UL-EU CERTIFICATE

Certificate No.
UL-EU-01276-EN

Issue date
2023-09-28

Issue No.
2

Re-Issue date
2026-05-21

Expiry date
2033-09-27

This is to acknowledge that:
fischerwerke GmbH & Co. KG

Address:
Klaus-Fischer-Strasse 1
72178 Waldachtal
Germany

Has had the product:
Fire Stopping and Sealing Product - fischer FFB-ES Plus

evaluated and meets the requirements of the standard(s):

EAD 350454-00-1104, September 2017,
EAD 350141-00-1106, September 2017 and EN 13501-2

Places of production:
fischerwerke GmbH & Co. KG
Industriestr. 103,
72160 Horb am Neckar,
Germany

Authorised Signatory:

Chris Johnson
Issued by UL International (UK) Ltd

UKAS PRODUCT CERTIFICATION
4705

This is to certify that representative samples of the Certified Product listed above have been investigated by Underwriters Laboratories to the Standard(s) indicated on this Certificate, in accordance with the UL Global Services Agreement and the UL-EU Mark Service Terms and Conditions ("Agreement"). The Certificate Holder is entitled to use the UL-EU Mark for the Certified Product listed on the certificate and manufactured at the production site(s) listed, in accordance with the terms of the Agreement. Only those products bearing the UL-EU Mark for Europe should be considered as being covered by UL's UL-EU Mark Service. This Certificate shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.

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This certificate relates to the use of fischer FFB-ES Plus for fire stopping where there are joints in or between walls & floors, perimeter seals for curtain walls or service penetrations through walls. The detailed scope is given in pages 4 to 11 of this Certificate. This shows the thickness and acceptable dimensions, substrates and orientations required to provide fire resistance periods of up to 240 minutes for differing seal configurations and supporting constructions.

The product is certificated on the basis of:

i) Inspection and surveillance of factory production control by UL
ii) Fire resistance test data in accordance with EN 1366-3:2021, EN 1366-4:2021 and EN 1364-4:2014
iii) Classification in accordance with EN 13501-2
iv) Durability and Serviceability as defined in EAD 350141-00-1106 / EAD 350454-00-1104

The durability class of fischer FFB-ES Plus is Type X - Intended for use in conditions exposed to weathering and all lower classes (please refer to installation instructions from manufacturer).

fischer FFB-ES Plus is a one-part water based acrylic spray system and is supplied in buckets which can be sprayed or troweled as a surface-mounted system on a suitable backing material with overlap as specified in this Certificate.

According to EN 1366-3: 2021+A1: 2024, Clause H.4.1.8.6.2, the following end uses are envisaged* based upon the tested pipe end configuration:

Pipe material	Tested pipe end	Envisaged use scenario
Metal	C/U or C/C	Closed pipe systems (e.g. systems under pressure)
	U/U, U/C or C/U	Ventilated pipe systems (e.g. sewage pipes) and for closed pipe systems
Plastic	U/U or C/U	Ventilated pipe systems and for closed pipe systems
	U/U	Ventilated pipe systems, for rainwater systems and for closed pipe systems

* In the case where a national prescription is in conflict with the content of the table above, the national prescriptions prevail.

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Appendix UL-EU CERTIFICATE UL-EU-01276-EN

According to EN 13501-2: 2023, Clause 7.5.8.4, the following classification codes are defined in addition E & EI:

Test conditions	Designation
Specimen orientation - Horizontal supporting construction - Vertical supporting construction – vertical joint - Vertical supporting construction – horizontal joint	 H V T
Movement capability - No movement - Movement induced lateral (in%) - Movement induced lateral (in%)	 X $M_{lat}000$ $M_{shear}000$
Type of splices - Manufactured - Field - Both manufactured and field	 M F B
Joint widths range (in mm)	W w1 to w2
e.g. EI 30 – H – $M_{lat}30$ – B – W 30 to W 90	

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Appendix UL-EU CERTIFICATE UL-EU-01276-EN

Product-type: Coating		Intended use: Linear Joint and Gap Seals & Penetration Seals
Basic requirement for construction work	Basic Requirement	Basic requirement for construction work
BWR 2 Safety in case of fire		
EN 13501-1	Reaction to fire	D-s1, d1
EN 13501-2	Resistance to fire	See pages 6-11
BWR 3 Hygiene, health and environment		
Declaration of manufacturer & EN 16516	Content, emission and/or release of dangerous substances	Use categories: IA1 VOC / SVOC: See page 5
EN 1026	Air permeability (material property)	See page 5
EAD 350141-00-1106, Annex C & EN 12390-8	Water permeability (material property)	No performance determined
BWR 4 Safety in use		
EOTA TR 001:2003	Mechanical resistance and stability	No performance determined
EOTA TR 001:2003	Resistance to impact/movement	No performance determined
EOTA TR 001:2003 ISO 11600 & EAD 350141-00-1106, Clause 2.2.8	Adhesion	12,5P
EAD 350141-00-1106, Clause 2.2.12	Durability	Type X
EAD 350141-00-1106, Clause 2.2.13	Movement capacity	12,5P
EAD 350141-00-1106, Clause 2.2.14	Cycling of perimeter seals for curtain walls	See page 11
EAD 350141-00-1106, Clause 2.2.15	Compression set	No performance determined
EAD 350141-00-1106, Clause 2.2.16	Linear expansion on setting	No performance determined
BWR 5 Protection against noise		
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	See page 5
BWR 6 Energy economy and heat retention		
EN 12664, EN 12667, EN 12939, EN ISO 8990, EN ISO 6946, EN ISO 10456	Thermal properties	No performance determined
EN ISO 12572, EN 12086, EN ISO 10456	Water vapour permeability	No performance determined

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Basingstoke. RG24 8AH United Kingdom

Appendix UL-EU CERTIFICATE UL-EU-01276-EN

Content, emission and/or release of dangerous substances The release of semi-volatile organic compounds (SVOC) and volatile organic compounds (VOC) has been determined according to EAD 350141-00-1106 / EAD 350454-00-1104 and EN 16516:2017+A1:2020. The loading factor used for emission testing was 0.007 m^2/m^3.		
Total emission of SVOC after 3 days / 28 days [mg/m^3]	Total emission of VOC after 3 days [mg/m^3]	Total emission of VOC after 28 days [mg/m^3]
None determined	0.064	0.009

Air Permeability according to EN 1026:2016	
Dimensions of blank specimen fischer FFB-ES Plus applied on one side of assembly 1.5-2 mm thick with 13 mm overlap onto substrate and backfilled with stone wool insulation (60 kg/m^3)	**Air leakage**
Ø 300 mm	No measurable air flow up to 600 Pa
550 mm x 200 mm	
100 mm x 1000 mm	

Acoustic performance according to EN ISO 10140-2 / EN ISO 717-1	
Configuration	**Rated sound reduction index**
1 mm thick (dry film thickness) fischer FFB-ES Plus coating applied onto both sides with 8 mm overlap, backed with 40 mm thick compressed stone wool insulation (80 kg/m^3), installed flush with both surfaces of 100 mm thick test assembly. Opening size: 1250 mm x 100 mm.	Rw (C; Ctr) = 44 (-4; -9) dB

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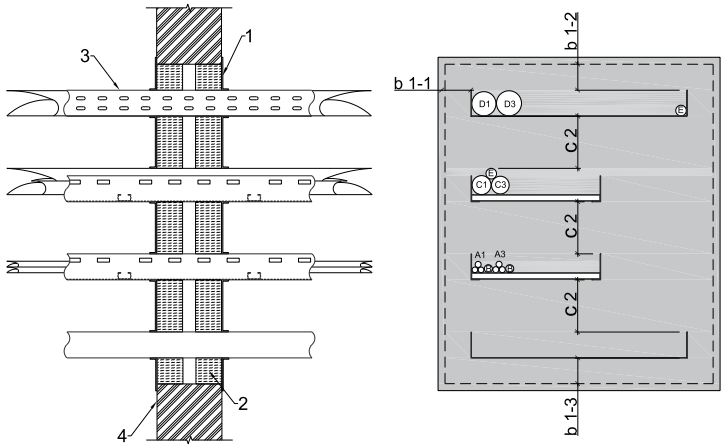
Appendix UL-EU CERTIFICATE UL-EU-01276-EN

Rigid wall constructions with minimum wall thickness of 115 mm
Double sided penetration seal with cables

Perimeter seal: Cable supports, and cables sealed with fischer FFB-ES Plus sealant onto both sides of the wall, backed with stone wool insulation installed flush with both surfaces of wall. Rigid wall thickness ≥115 mm (≥ 650 kg/m³).

Construction details:



Key:
1.fischer FFB-ES Plus
2. Backing material
3. Cable carrier
4. Wall

Minimum working clearance: Distance between cable / cable carrier and the aperture edge

b 1-1 – Distance between a cable/the cable carrier and the aperture edge – aside (≥ 50mm)

b 1-2 – Distance between a cable/the upper cable carrier and the aperture edge – above (≥ 50mm)

b 1-3 – Distance between a cable/the cable carrier and the aperture edge - underneath (≥ 50mm)

c1 (Not shown) - distance between a cable carrier and another cable carrier – aside (≥ 100 mm)

c2 – distance between a cable/cable carrier and other cables / cable carriers – underneath (≥ 250mm)

Maximum annular space: 400 mm

Cable support (with cable carrier) ≤ 250mm from both surfaces of wall

Cable support (without cable carrier) ≤ 150mm from both surfaces of wall

Type of penetrant	Cable type	Maximum aperture size	Seal thickness	Seal overlap on wall and penetrant	Backing material	Classification
Service option 'L'	Sheathed cables / telecommunication cables / optical fibre cables up to a max. outer diameter of 80 mm with or without cable carrier	750 mm x 600 mm (width x height)	≥1.6 mm*	≥13 mm	≥50 mm thick stone wool insulation flush with both surfaces of wall (≥60 kg/m³)**	E 45 / EI 30

* wet film thickness

** ≥15 mm air gap between layers of insulation

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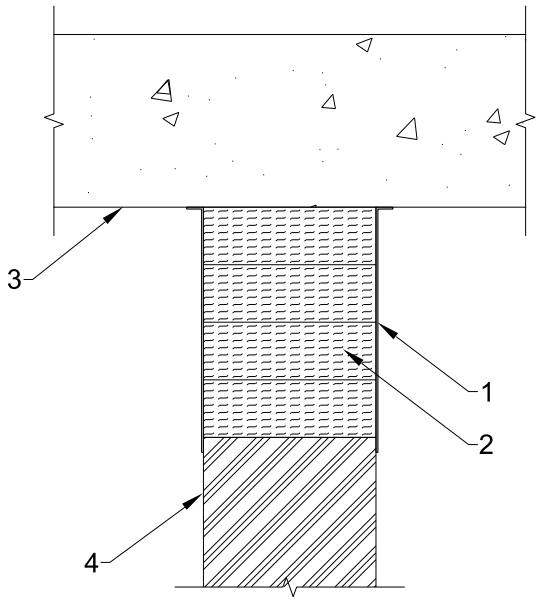
Head of wall constructions with rigid wall and floor, thickness of minimum 150 mm
Double sided head of wall joint seal with movement

Joint Seal: fischer FFB-ES Plus sealant applied to both sides of the wall with overlap onto substrate and backed with stone wool, installed flush with both surfaces of wall.

Construction details:



Key:

1. fischer FFB-ES Plus
2. Backing Material
3. Floor (≥ 150 mm)
4. Wall (≥ 150 mm)

Substrate (floor / wall)	Seal thickness*	Seal overlap	Movement capability	Backing material	Classification
Concrete floor (ρ ≥ 2400 kg/m³) / Masonry wall (ρ ≥ 650 kg/m³)	≥1.6 mm	≥13 mm	±15 %	Stone wool, thickness ≥150 mm, density ≥60 kg/m³, compressed ≥40 %	EI 180 – T – M_{lat}15 – F – W 5 to W 250
			±25 %	Stone wool, thickness ≥150 mm, density ≥60 kg/m³, compressed ≥33 %	EI 180 – T – M_{lat}25 – F – W 5 to W 200

* wet film thickness

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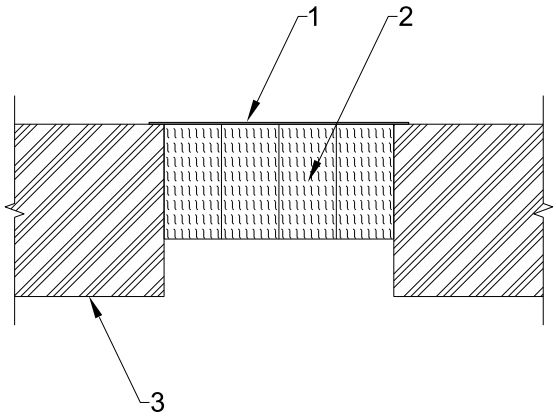
Rigid floor constructions with floor thickness of minimum 150 mm
Single sided linear joint seal in floor installed on top side

Joint Seal: fischer FFB-ES Plus sealant applied to top side of the floor with overlap onto substrate and backed with stone wool, installed flush with top surface of floor

Construction details:



Key:

1. fischer FFB-ES Plus
2. Backing material
3. Floor (≥150 mm)

Substrate	Seal thickness*	Seal overlap	Movement capability	Backing material	Classification
Concrete (ρ ≥ 650 kg/m³)	≥1.6 mm	≥13 mm	±25 %	Stone wool thickness ≥100 mm, ρ ≥ 60 kg/m³, compressed ≥45 %	E 240 – H – M_{lat}25 – F – W 5 to W 100 EI 120 – H – M_{lat}25 – F – W 5 to W 100
				Stone wool thickness ≥100 mm, ρ ≥60 kg/m³, compressed ≥40 %	E 120 – H – M_{lat}25 – F – W 5 to W 100 EI 90 – H – M_{lat}25 – F – W 5 to W 100
				Stone wool thickness ≥100 mm, ρ ≥60 kg/m³, compressed ≥30 %	E 240 – H – M_{lat}25 – F – W 5 to W 100 EI 60 – H – M_{lat}25 – F – W 5 to W 100

* wet film thickness

UL International (UK) Limited
Unit 1-4 Horizon, Kingsland Business Park, Wade Rd.,
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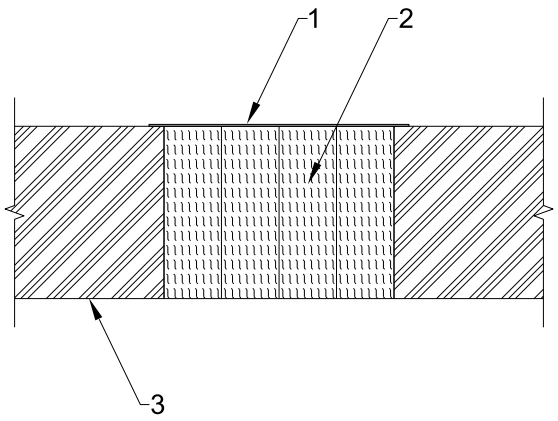
Appendix UL-EU CERTIFICATE UL-EU-01276-EN

Single sided linear joint seal in floor installed on top side

Joint Seal: fischer FFB-ES Plus sealant applied to top side of the floor with overlap onto substrate and backed with stone wool, installed flush with top surface of floor	
Construction details:  	Key: 1. fischer FFB-ES Plus 2. Backing material 3. Floor (≥ 150 mm)

Floor / floor	Seal thickness*	Seal overlap	Movement capability	Backing material	Classification
Concrete (ρ ≥ 650 kg/m³)	≥1.6 mm	≥13 mm	±25 %	Stone wool thickness ≥ 150 mm, ρ ≥ 60 kg/m³, compressed ≥30 %	E 240 – H – M_{lat}25 – F – W 5 to W 100 EI 180 – H – M_{lat}25 – F – W 5 to W 100

* wet film thickness

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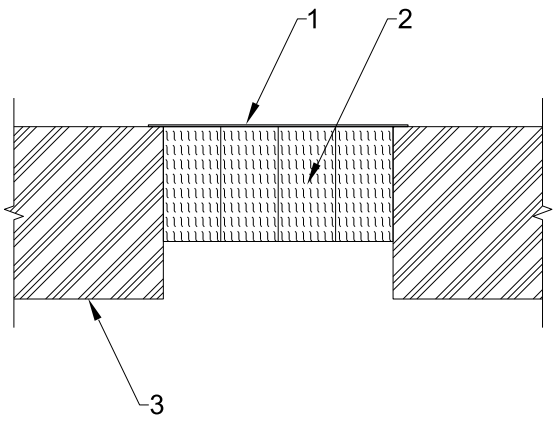
Rigid floor constructions with floor thickness of minimum 200 mm
Single sided linear joint seal in floor installed on top side

Joint Seal:	fischer FFB-ES Plus sealant applied to top side of the floor with overlap onto substrate and backed with stone wool, installed flush with top surface of floor

Construction details:



Key:

1. fischer FFB-ES Plus
2. Backing material
3. Floor (≥ 200 mm)

Substrate	Seal thickness*	Seal overlap	Movement capability	Backing material	Classification
Concrete (ρ ≥ 2400 kg/m³)	≥1.6 mm	≥13 mm	±15 %	Stone wool thickness ≥150 mm, ρ ≥60 kg/m³, compressed ≥ 40 %	EI 240 – H – M_{lat}15 – F – W 5 to W 200
					E 240 – H – M_{lat}15 – F – W 5 to W 300 EI 180 – H – M_{lat}15 – F – W 5 to W 300

* wet film thickness

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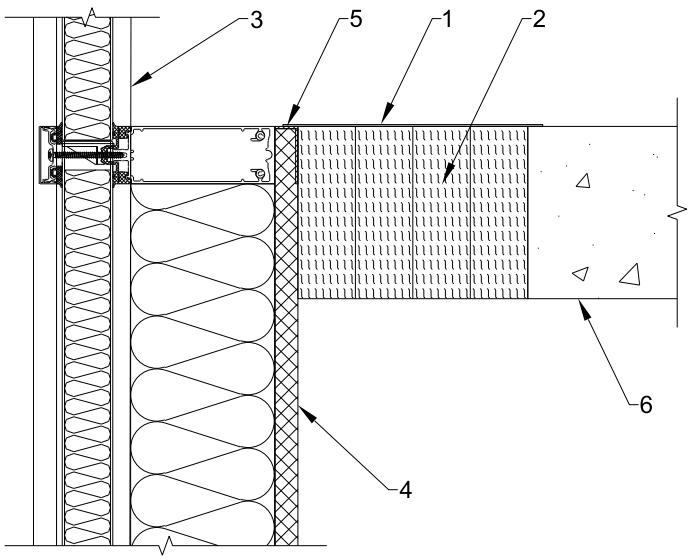
Appendix UL-EU CERTIFICATE UL-EU-01276-EN

Non-fire rated curtain wall façade abutting rigid floor with floor thickness of minimum 150 mm
Single sided perimeter seal in floor installed on top side

Perimeter Seal: fischer FFB-ES Plus applied to top side of the floor with overlap onto substrate and steel bracket and backed with stone wool, installed flush with top surface of floor

Construction details:



Key:

1. fischer FFB-ES Plus
2. Backing material
3. Curtain wall façade***
4. Spandrel area****
5. Steel bracket
6. Floor (≥ 150 mm)

Substrate	Seal thickness*	Seal overlap	Movement capability**	Backing material	Classification
Curtain wall*** / Concrete (ρ ≥2400 kg/m³)	≥1.6 mm	≥13 mm	±15 %	Stone wool (PAROC Pro Slab WR 450) thickness ≥ 150 mm, ρ ≥60 kg/m³, compressed ≥30 %	E 180 – H – M_{lat}15 – F – W 5 to W 250 EI 90 – H – M_{lat}15 – F – W 5 to W 250

* wet film thickness

** movement per EAD 350141-00-1106 with 500 cycles at a rate of 30 cycles per minute compression and extension

*** Curtain walls with steel framing (made of transoms and mullions (profile 125 x 50, article no. 110020 as per ETA-21/0387) with a maximum width of 983 mm on centre between the mullions).

**** Mineral wool protection of spandrel area: Infill between mullions and transoms with stone wool in entire thickness (PAROC Pro Slab WR 450, ρ ≥ 60 kg/ m³) backed with 50 mm thick stone wool board (PAROC Pro Slab 150, ρ ≥ 150 kg/m³)

Perimeter seal installation specifics:
Backing material is installed between steel bracket of spandrel area insulation and concrete floor flush to the top surface of floor and transom/steel bracket with min. 30% compression. Splice distance ≥ 983 mm. Fischer FFB-ES Plus is applied to top side of the floor with overlap onto substrate and steel bracket. The L-brackets of the façade system are fixed to each mullion above splice location of perimeter seal.

Spandrel height: ≤ 1000 mm. Test results cover smaller panel width and height.

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Appendix UL-EU CERTIFICATE UL-EU-01276-EN

The UL-EU Marks, displayed below represent the enhanced and alternate version of the product marking. Either Mark can be used. These Marks shall appear on certified products only. Minimum size is not specified, as long as the Mark is legible. The following is suggested.

*Note: E12345 is an example of the UL file number.

The minimum height of the registered trademark symbol ® shall be 1 mm. When the overall diameter of the UL-EU Mark is less than 9.5 mm, the trademark symbol may be omitted if it is not legible to the naked eye.

The UL-EU Mark may appear on a label, nameplate, or may be cast, stamped or molded into the product. When appearing on a label or nameplate, the Manufacturer's name or trademark along with a model number and UL File number are also required on that same label or nameplate. If cast, stamped or molded, the Manufacturer's name or trademark and model number shall also appear elsewhere on the product.

All content shall be in accordance with the details provided on this UL-EU Certificate.

PROCUREMENT

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