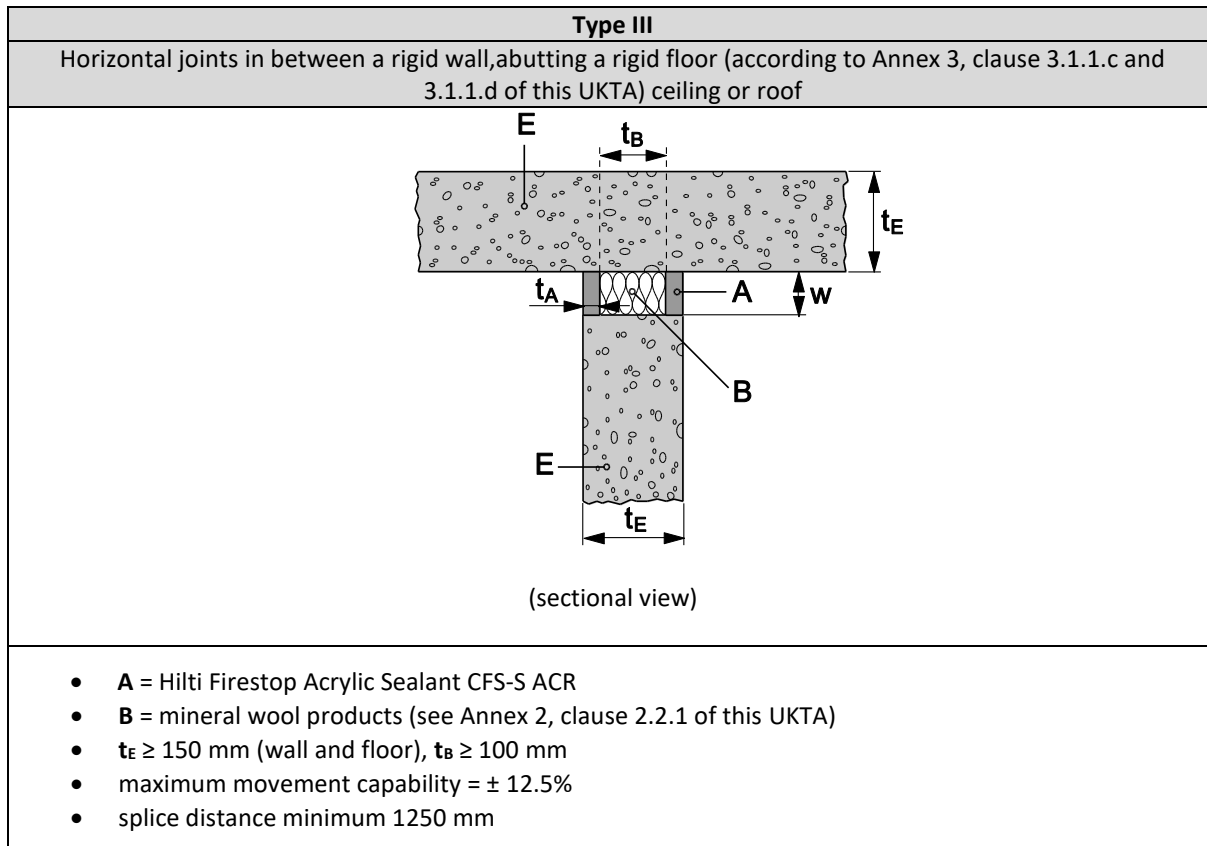
For **type II** joints:

Joint Width (w) (mm)	Joint Depth (t <sub>A</sub> ) (mm)	Mineral wool Backfilling Compression by (%)	Classification
6 – 20	≥ 6	≥ 60 <sup>a</sup>	EI 180-H-M 12.5-F-W 6 to 20 E 180-H-M 12.5-F-W 6 to 20
20 – 100	≥ 10	≥ 50 <sup>b</sup>	EI 120-H-M 12.5-F-W 20 to 100 E 180-H-M 12.5-F-W 20 to 100

<sup>a</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 15mm (for 6mm joint) up to 50mm (for a 20mm joint).

<sup>b</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 40mm (for 20mm joint) up to 200mm (for a 100mm joint).

3.2.1.3 “Hilti Firestop Acrylic Sealant CFS-S ACR” in combination with mineral wool products in horizontal joints between a rigid wall abutting a floor ceiling or roof



For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

For **type III** joints:

Joint Width (w) (mm)	Joint Depth ( $t_A$ ) (mm)	Mineral wool Backfilling Compression by (%)	Classification
6 – 20	$\geq 6$	$\geq 60^a$	EI 180-T-M 12.5-F-W 6 to 20 E 180-T-M 12.5-F-W 6 to 20
20 – 100	$\geq 10$	$\geq 50^b$	EI 120-T-M 12.5-F-W 20 to 100 E 180-T-M 12.5-F-W 20 to 100

<sup>a</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 15mm (for 6mm joint) up to 50mm (for a 20mm joint).

<sup>b</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 40mm (for 20mm joint) up to 200mm (for a 100mm joint).

**3.2.2 “Hilti Firestop Acrylic Sealant CFS-S ACR” in combination with mineral wool products as backfilling material in rigid constructions with steel elements as joint faces**

**3.2.2.1 Steel elements as joint faces in linear joints in rigid walls**

<b>Type IV</b>
Vertical joints in / between rigid wall constructions (according to Annex 3, clause 3.1.1.c and 3.1.1.f of this UKTA)
<p style="text-align: center;">(top view)</p>
<ul style="list-style-type: none"> <li>• <b>A</b> = Hilti Firestop Acrylic Sealant CFS-S ACR</li> <li>• <b>B</b> = mineral wool products (see Annex 2, clause 2.2.1 of this UKTA)</li> <li>• <math>t_E \geq 150</math> mm, <math>t_B \geq 100</math> mm</li> <li>• maximum <math>\pm 7.5\%</math> movement (non-movement joints)</li> <li>• maximum splice distance minimum 1250 mm</li> </ul>

For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

For **Type IV** joints:

Joint Width (w) (mm)	Joint Depth (t <sub>A</sub> ) (mm)	Mineral wool Backfilling Compression by (%)	Classification
6 – 20	≥ 6	≥ 60 <sup>a</sup>	EI 60-V-X-F-W 6 to 20 E 240-V-X-F-W 6 to 20
20 – 100	≥ 10	≥ 50 <sup>b</sup>	EI 60-V-X-F-W 20 to 100 E 240-V-X-F-W 20 to 100

<sup>a</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 15mm (for 6mm joint) up to 50mm (for a 20mm joint).

<sup>b</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 40mm (for 20mm joint) up to 200mm (for a 100mm joint).



### 3.2.2.2 Steel elements as joint faces in horizontal joints in rigid floors

<b>Type V</b>	
Horizontal joints in rigid floor constructions (according to Annex 3, clause 3.1.1.d and 3.1.1.f of this UKTA)	
<p style="text-align: center;">(sectional view)</p>	
<ul style="list-style-type: none"> <li>• <b>A</b> = Hilti Firestop Acrylic Sealant CFS-S ACR</li> <li>• <b>B</b> = mineral wool products (see Annex 2, clause 2.2.1 of this UKTA)</li> <li>• <math>t_B \geq 100</math> mm, <math>t_E \geq 150</math> mm</li> <li>• maximum <math>\pm 7.5\%</math> movement (non-movement joints)</li> <li>• maximum splice distance minimum 1250 mm</li> </ul>	

For symbols and abbreviations see Annex 1, clause 1.3 of this ETA

For **type V** joints:

Joint Width (w) (mm)	Joint Depth ( $t_A$ ) (mm)	Mineral wool Backfilling Compression by (%)	Classification
6 – 20	$\geq 6$	$\geq 60^a$	EI 120-H-X-F-W 6 to 20 E 120-H-X-F-W 6 to 20
20 – 100	$\geq 10$	$\geq 50^b$	EI 60- H-X-F-W 20 to 100 E 120-H-X-F-W 20 to 100

<sup>a</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 15mm (for 6mm joint) up to 50mm (for a 20mm joint).

<sup>b</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 40mm (for 20mm joint) up to 200mm (for a 100mm joint).

**3.2.3 “Hilti Firestop Acrylic Sealant CFS-S ACR” in combination with mineral wool products as backfilling material in joints of flexible wall constructions or between flexible wall and rigid construction**

**3.2.3.1 “Hilti Firestop Acrylic Sealant CFS-S ACR” in combination with mineral wool products in joints between a flexible wall abutting a floor ceiling or roof**

Type VI
Horizontal joints in between the flexible wall (according to Annex 3, clause 3.1.1.a of the UKTA), abutting a floor (according to Annex 3, clause 3.1.1.e of the UKTA), ceiling or roof
<p style="text-align: center;">(sectional view)</p>
<ul style="list-style-type: none"> <li>• <b>A</b> = Hilti Firestop Acrylic Sealant CFS-S ACR</li> <li>• <b>B</b> = mineral wool products (see Annex 2, clause 2.2.1 of this UKTA)</li> <li>• Floor: <math>t_E \geq 150</math> mm</li> <li>• Flexible wall: <math>t_E \geq 100</math> mm</li> <li>• Mineral wool <b>E</b> inside the flexible wall (density <math>\geq 100\text{kg/m}^3</math>, melting point <math>\geq 1000^\circ\text{C}</math>)</li> <li>• maximum joint movement capability: <math>\pm 12.5\%</math></li> <li>• splice distance minimum 625 mm</li> </ul>

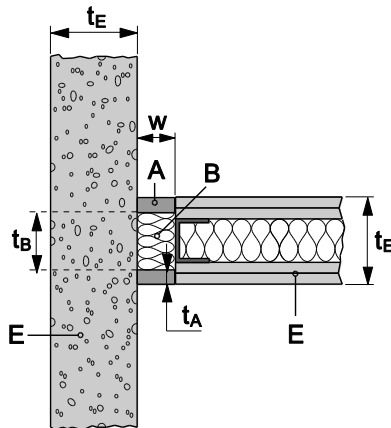
For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

For **type VI** joints:

Joint Width (w) (mm)	Joint Depth (t <sub>A</sub> ) (mm)	Mineral wool Backfilling Compression by (%)	Classification
6 – 30	$\geq 6$	$\geq 60^c$	EI 120-T-M 12.5-F-W 6 to 30 E 120-T-M 12.5-F-W 6 to 30

<sup>c</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 15mm (for 6mm joint) up to 75mm (for a 30mm joint).

3.2.3.2 “Hilti Firestop Acrylic Sealant CFS-S ACR” in combination with mineral wool products in joints between a flexible wall abutting a rigid wall

<b>Type VII</b>
Vertical joints between flexible and rigid wall constructions (according to Annex 3, clause 3.1.1.a and 3.1.1.c of the UKTA)
 <p style="text-align: center;">(top view)</p>
<ul style="list-style-type: none"> <li>• <b>A</b> = Hilti Firestop Acrylic Sealant CFS-S ACR</li> <li>• <b>B</b> = mineral wool products (see Annex 2, clause 2.2.1 of the UKTA)</li> <li>• Rigid wall: <math>t_E \geq 150</math> mm</li> <li>• Flexible wall: <math>t_E \geq 100</math> mm</li> <li>• Mineral wool <b>E</b> inside the flexible wall (density <math>\geq 100\text{kg/m}^3</math>, melting point <math>\geq 1000^\circ\text{C}</math>)</li> <li>• max. <math>\pm 7.5\%</math> movement (non-movement joints)</li> <li>• splice distance minimum 1250 mm</li> </ul>

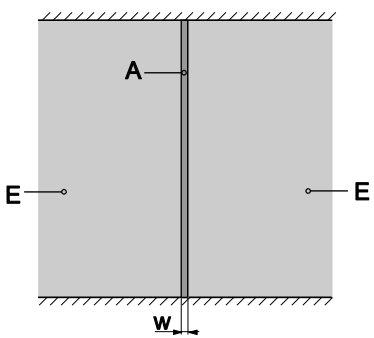
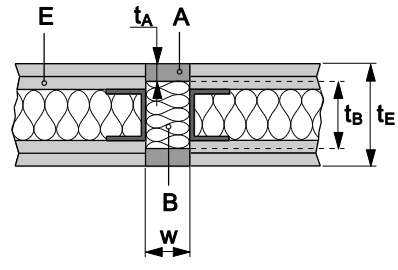
For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

For **type VII** joints:

Joint Width (w) (mm)	Joint Depth ( $t_A$ ) (mm)	Mineral wool Backfilling Compression by (%)	Classification
10 – 20	$\geq 10$	$\geq 60^d$	EI 120-V-X-F-W-F-W 10 to 20 E 120-V-X-F-W-F-W 10 to 20

<sup>d</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 25mm (for 10mm joint) up to 50mm (for a 20mm joint).

3.2.3.3 “Hilti Firestop Acrylic Sealant CFS-S ACR” in combination with mineral wool backfilling between flexible walls

<b>Type VIII</b>	
Vertical joints between flexible wall constructions (according to Annex 3, clause 3.1.1.a of the UKTA)	
 <p>(front view)</p>	 <p>(top view)</p>
<ul style="list-style-type: none"> <li>• <b>A</b> = Hilti Firestop Acrylic Sealant CFS-S ACR</li> <li>• <b>B</b> = mineral wool products (see Annex 2, clause 2.2.1 of the UKTA)</li> <li>• <math>t_E \geq 100</math> mm</li> <li>• Mineral wool <b>E</b> inside the flexible wall (density <math>\geq 100\text{kg/m}^3</math>, melting point <math>\geq 1000^\circ\text{C}</math>)</li> <li>• max. <math>\pm 7.5\%</math> movement (non-movement joint)</li> <li>• splice distance minimum 1250 mm</li> </ul>	

For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

For **type VIII** joints:

Joint Width (w) (mm)	Joint Depth (t <sub>A</sub> ) (mm)	Mineral wool Backfilling Compression by (%)	Classification
10 – 30	$\geq 10$	$\geq 50^f$	EI 120-V-X-F-W 10 to 30 E 120-V-X-F-W 10 to 30

<sup>f</sup> Mineral wool has to be pressed into the joint taking into consideration, that the uncompressed thickness of the mineral wool board before installation has to be at least 20mm (for 10mm joint) up to 60mm (for a 30mm joint).

### 3.3 RESISTANCE TO FIRE CLASSIFICATION OF LINEAR JOINTS AND GAP SEALS MADE FROM “HILTI FIRESTOP ACRYLIC SEALANT CFS-S ACR” IN COMBINATION WITH “HILTI FIRESTOP ROUND CORD CFS-CO” AS BACKFILLING MATERIAL

#### 3.3.1 Selection of “Hilti Firestop Round Cord CFS-CO” for relevant joint width

The following table is valid identically for joints in/between

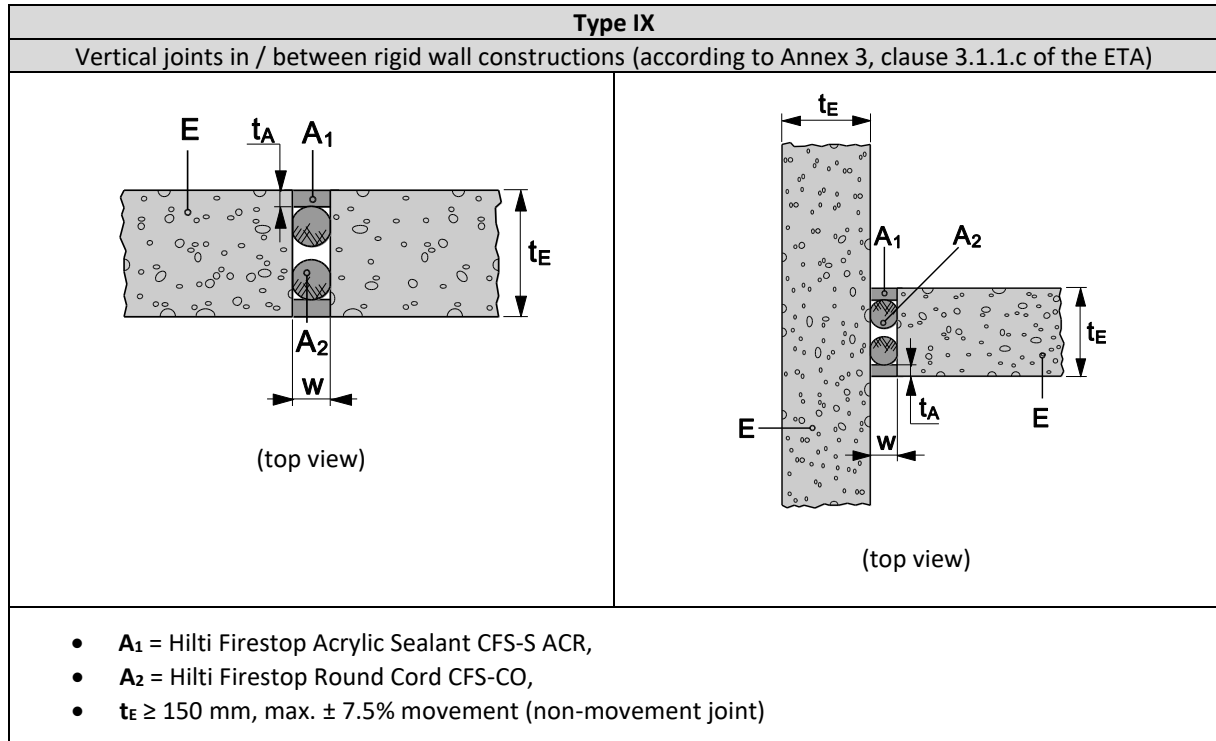
- rigid walls, see Annex 3, clause 3.1.1.c of the UKTA
- rigid floors, see Annex 3, clause 3.1.1.d of the UKTA
- rigid walls abutting a floor ceiling or roof (according Annex 3, clause 3.1.1.c and 3.1.1.d of the UKTA)

Joint width (w) (mm)	Size of “Hilti Firestop Round Cord CFS-CO”	Distance of splices in the two “Hilti Firestop Round Cord CFS-CO” rod layers (mm)	
		Vertical joints	Horizontal joints
12 - 17	20	140	645
17 - 27	30	450	645
27 - 37	40	450	645
37 - 47	50	450	645
47 - 55	60	450	645

#### 3.3.2 Joints in rigid walls and floors, backfilled with “Hilti Firestop Round Cord CFS-CO”

Vertical Joints within or between rigid walls according to 3.1.1.c have to be installed identically from both sides of the wall. At least two “Hilti Firestop Round Cords CFS-CO” have to be installed pre-compressed into the joint, running parallel. An air gap has to be maintained between the rods.

##### 3.3.2.1 Joints in/between rigid wall construction, made from “Hilti Firestop Acrylic Sealant CFS-S ACR” with “Hilti Firestop Round Cord CFS-CO”

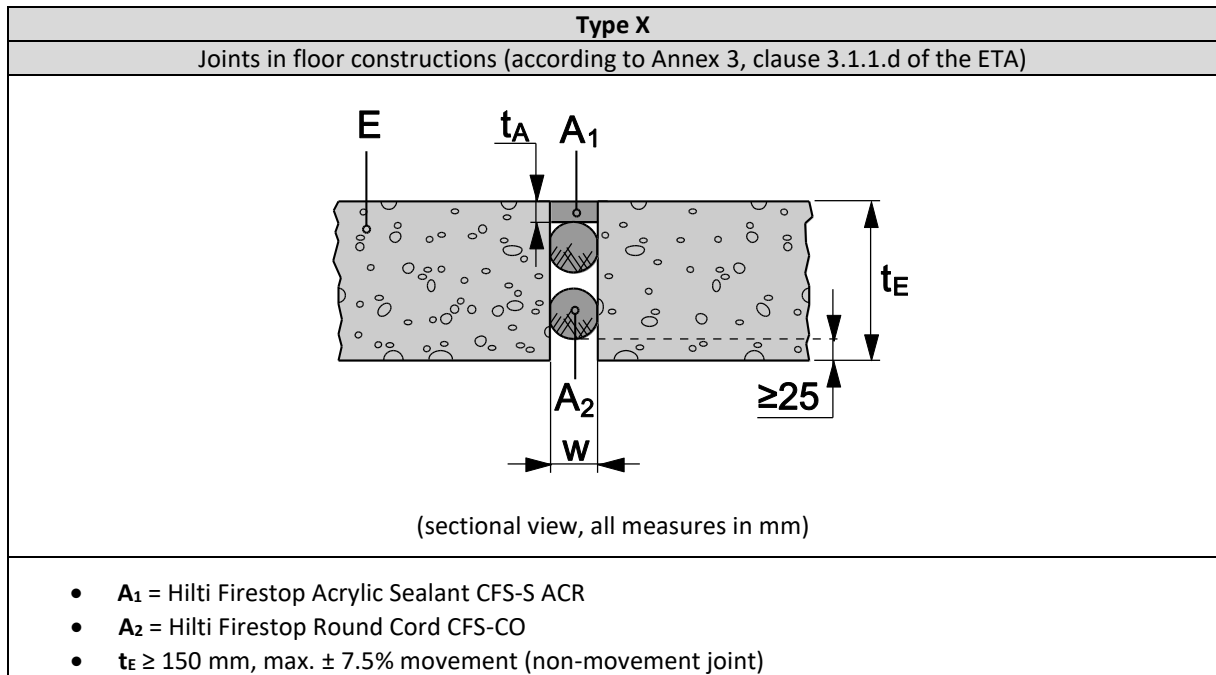


For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

For type IX joints:

Joint Width (w) (mm)	Joint Depth (t <sub>A</sub> ) (mm)	Classification
12 – 20	≥ 6	EI 180-V-X-F-W 12 to 55
20 – 55	≥ 10	E 240-V-X-F-W 12 to 55

3.3.2.2 Joints in/between rigid floor construction, made from “Hilti Firestop Acrylic Sealant CFS-S ACR” with “Hilti Firestop Round Cord CFS-CO”

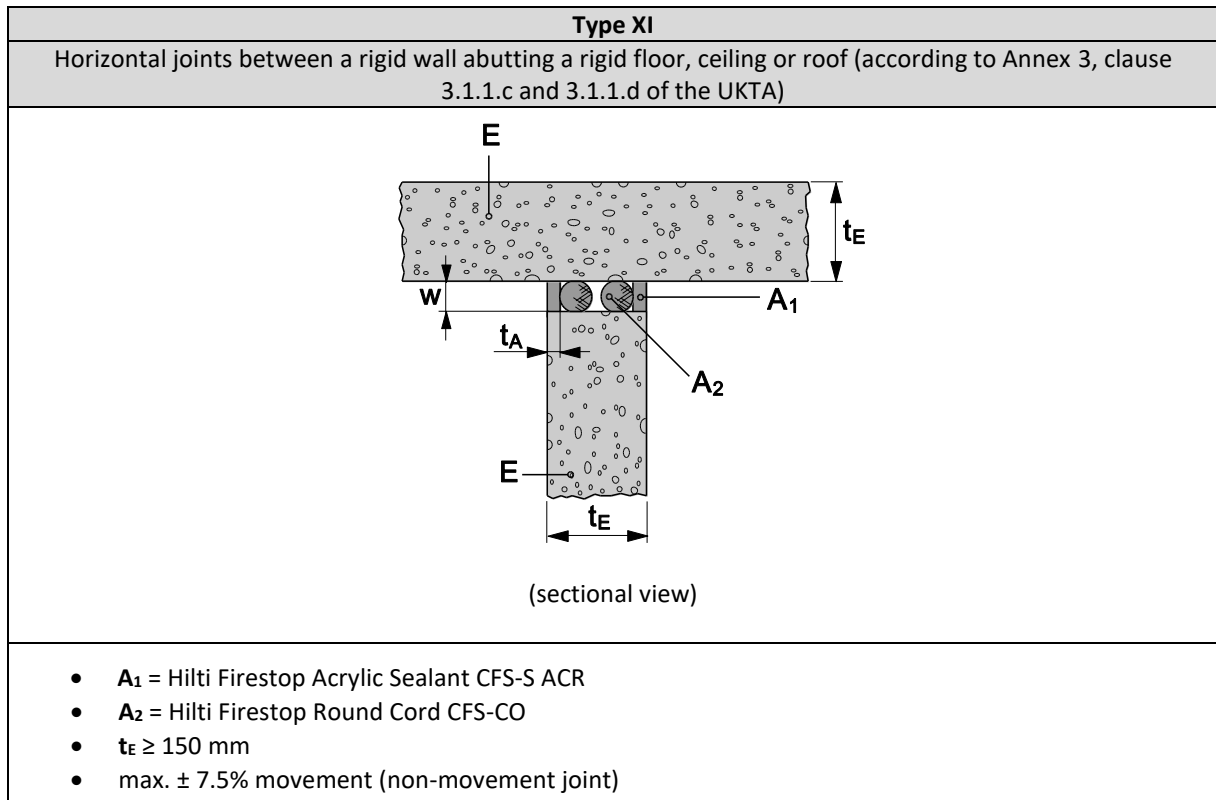


For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

For **type X** joints:

Joint Width (w) (mm)	Joint Depth (t <sub>A</sub> ) (mm)	Classification
12 – 17	≥ 6	EI 180-H-X-F-W 12 to 55
17 – 55	≥ 10	E 180-H-X-F-W 12 to 55

3.3.2.3 Joints in/between rigid floor and wall construction, made from “Hilti Firestop Acrylic Sealant CFS-S ACR” with “Hilti Firestop Round Cord CFS-CO”



For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

For **type XI** joints:

Joint Width(w) (mm)	Joint Depth (t <sub>A</sub> ) (mm)	Classification
12 – 17	≥ 6	EI 180-T-X-F-W 12 to 55
17 – 55	≥ 10	E 180-T-X-F-W 12 to 55

**3.4 RESISTANCE TO FIRE CLASSIFICATION OF LINEAR JOINT/GAP SEALS MADE FROM “HILTI FIRESTOP ACRYLIC SEALANT CFS-S ACR” IN COMBINATION WITH COMBUSTIBLE BACKFILLING MATERIAL**

**3.4.1 Application range for Joints, made from “Hilti Firestop Acrylic Sealant CFS-S ACR” and combustible backfilling material**

Within or between:

- rigid wall constructions, see Annex 3, clause 3.1.1.b and 3.1.1.c of the UKTA
- rigid floor constructions, see Annex 3, clause 3.1.1.d and 3.1.1.e of the UKTA
- between floor and flexible wall constructions ("head of wall joint"), see Annex 3, clause 3.1.1.a and 3.1.1.d of the UKTA

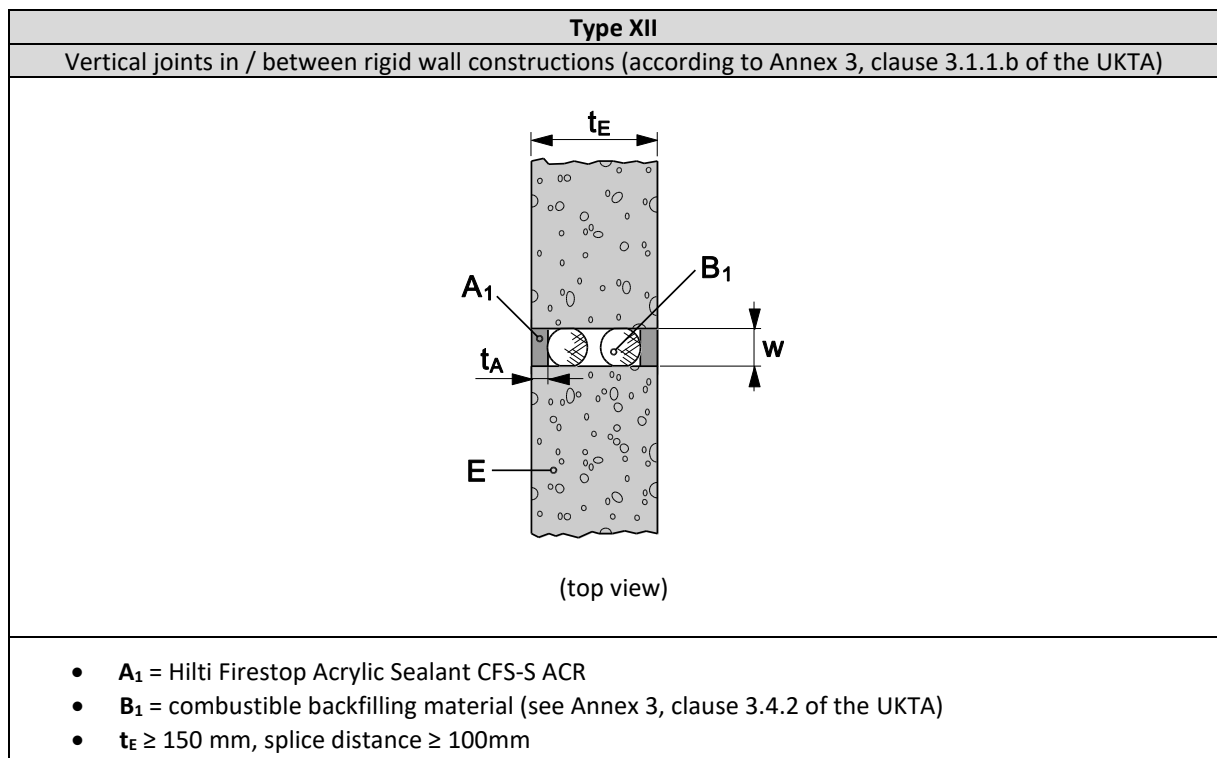
**3.4.2 Backfilling material B1 can be:**

- any Polyethylene (PE) based material, density  $\geq 19.5$  kg/m combustibility according to EN 13501-1 class F, E, D, C, B
- any Polyurethane (PU) based material, density  $\geq 18.0$  kg/m<sup>3</sup>, combustibility according to EN 13501-1 class F, E, D, C, B
- alternative backfilling material (glass wool, slag/clinker wool, mineral or ceramic wool class A1 according to EN 13501-1

**3.4.3 Symmetrical joints**

Symmetrical joints show an identical set up (backfilling material and sealing) from both sides of the wall or both sides of the floor.

**3.4.3.1 Joints in/between rigid wall construction, made from “Hilti Firestop Acrylic Sealant CFS-S ACR” with combustible backfilling material**



For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

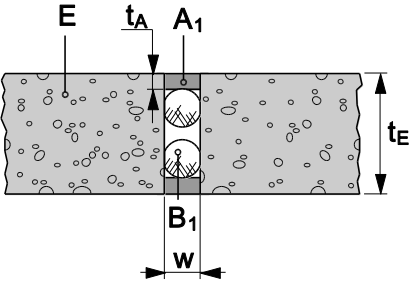


For **type XII** joints:

Joint Orientation	Joint width (w) (mm)	Sealant depth (t <sub>A</sub> ) (mm)	Max. Joint Movement ± (%)	Classification
Vertical joints in / between walls <sup>g</sup>	6 – 20	10	12.5	EI 180-V-M 12.5-F-W 6 to 20 E 180-V-M 12.5-F-W 6 to 20
	6 – 40	15	12.5	EI 180-V-M 12.5-F-W 6 to 40 E 180-V-M 12.5-F-W 6 to 40
	6 – 35	10	7.5	EI 180-V-X-F-W 6 to 35 E 180-V-X-F-W 6 to 35
	6 – 50	15	7.5	EI 180-V-X-F-W 6 to 50 E 180-V-X-F-W 6 to 50

<sup>g</sup> Backfilling material can be either PE material, PU material or other, see Annex 3, clause 3.4.2 of the UKTA

3.4.3.2 Joints in/between rigid floor construction, made from “Hilti Firestop Acrylic Sealant CFS-S ACR” with combustible backfilling material

<b>Type XIII</b>	
Horizontal Joints in floor constructions according to Annex 3, clause 3.1.1.e of the UKTA	
 <p>(sectional view)</p>	
<ul style="list-style-type: none"> <li>• <b>A</b> = Hilti Firestop Acrylic Sealant CFS-S ACR</li> <li>• <b>B<sub>1</sub></b> = combustible backfilling material (see Annex 3, clause 3.4.2 of the UKTA)</li> <li>• <b>t<sub>E</sub></b> ≥ 150 mm, splice distance minimum 100mm</li> </ul>	

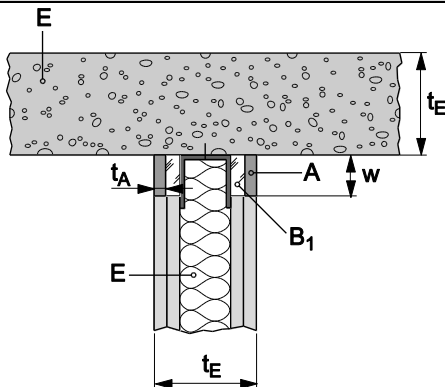
For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

For **Type XIII** joints:

Joint Orientation	Joint width (w) (mm)	Sealant depth (t <sub>A</sub> ) (mm)	Max. Joint Movement ± (%)	Classification
Joints in floor constructions <sup>g</sup>	6 – 20	10	12.5	EI 180-H-M 12.5-F-W 6 to 20 E 180-H-M 12.5-F-W 6 to 20
	6 – 40	15	12.5	EI 180-H-M 12.5-F-W 6 to 40 E 180-H-M 12.5-F-W 6 to 40

<sup>g</sup> Backfilling material can be either PE material, PU material or other, see Annex 3, clause 3.4.2 of the UKTA

3.4.3.3 Joints between rigid floor construction and flexible wall construction, made from "Hilti Firestop Acrylic Sealant CFS-S ACR" with combustible backfilling material

<b>Type XIV</b>	
Horizontal joints between a flexible wall, abutting a floor, ceiling or roof ("head of wall joint"), according to Annex 3, clause 3.1.1.a and 3.1.1.e of the UKTA	
 <p style="text-align: center;">(sectional view)</p>	
<ul style="list-style-type: none"> <li>• <b>A</b> = Hilti Firestop Acrylic Sealant CFS-S ACR</li> <li>• <b>B<sub>1</sub></b> = combustible backfilling material (see Annex 3, clause 3.4.2 of the UKTA)</li> <li>• <b>t<sub>E</sub></b> ≥ 150 mm (floor)</li> <li>• <b>t<sub>E</sub></b> ≥ 100 mm (flexible wall)</li> <li>• maximum joint movement capability: ± 12.5%,</li> <li>• Mineral wool <b>E</b> inside the flexible wall (density ≥ 100kg/m<sup>3</sup>, melting point ≥ 1000°C)</li> <li>• splice distance minimum 200mm</li> </ul>	

For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

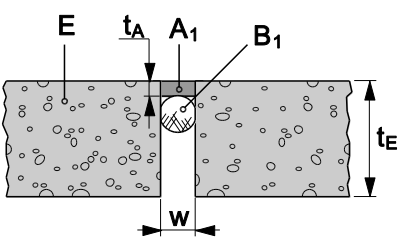
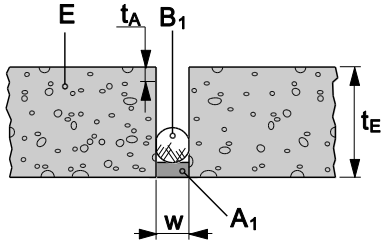
For **type XIV** joints:

Joint Orientation	Joint width (w) (mm)	Sealant depth (t <sub>A</sub> ) (mm)	Max. Joint Movement ± (%)	Classification
Horizontal joints in a wall abutting a floor, ceiling or roof <sup>h</sup>	6 – 20	≥ 10	12.5	EI 90-T-M 12.5-F-W 6 to 20 E 120-T-M 12.5-F-W 6 to 20

<sup>h</sup> Backfilling material has to be PE only, see Annex 3, clause 3.4.2 of the UKTA

### 3.4.4 Non-symmetrical Joints

In floor application an asymmetrical joint set up may be chosen, see type XV and type XVI.  
In wall application is no asymmetrical system approved.

Type XV	Type XVI
Joints in rigid floor constructions, see Annex 3, clause 3.1.1.e of the UKTA	Joints in rigid floor constructions, see Annex 3, clause 3.1.1.e of the UKTA
 <p>(sectional view)</p> <ul style="list-style-type: none"> <li>• <math>t_E \geq 150</math> mm</li> </ul>	 <p>(sectional view)</p> <ul style="list-style-type: none"> <li>• <math>t_E \geq 150</math> mm</li> </ul>

For symbols and abbreviations see Annex 1, clause 1.3 of the UKTA

For **type XV** and **type XVI** joints:

Joint Orientation	Joint width (w) (mm)	Sealant depth (t <sub>A</sub> ) (mm)	Backfilling Material B <sub>1</sub>	Max. Joint Movement ± (%)	Classification
Joints in floor constructions ( <b>type XV</b> )	6 – 25	15	PE	7.5	EI 120-H-X-F-W 6 to 25 E 180-H-X-F-W 6 to 25
Joints in floor constructions ( <b>type XVI</b> )	6 – 25	15	PE	7.5	EI 45-H-X-F-W 6 to 25 E 120-H-X-F-W 6 to 25
Joints in floor constructions ( <b>type XV</b> )	6 – 25	15	PU	7.5	EI 120-H-X-F-W 6 to 25 E 180-H-X-F-W 6 to 25
Joints in floor constructions ( <b>type XVI</b> )	6 – 25	15	PU	7.5	EI 30-H-X-F-W 6 to 25 E 120-H-X-F-W 6 to 25