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-23/0002 of 30/05/2023

Technical Assessment Body Issuing the UKTA:	UL International (UK) Ltd
Trade name of the construction product	Hilti Firestop Joint Spray CFS-SP WB
Product family to which the construction product belongs	Fire Stopping and Fire Sealing Products – Linear Joint and Gap Seals, Perimeter Seal of Curtain Walls
Manufacturer	Hilti Corporation Feldkircherstrasse 100 9494 Schaan LIECHTENSTEIN
Manufacturing plant(s)	HILTI production plant 4a
This UK Technical Assessment contains	15 pages including 4 annexes which form an integral part of this assessment
This UK Technical Assessment* is issued, on the basis of	EAD 350141-00-1106, September 2017

*** 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

SPECIFIC PARTS OF THE UK TECHNICAL ASSESSMENT

1 Technical description of the product

Hilti Firestop Joint Spray CFS-SP WB is a membrane-forming coating used to form a perimeter seal between rigid floor slabs and curtain walls with mineral wool as backfilling material. In façade constructions the coating is normally only applied on the top side. Very porous joint edges are treated with Hilti Firestop Joint Spray CFS-SP WB diluted with water, to achieve better adhesion. 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 Joint Spray CFS-SP WB see Annex 2 of the UKTA. For a specification of suitable mineral wool as backfilling material see Annex 2, clause 2.2 of the UKTA.

For a description of the installation procedure see Annex 3 of the UKTA.

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

Hilti Firestop Joint Spray CFS-SP WB is intended to be used as a linear joint and gap seal to provide fire resistance performance in the area of the perimeter joint between a curtain wall and rigid floor slabs.

Hilti Firestop Joint Spray CFS-SP WB may be used between the following construction elements:

<table>
<tr><th>Construction element</th><th colspan="2">Construction</th></tr>
<tr><td rowspan="2">1. Rigid floors</td><td colspan="2">1.a) Concrete</td></tr>
<tr><td colspan="2">➢ Minimum density 2400 kg/m^3
➢ Minimum thickness 150 mm
➢ The rigid floor shall be classified in accordance with EN 13501-2 for the required fire resistance period</td></tr>
<tr><td rowspan="3">2. Curtain wall</td><td colspan="2">2.a) Steel framed (transoms, mullions)
2.b) Aluminium framed (transoms, mullions)</td></tr>
<tr><td colspan="2">➢ The cavity formed by the spandrel panel and the framing shall be filled with stone wool or stone wool board of a nominal density of minimum:</td></tr>
<tr><td>➢ ~70 kg/m^3
(with calcium silicate boards and/or steel or aluminium sheet)</td><td>➢ ~120 kg/m^3 foil faced
(without calcium silicate boards and/or steel or aluminium sheet)</td></tr>
</table>

2.2 Use conditions

Hilti Firestop Joint Spray CFS-SP WB is intended for use at temperatures below 0°C with casual exposure to UV but no exposure to rain, and can therefore – according to EAD 350141-00-116, clause 2.1 – be categorised as Type Y_1. Since the requirements for Type Y_1 are met, also the requirements for Type Y_2, Z_1 and Z_2 are fulfilled.

2.3 Working life

The provisions made in this UK Technical Assessment are based on an assumed working life of the Hilti Firestop Joint Spray CFS-SP WB of 25 years, provided that the conditions laid down in the manufacturer's datasheet and instructions for the packaging / transport / storage / installation / use / repair are met.

The indications given on the 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 choosing the right 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 perimeter 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 o 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.

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

Basic requirements for construction works	Essential characteristic	Method of verification	Performance
BWR 2	Reaction to fire	EN 13501-1	Clause 3.1.1 of this UKTA
	Resistance to fire	EN 13501-2	See Clause 3.1.2 and Annex 2 of this UKTA
BWR 3	Air permeability	EN 1026	Clause 3.2.1 of this UKTA
	Water permeability	EAD 350141-00-1106, Annex C	Clause 3.2.2 of this UKTA
	Content and/or release of dangerous substances	Declaration of conformity by the manufacturer	
BWR 4	Mechanical resistance and stability	EAD 350141-00-1106, Clause 2.2.6	Clause 3.3.1 of this UKTA
	Resistance to impact/movement	EOTA TR001	Clause 3.3.2 of this UKTA
	Adhesion	EAD 350141-00-1106, Clause 2.2.8	Clause 3.3.3 of this UKTA
	Durability	EOTA TR 024	Clause 3.3.4 of this UKTA
	Movement capability	No performance assessed	
	Cycling of perimeter seals for curtain walls	EAD 350141-00-1106, clause 2.2.14	Clause 3.3.6 of this UKTA
BWR 5	Airborne sound insulation	EN ISO 10140-1	Clause 3.4.1 of this UKTA
BWR 6	Thermal properties	No performance assessed	
	Water vapour permeability	No performance assessed	

3.1 Safety in case of fire (BWR 2)

3.1.1 Reaction to fire

Hilti Firestop Joint Spray CFS-SP WB is classified 'E' in accordance with EN 13501-1.

3.1.2 Resistance to fire

Hilti Firestop Joint Spray CFS-SP WB was tested according to EAD 350141-00-1106, clause 2.2.2 and EN 1364-4:2007.

Based upon the gained test results and the field of direct application specified within EN 1364-4:2007, Hilti Firestop Joint Spray CFS-SP WB has been classified according to EN 13501-2, as shown in Annex 2 of the UKTA.

For details of suitable floor constructions and curtain wall constructions see clause 2.1 of the UKTA.

3.2 Hygiene, health and environment (BWR 3)

3.2.1 Air permeability

The air permeability of the Hilti Firestop Joint Spray CFS-SP WB was tested in a joint set up with dimension 1030 x 80 mm according to EAD 350141-00-1106, clause 2.2.4 by applying the test principle of EN 1026.

Pressure (Pa)	**50**	**250**	**300**	**450**	**600**
q/A air(m^3/h)	No representative air flow measured				

3.2.2 Water permeability

The 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 Joint Spray CFS-SP WB (dry film thickness) on mineral wool. Test result: Water tight to 1000 mm head of water for a period of max 10 days.

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

The mechanical resistance and stability is covered by tests carried out for the determination of movement capability described in 3.3.2.

3.3.2 Resistance to impact / movement

The resistance to impact/movement has been tested using the test procedure according to EAD 350141-00-1106. Due to the maximum seal width of 200 mm the method according to EOTA TR 001, clause 3 of hard body impact had to be used. The hard body impact test simulates the impact, resulting from an object accidentally falling against the seal.

Safety in use: The requirement of withstanding a 10 Nm impact was fulfilled without damages.

Serviceability: The requirement of withstanding a 10 Nm impact was fulfilled without damages.

3.3.3 Adhesion

Adhesion is covered by tests carried out for the determination of movement capability described in 3.3.2.

3.3.4 Durability

Hilti Firestop Joint Spray CFS-SP WB has been tested in accordance with EOTA TR 024, Table 4.1 for the Y_1 use category specified in EAD 350141-00-1106 and the results of the test have demonstrated suitability for perimeter seals intended for use at temperatures between –20°C and +70°C.

Hilti Firestop Joint Spray CFS-SP WB may be painted over with acrylic paint systems.

The compatibility test showed no negative influence of Hilti Firestop Joint Spray CFS-SP WB on steel and aluminium surfaces.

3.3.5 Movement capability

No performance assessed

3.3.6 Cycling of perimeter seals for curtain walls

Before the fire test was carried out, a cycling test according to EAD 350141-00-1106, clause 2.2.14 has been performed in order to show the ability of the sealing system to accommodate movement ("mechanical ageing") without losing its fire resistance capability. The frequency designated "seismic" (30 cycles per minute and 500 changes between minimum and maximum joint width) was used at an amplitude of ± 25%

3.4 Protection against noise (BWR 5)

3.4.1 Airborne sound insulation

Test reports from noise reduction according to EN 20140-10, EN ISO 140-1, EN 20140-3, EN ISO 10140-1, EN ISO 10140-2, EN ISO 10140-5 and EN ISO 717-1 have been provided.

A special test set-up was used to simulate the conditions of a perimeter seal of a curtain wall. The reached values for the airborne sound insulation are given in the following table

Joint width [mm]	Seal depth [mm]	Coating	R_w (C;Ctr)[dB]	$D_{n,e,w}$ (C;Ctr)[dB]
200	200	Both sides	40 (-1;-5) [a)]	55 (0;-4) [b)]
200	200	Top side	37 (-1;-4) [a)]	52 (-1;-4) [b)]

[a)] where S = 0,3 m^2 (S = Area to which the measurement applies)
[b)] where A = 10 m^2 (A = Area on which the standardisation is carried out)

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-23/0002 issued on 30/05/2023 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 perimeter 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 perimeter seal
- Construction of the perimeter 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: 30th May 2023

Report by:

C. Sweeney
Project Engineer
Built Environment
For and on behalf of UL International (UK) Ltd.

Reviewed by:

C. Johnson
Senior Staff Engineer
Built Environment

ANNEX 1: DESCRIPTION OF THE PRODUCT AND ANCILLARY PRODUCT(S)

1.1 Hilti Firestop Joint Spray CFS-SP WB

Hilti Firestop Joint Spray CFS-SP WB is a water based 1-component product and is composed essentially of filling substances and an acrylic binder.

Hilti Firestop Joint Spray CFS-SP WB is supplied in 19 Litre buckets.

The Control Plan is defined in document "Control Plan related to the UK Technical Assessment UKTA-23/0002 - Hilti Firestop Joint Spray CFS-SP WB" which is a non-public part of this UKTA.

Technical product literature:

- Technical data sheet "Hilti Firestop Joint Spray CFS-SP WB"
- Safety data sheet according to 1907/2006/EC, Article 31, for "Hilti Firestop Joint Spray CFS-SP WB"

1.2 Mineral Wool

"Termarock 40" or "Termarock 40" with a higher bulk density has to be used as a backfilling material for the perimeter seal as long as it can be compressed by ≥ 50%. The valid compression direction is A-A.

No.	Characteristics	Specification
1	Mineral /Stone wool	EN 13162 or EN 14303
2	Density	40 to 70 kg/m^3
3	Facing	No Al-facing, no other facing
4	Reaction to fire class	A1 according EN 13501-1
5	Melting point	$\geq$ 1000°C

ANNEX 2: RESISTANCE TO FIRE CLASSIFICATION OF HILTI FIRESTOP SILICONE SPRAY CFS-SP SIL

2.1 Specific characteristics for rigid floor and curtain wall construction

Construction element	Construction	
1. Rigid floors	1.a) Concrete	
	➢ Minimum density 2400 kg/m^3 ➢ Minimum thickness 150 mm ➢ The rigid floor shall be classified in accordance with EN 13501-2 for the required fire resistance period	
2. Curtain wall	2.a) Steel framed (transoms, mullions) 2.b) Aluminium framed (transoms, mullions)	
	➢ The cavity formed by the spandrel panel and the framing shall be filled with stone wool or stone wool board of a nominal density of minimum:	
	➢ ~70 kg/m^3 (with calcium silicate boards and/or steel or aluminium sheet)	➢ ~120 kg/m^3 foil faced (without calcium silicate boards and/or steel or aluminium sheet)

2.2 Perimeter seal installation specifics

Hilti Firestop Joint Spray CFS-SP WB (A) must be applied with a t_A = ~3-5 mm wet film thickness, resulting in ~2 mm dry film thickness. Application of Hilti Firestop Joint Spray CFS-SP WB (A) should overlap the floor construction and curtain wall (L_1) a minimum 15 mm. As backfilling material, a mineral wool product (B_1) as specified in Annex 1.2 should be installed. This mineral wool must be compressed by ≥ 50% during installation to a depth t_B ≥ 150 mm.

Splice distances:

- For curtain wall 2.a) (steel framed according to clause 2.1 of the UKTA) = 1000 mm
- For curtain wall 2.b) (aluminium framed according to clause 2.1 of the UKTA) = 200 mm

Nominal joint width (w): 10 to 200 mm

Movement capability: max. ± 25%

2.3 Classification for perimeter seal

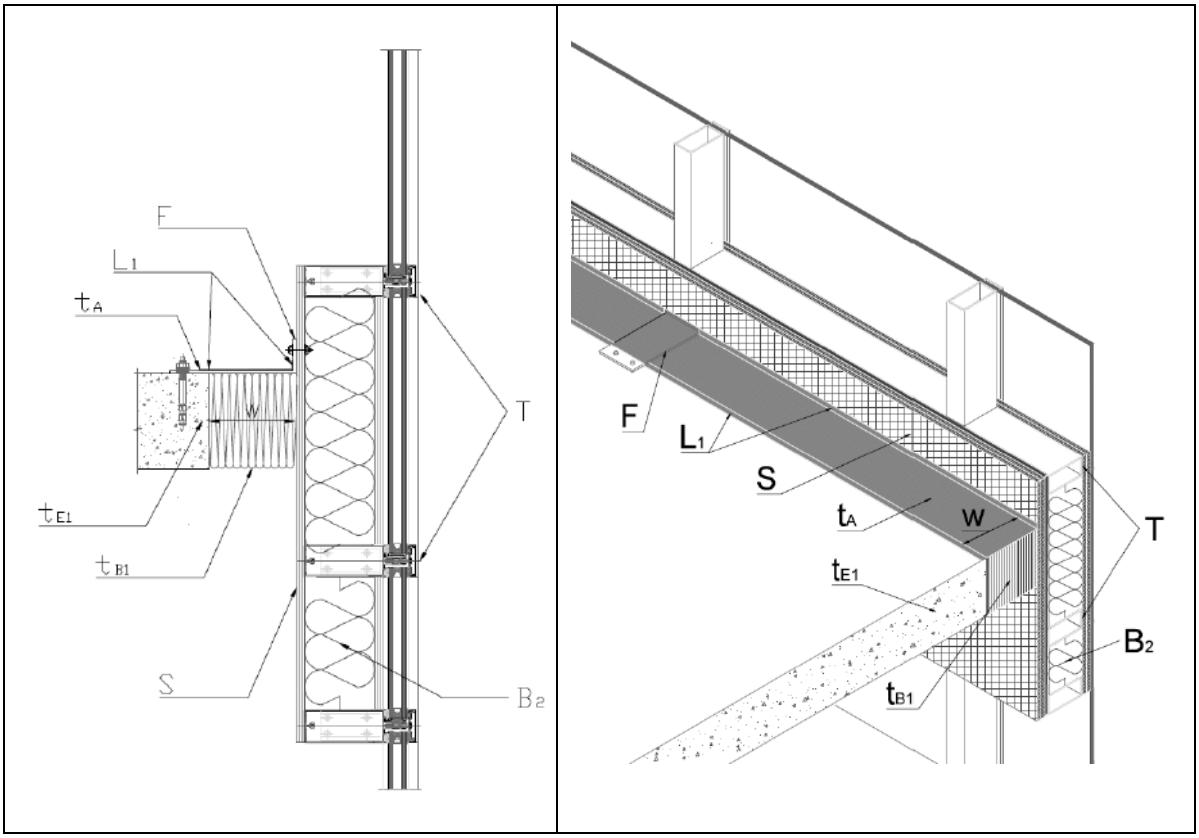
The perimeter seal as described in Annex 2, clause 2.2 of the UKTA with

- a joint width (w) of 10 to 200 mm and
- a maximum movement capability of ± 25% has a classification of:

Steel framed curtain wall
EI 90 – H – F – M25 – W 10 to W 200

Aluminium framed curtain wall
EI 180 – H – F – M25 – W 10 to W 200

2.4 Typical installation detail for floor slab to external façade

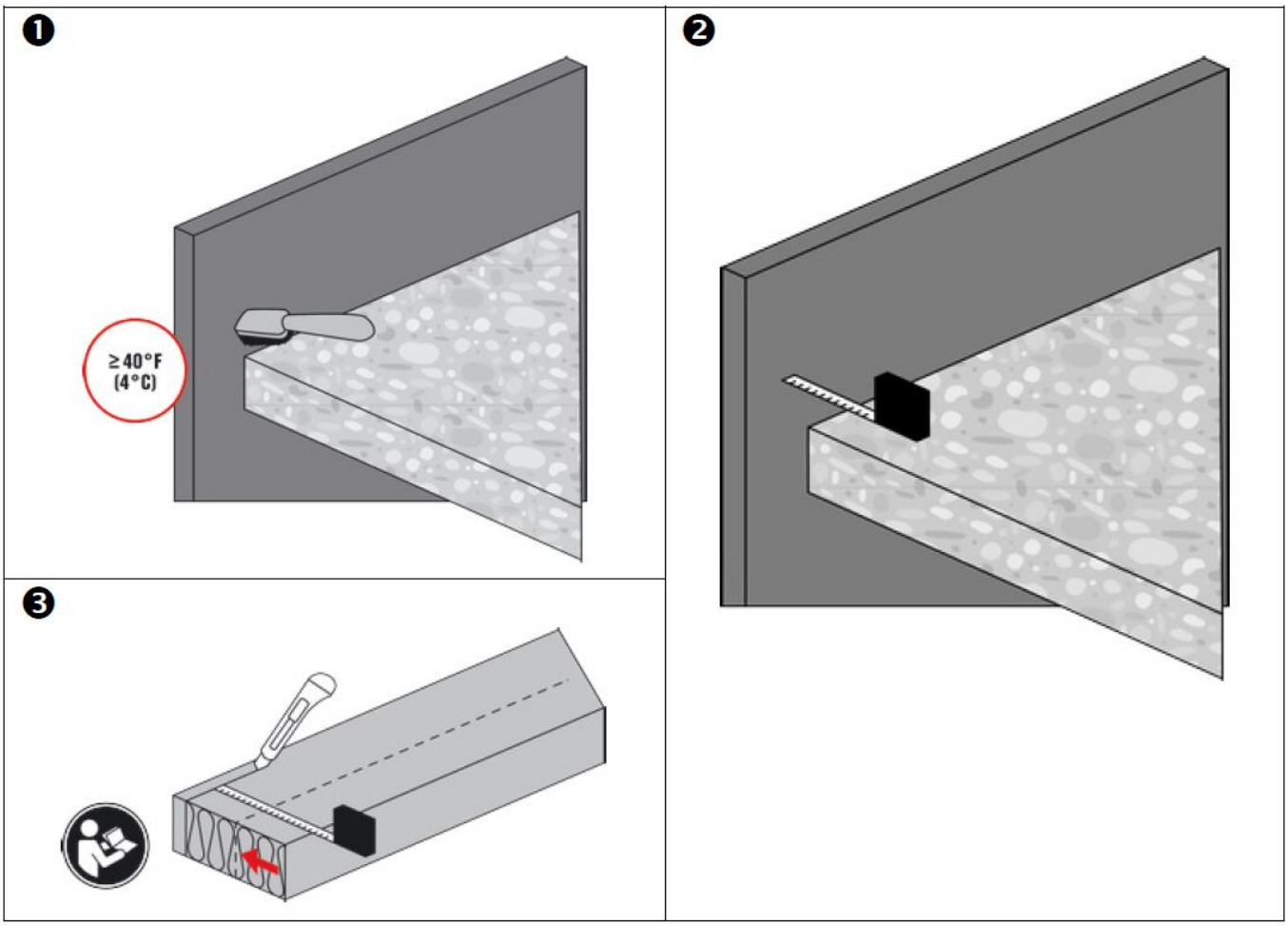


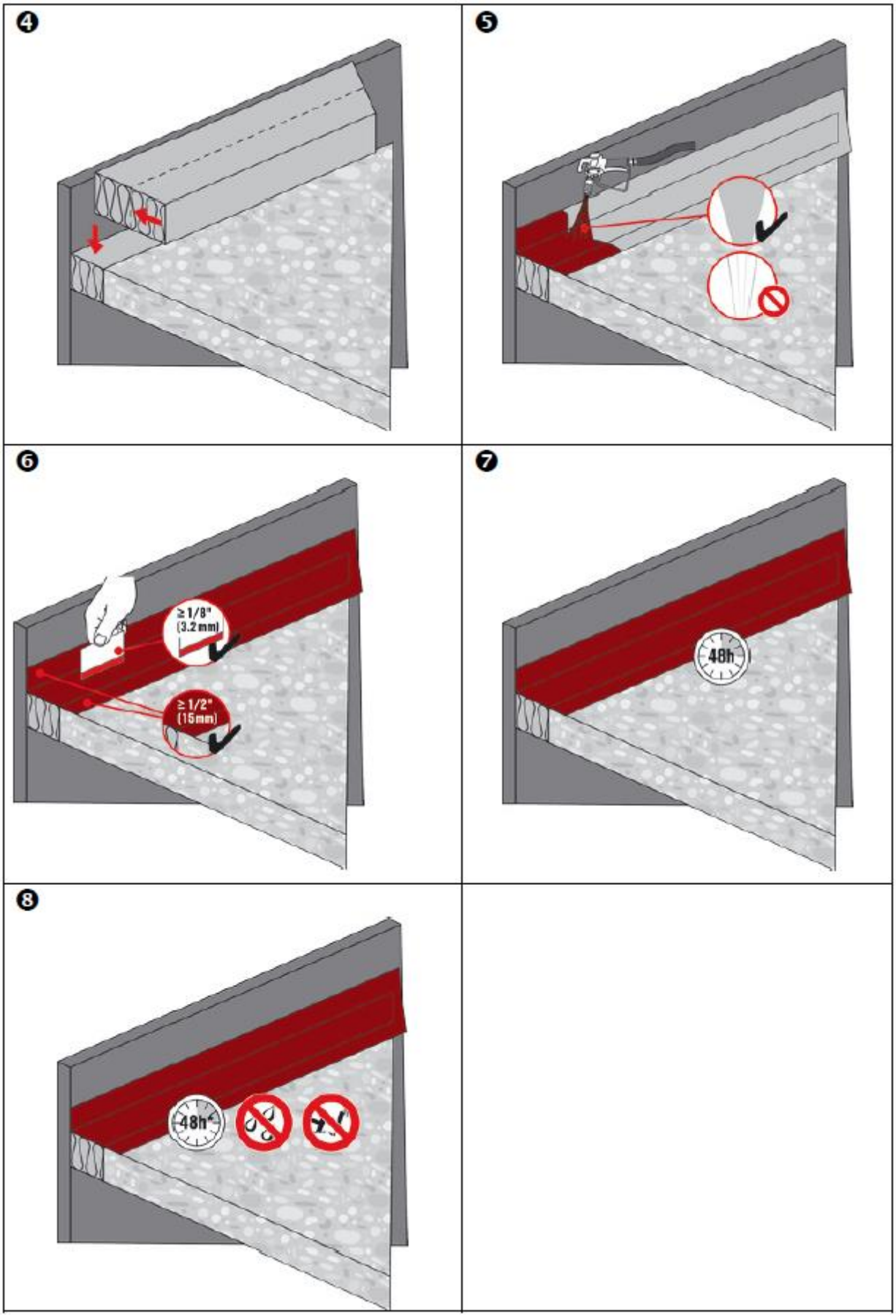
2.5 Abbreviations used in drawings

Label	Description
A	Hilti Firestop Joint Spray CFS-SP WB
B_1	Backfilling material (mineral wool) of perimeter seal
B_2	Backfilling material (mineral wool) of curtain wall
E_1	Rigid floor construction
F	Fixing Bracket
L_1	Overlap of Hilti Firestop Joint Spray CFS-SP WB
S	Steel or Aluminium Sheet
T	Transom
t_A	Thickness of Hilti Firestop Joint Spray CFS-SP WB
t_{B1}	Thickness of backfilling material
t_{E1}	Thickness of the rigid floor construction / joint depth
w	Joint width

ANNEX 3: INSTALLATION OF THE PRODUCT AND ANCILLARY PRODUCT(S)

Installation of the Hilti Firestop Joint Spray CFS-SP WB should be conducted as follows:




4
5
6
≥ 1/8"
(3.2 mm)
≥ 1/2"
(15 mm)
7
48h
8
48h

ANNEX 4: REFERENCE DOCUMENTS

4.1 References to standards mentioned in the UKTA

EN 1364-4	Fire resistance tests for non-loadbearing elements - Part 4: Curtain walling – Part configuration
EN 13162	Thermal insulation products for buildings – Factory made mineral wool (MW) products - Specification
EN 13501	Fire classification of construction products and building elements: Part 1: Classification using test data from reaction to fire tests Part 2: Classification using test data from fire resistance test
EN ISO 140-1	Measurement of sound insulation in buildings and of building elements: Part 1: Requirements for laboratory test facilities with suppressed flanking transmission
EN 20140	Acoustics – Measurement of sound insulation in buildings and of building elements Part 3: Laboratory measurements of airborne sound insulation of building elements Part 10: Laboratory measurement of airborne sound insulation of small building elements
EN ISO 10140	Acoustics - Laboratory measurement of sound insulation of building elements: Part 1: Application rules for specific products Part 2: Measurement of airborne sound insulation Part 5: Requirements for test facilities and equipment
EN ISO 717-1	Acoustics – Rating of sound insulation of buildings and of building elements: Part 1: Airborne sound insulation

4.2 Other reference documents:

EAD 350141-00-1106	Fire stopping and fire sealing products – Linear Joint and Gap Seals
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