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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-22/0053 of 30/05/2023

Technical Assessment Body Issuing the UKTA:	UL International (UK) Ltd
Trade name of the construction product	Hilti Firestop Silicone Joint Spray CFS-SP SIL
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 15
This UK Technical Assessment contains	14 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

1.1 Definition of the construction product

1. Hilti Firestop Silicone Joint Spray CFS-SP SIL is a membrane-forming coating used to form a perimeter seal between rigid floor slabs and curtain walling with mineral wool as backfilling material. In facade constructions the coating is normally only applied on the top side. Very porous joint edges are treated with Hilti Firestop Silicone Spray diluted with a suitable solvent, 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 2.
2. For further details on Hilti Firestop Silicone Joint Spray CFS-SP SIL and for a specification of suitable mineral wool as backfilling material see Annex 1.
3. For a description of the installation procedure see Annex 3.

1.2 Ancillary products

1. Mineral wool backfilling, see Annex 1

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

The intended use of Hilti Firestop Silicone Joint Spray CFS-SP SIL is to provide fire resistance performance in the area of the perimeter joint between a curtain wall and rigid floor slabs.

The specific elements of construction between which Hilti Firestop Silicone Joint Spray CFS-SP SIL may be used are as follows:

a) Rigid floors: The floor must have a minimum thickness of 150 mm and comprise concrete with a minimum density of 2400 kg/m^3.
b) Curtain walls: with steel or aluminium framing (transoms, mullions). The cavity formed by the spandrel panel and the framing filled with stone wool or stone wool board of a nominal density of minimum:

~60 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

This forming the perimeter joint edge. See figures in Annex 2.4.

The provisions made in this UK Technical Assessment are based on an assumed working life of the Hilti Firestop Silicone Joint Spray CFS-SP SIL 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. It is assumed that damage to the joint seals are repaired according to the manufacturer's instructions or are replaced with a new joint seal.

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 products in relation to the expected economically reasonable working life of the works.

2.1 Use category

The Hilti Firestop Silicone Joint Spray CFS-SP SIL is intended for environmental conditions as defined by use category Type X in accordance with EAD 350141-00-1106, Section 1.2. Since the requirements for type X are met also the requirements for type Y_1, Y_2, Z_1 and Z_2 are fulfilled.

Type X: Products intended for use at conditions exposed to weathering

Type Y_1: Products intended for use at temperatures between -5°C and + 70°C with exposure to UV but without exposure to rain.

Type Y_2: Products intended for use at temperatures between -5°C and + 70°C but without exposure to rain and UV.

Type Z_1: Products intended for use at internal conditions with high humidity, excluding temperatures below 0°C.

Type Z_2: Products intended for uses at internal conditions with humidity classes other than Z_1, excluding temperatures below 0°C.

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	No performance assessed	
	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	EAD 350141-00-1106 clause 2.2.7	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 2.1 of this UKTA
	Movement capability	EAD 350141-00-1106 clause 2.2.13	Clause 3.3.2 of this UKTA
	Cycling of perimeter seals for curtain walls	EAD 350141-00-1106 clause 2.2.14	Clause 3.3.2 of this UKTA
	Compression set	No performance assessed	
	Linear expansion on setting	No performance assessed	
BWR 5	Airborne sound insulation	EN ISO 10140-1 EN ISO 10140-2 EN ISO 717-1	Clause 3.4.1 of this UKTA
BWR 6	Thermal properties	EN 12667	Clause 3.5.1 of this UKTA
	Water vapour permeability	No performance assessed	

3.1 Safety in case of fire (BWR 2)

3.1.1 Reaction to fire

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

3.1.2 Resistance to fire

Hilti Firestop Silicone Joint Spray CFS-SP SIL has been tested in accordance with EN 1364-4:2014.

Based upon these test results and the field of direct application specified within EN 1364-4:2014, Hilti Firestop Silicone Joint Spray CFS-SP SIL has been classified in accordance with EN 13501-2, as shown in Annex 2.

Before the fire test a cycling test according to EAD 350141-00-1106 has been performed to show the ability of the sealing system to accommodate movement ("mechanical ageing") without losing its fire resistance, using the frequency designated "seismic" (30 cycles per minute) at an amplitude of ± 12.5%.

For details of suitable floor constructions and curtain wall constructions see 1.2.1.

3.2 Hygiene, health and environment (BWR 3)

3.2.1 Air permeability

The air permeability of "Hilti Firestop Silicone Joint Spray CFS-SP SIL" with a length of 700mm and width of 80mm was tested according to the principles of EN 1026. The results are shown in the table below:

Pressure (Pa)	50	250
q/A air ($m^3/(h\ m^2)$)	1.2	4.0

There was no failure until a pressure differential of 6,000 Pa.

3.2.2 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

See 3.3.2.

3.3.2 Resistance to impact / movement/cycling of perimeter seals for curtain walls

The resistance to impact/movement has been tested using the test procedure according to EAD 350141-00-1106, section 2.2.14. The test construction was subjected to cycling 500 times between the minimum and maximum joint width corresponding to a movement capability of 12.5%. A cyclic rate of 30 cpm (cycles per minute) was used, designated as seismic. This cycling rate also covers lower frequency cycling rates designated as "wind sway" and "thermal".

3.3.3 Adhesion

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

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 resulting R_w (C;Ctr) and $D_{n,e,w}$ (C; Ctr) values are:

Joint width [mm]	Seal depth [mm]	Coating	R_w (C;Ctr) [dB]	$D_{n,e,w}$ (C;Ctr) [dB]
200	200	Both sides	38 (-1;-5) [a)]	53 (-1;-4) [b)]
200	200	Top side	36 (-1;-3) [a)]	51 (-1;-3) [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 10/01/2022 relating to the UK Technical Assessment 0843-UKTA-22/0053 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 Silicone Joint Spray CFS-SP SIL

Hilti Firestop Silicone Joint Spray CFS-SP SIL is a 1-component product composed essentially of filling substances and a neutral cross-linking silicone.

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

The Control Plan is defined in document "Control Plan related to the UK Technical Assessment UKTA-22/0053 - Hilti Firestop Silicone Joint Spray CFS-SP SIL" which is a non-public part of this UKTA.

1.2 Mineral Wool

Mineral wool products suitable for being used as backfilling material of the perimeter seal

No.	Characteristics	Specification
1	Mineral /Stone wool	EN 13162 or EN 14303
2	Density	~60 kg/m^3
3	Facing	No Al-facing, no other facing
4	Reaction to fire class	A1 or A2 according EN 13501-1
5	Melting point	$\geq$ 1000°C

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

2.1 Specific characteristics for rigid floor and curtain wall construction

a) Rigid floors: The floor must have a minimum thickness t_{E1} ≥ 150 mm and comprise of concrete with a minimum density of 2400 kg/m^3.

b) Curtain wall: Curtain walls with steel or aluminium framing (transoms, mullions). The cavity formed by the spandrel panel and the framing filled with stone wool or stone wool board of a nominal density of minimum:

~60 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

This forming the perimeter joint edge.

See figures in Annex 2.4.

2.2 Perimeter seal installation specifics

Hilti Firestop Joint Spray CFS-SP SIL (A) should be applied with a t_A = ~3 mm wet film thickness and should overlap on floor construction and curtain wall (L_1) at minimum 15 mm. As backfilling material, a mineral wool product (B_1) as specified in Annex 1.2 should be installed by compressing in the A-A direction by ≥ 33% to a depth t_{B1} ≥ 150 mm. Splice distance is required to be ≥ 200 mm. The thickness of the mineral wool slab should be such as t~o result in the application of a minimum number of layers; a maximum number of 3 layers is considered acceptable.

Nominal joint width (w): 10 to 150 mm; Movement capability: max. ± 12.5%

See figures in Annex 2.4.

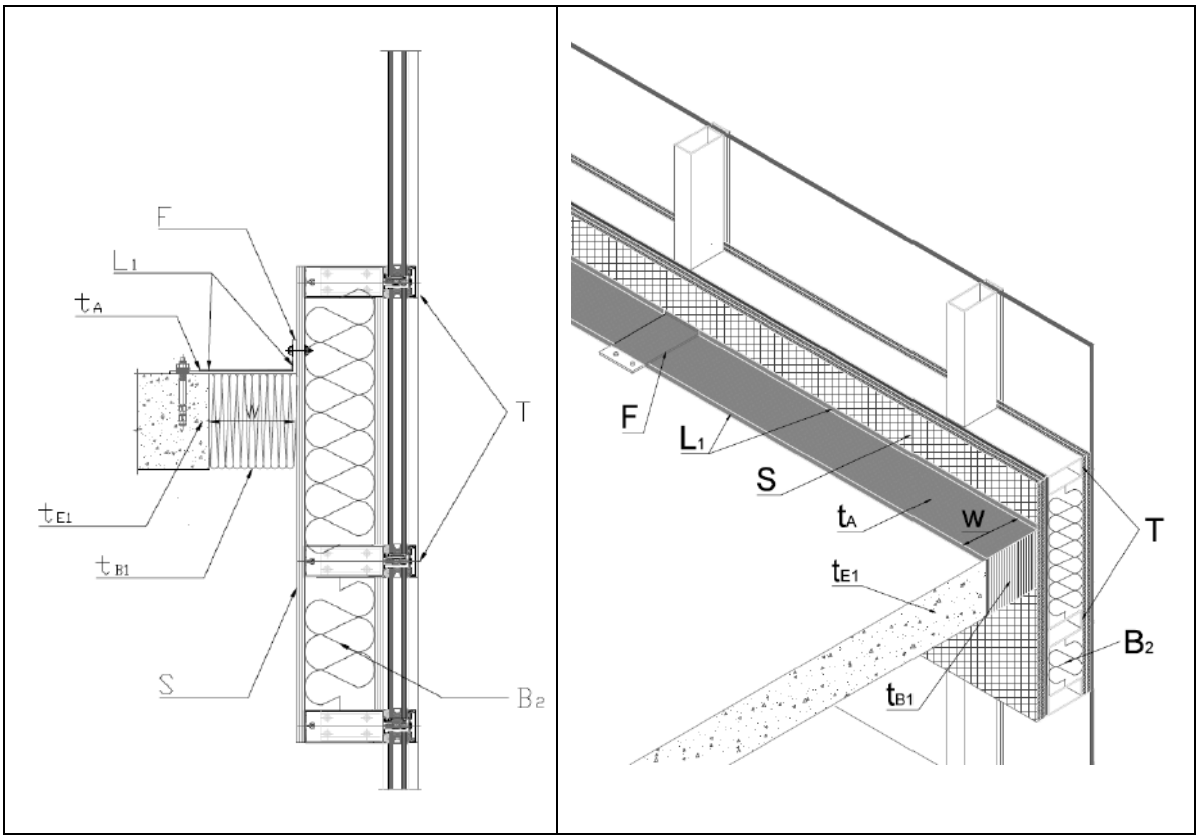
2.3 Classification for perimeter seal

Perimeter seal as described in 2.2 with

- a joint width (w) of 10 to 150 mm and
- a maximum movement capability of ± 12.5% has a classification of:

EI 180 – H – F – M12.5 – W 10 to W 150

2.4 Typical installation detail for floor slab to external façade

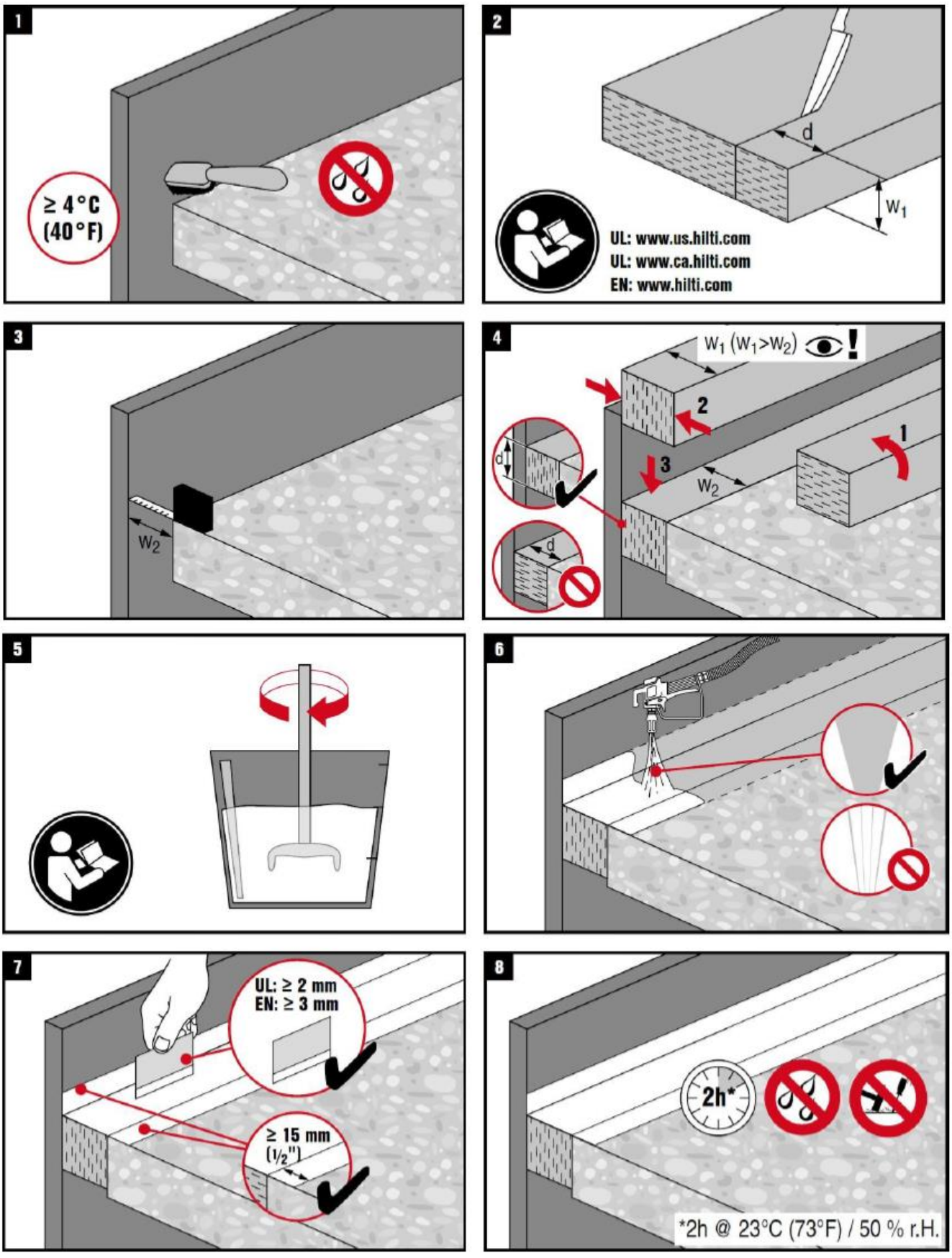


2.5 Abbreviations used in drawings

Label	Description
A	Hilti Firestop Silicone Joint Spray CFS-SP SIL
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 Silicone Joint Spray CFS-SP SIL
S	Steel or Aluminium Sheet
T	Transom
t_A	Thickness of Hilti Firestop Silicone Joint Spray CFS-SP SIL
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 Silicone Joint Spray CFS-SP SIL should be conducted as follows:



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 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 tests
EN 1026	Windows and doors – Air permeability
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
ISO 11600	Building construction - Jointing products - Classification and requirements for sealants

4.2 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