

# UL-EU CERTIFICATE

**Certificate No.** UL-EU-01276-EN  
**Page** 1/11  
**Date of Issue** 2023-09-28

**Certificate Holder** fischerwerke GmbH & Co. KG  
Klaus-Fischer-Strasse 1  
72178 Waldachtal  
Germany

**Manufacturer** fischerwerke GmbH & Co. KG  
Otto-Hahn-Straße 15  
79211 Denzlingen  
Germany

**Certified Product Type** Fire Stopping and Sealing Product  
**Product Trade Name** fischer FFB-ES Plus  
**Trademark** N/A  
**Rating/Classification** See Appendix

**Harmonised Technical Specifications**

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

**Supporting Documentation**

Classification Report No. 4790892704.1-01 and  
4790892704.1-02

**Additional information**

Additional test evidence is held on file

**Expiry date**

2033-09-27



A blue ink signature of Chris Johnson, written in a cursive style.

**Authorized Certification Decision Maker**  
Chris Johnson

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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.



# Appendix UL-EU CERTIFICATE

**Certificate No.** UL-EU-01276-EN  
**Page** 2/11  
**Date of Issue** 2023-09-28

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 3 to 10 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.



# Appendix UL-EU CERTIFICATE

Certificate No. UL-EU-01276-EN  
 Page 3/11  
 Date of Issue 2023-09-28

|  |  |  |
|--|--|--|
| Product-type: Coating  |  | Intended use: Linear Joint and Gap Seals & Penetration Seals |
| Basic requirement for construction work                              | Basic Requirement  | Basic requirement for construction work                      |
| <b>BWR 2 Safety in case of fire</b>                                  |  |  |
| EN 13501-1   | Reaction to fire   | D-s1, d1   |
| EN 13501-2   | Resistance to fire                                       | See pages 5-10   |
| <b>BWR 3 Hygiene, health and environment</b>                         |  |  |
| Declaration of manufacturer & EN 16516                               | Content, emission and/or release of dangerous substances | Use categories: IA1<br>VOC / SVOC: See page 5                |
| EN 1026  | Air permeability (material property)                     | See page 4   |
| EAD 350141-00-1106, Annex C & EN 12390-8                             | Water permeability (material property)                   | No performance determined                                    |
| <b>BWR 4 Safety in use</b>   |  |  |
| 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<br>ISO 11600 & EAD 350141-00-1106,<br>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 10  |
| 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                                    |
| <b>BWR 5 Protection against noise</b>                                |  |  |
| EN 10140-1,2,4,5/ EN ISO 717-1                                       | Airborne sound insulation                                | See page 4   |
| <b>BWR 6 Energy economy and heat retention</b>                       |  |  |
| 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                                    |



# Appendix UL-EU CERTIFICATE

Certificate No. UL-EU-01276-EN  
 Page 4/11  
 Date of Issue 2023-09-28

## 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<sup>2</sup>/m<sup>3</sup>.

| Total emission of SVOC after 3 days / 28 days [mg/m <sup>3</sup> ] | Total emission of VOC after 3 days [mg/m <sup>3</sup> ] | Total emission of VOC after 28 days [mg/m <sup>3</sup> ] |
|--|---|--|
| None determined  | 0.064   | 0.009  |

## Air Permeability according to EN 1026:2016

| Dimensions of blank specimen  | Air leakage                         |
|---|-------------------------------------|
| fischer FFB-ES Plus applied on one side of assembly<br>1.5-2 mm thick with 13 mm overlap onto substrate and backfilled with stone wool insulation (60 kg/m <sup>3</sup> ) | No measurable air flow up to 600 Pa |
| Ø 300 mm  |                                     |
| 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 <sup>3</sup> ), installed flush with both surfaces of 100 mm thick test assembly. Opening size: 1250 mm x 100 mm. | R <sub>w</sub> (C; C <sub>tr</sub> ) = 44 (-4; -9) dB |



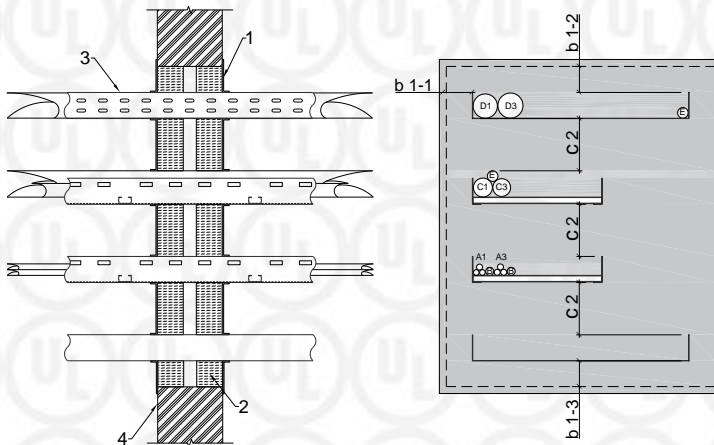
# Appendix UL-EU CERTIFICATE

Certificate No. UL-EU-01276-EN  
 Page 5/11  
 Date of Issue 2023-09-28

## 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  $\geq 115$  mm ( $\geq 650$  kg/m<sup>3</sup>).

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 ( $\geq 50$ mm)
- b 1-2 – Distance between a cable/the upper cable carrier and the aperture edge – above ( $\geq 50$ mm)
- b 1-3 – Distance between a cable/the cable carrier and the aperture edge - underneath ( $\geq 50$ mm)
- c1 (Not shown) - distance between a cable carrier and another cable carrier – aside ( $\geq 100$  mm)
- c2 – distance between a cable/cable carrier and other cables / cable carriers – underneath ( $\geq 250$ mm)

Maximum annular space: 400 mm

Cable support (with cable carrier)  $\leq 250$ mm from both surfaces of wall

Cable support (without cable carrier)  $\leq 150$ mm 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) | $\geq 1.6$ mm* | $\geq 13$ mm                       | $\geq 50$ mm thick stone wool insulation flush with both surfaces of wall ( $\geq 60$ kg/m <sup>3</sup> )** | E 45 / EI 30   |

\* wet film thickness

\*\*  $\geq 15$  mm air gap between layers of insulation



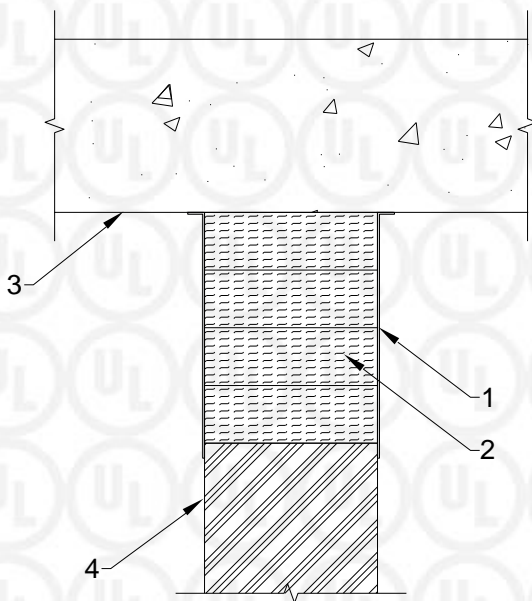
# Appendix UL-EU CERTIFICATE

Certificate No. UL-EU-01276-EN  
 Page 6/11  
 Date of Issue 2023-09-28

## 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. FFB-ES Plus
2. Backing Material
3. Floor ( $\geq 150$  mm)
4. Wall ( $\geq 150$  mm)

| Substrate (floor / wall)   | Seal thickness* | Seal overlap | Movement capability | Backing material  | Classification                      |
|--|-----------------|--------------|---------------------|---|-------------------------------------|
| Concrete floor ( $\rho \geq 2400$ kg/m <sup>3</sup> ) / Masonry wall ( $\rho \geq 650$ kg/m <sup>3</sup> ) | $\geq 1.6$ mm   | $\geq 13$ mm | $\pm 15$ %          | Stone wool, thickness $\geq 150$ mm, density $\geq 60$ kg/m <sup>3</sup> , compressed $\geq 40$ % | EI 180 – T – M15 – F – W 5 to W 250 |
|  |                 |              | $\pm 25$ %          | Stone wool, thickness $\geq 150$ mm, density $\geq 60$ kg/m <sup>3</sup> , compressed $\geq 33$ % | EI 180 – T – M25 – F – W 5 to W 200 |

\* wet film thickness



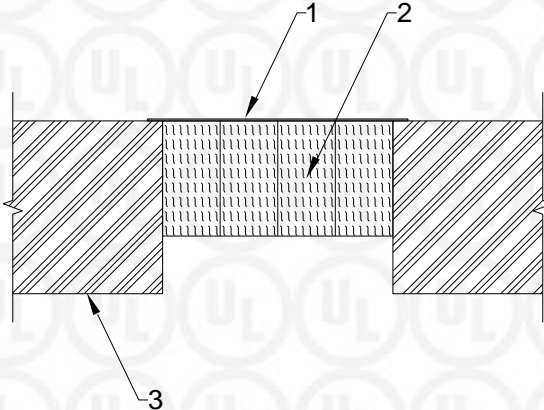
# Appendix UL-EU CERTIFICATE

Certificate No. UL-EU-01276-EN  
 Page 7/11  
 Date of Issue 2023-09-28

## 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. FFB-ES Plus
2. Backing material
3. Floor ( $\geq 150$  mm)

| Substrate                                      | Seal thickness*       | Seal overlap         | Movement capability | Backing material  | Classification  |
|--|-----------------------|----------------------|---------------------|---|---|
| Concrete<br>( $\rho \geq 650 \text{ kg/m}^3$ ) | $\geq 1.6 \text{ mm}$ | $\geq 13 \text{ mm}$ | $\pm 25 \%$         | Stone wool thickness<br>$\geq 100 \text{ mm}$ ,<br>$\rho \geq 60 \text{ kg/m}^3$ ,<br>compressed $\geq 45 \%$ | E 240 – H – M25 – F – W 5 to W 100<br>EI 120 – H – M25 – F – W 5 to W 100 |
|  |                       |                      |                     | Stone wool thickness<br>$\geq 100 \text{ mm}$ ,<br>$\rho \geq 60 \text{ kg/m}^3$ ,<br>compressed $\geq 40 \%$ | E 120 – H – M25 – F – W 5 to W 100<br>EI 90 – H – M25 – F – W 5 to W 100  |
|  |                       |                      |                     | Stone wool thickness<br>$\geq 100 \text{ mm}$ ,<br>$\rho \geq 60 \text{ kg/m}^3$ ,<br>compressed $\geq 30 \%$ | E 240 – H – M25 – F – W 5 to W 100<br>EI 60 – H – M25 – F – W 5 to W 100  |

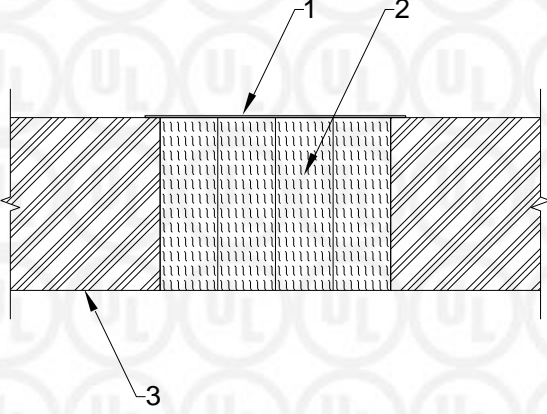
\* wet film thickness



# Appendix UL-EU CERTIFICATE

Certificate No. UL-EU-01276-EN  
 Page 8/11  
 Date of Issue 2023-09-28

## Single sided linear joint seal in floor installed on top side

|   |  |
|---|--|
| <b>Joint Seal:</b> 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 |  |
| <p>Construction details:</p>    | <p>Key:</p> <ol style="list-style-type: none"> <li>1. FFB-ES Plus</li> <li>2. Backing material</li> <li>3. Floor (<math>\geq 150</math> mm)</li> </ol> |

| Floor / floor                                  | Seal thickness*       | Seal overlap         | Movement capability | Backing material  | Classification  |
|--|-----------------------|----------------------|---------------------|---|---|
| Concrete<br>( $\rho \geq 650 \text{ kg/m}^3$ ) | $\geq 1.6 \text{ mm}$ | $\geq 13 \text{ mm}$ | $\pm 25 \%$         | Stone wool<br>thickness $\geq 150 \text{ mm}$ ,<br>$\rho \geq 60 \text{ kg/m}^3$ ,<br>compressed $\geq 30 \%$ | E 240 – H – M25 – F – W 5 to W 100<br>EI 180 – H – M25 – F – W 5 to W 100 |

\* wet film thickness





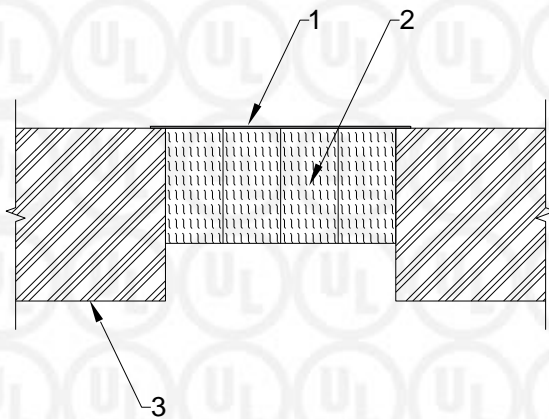
# Appendix UL-EU CERTIFICATE

Certificate No. UL-EU-01276-EN  
 Page 9/11  
 Date of Issue 2023-09-28

## 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. FFB-ES Plus
2. Backing material
3. Floor ( $\geq 200$  mm)

| Substrate                                       | Seal thickness*       | Seal overlap         | Movement capability | Backing material  | Classification  |
|---|-----------------------|----------------------|---------------------|---|---|
| Concrete<br>( $\rho \geq 2400 \text{ kg/m}^3$ ) | $\geq 1.6 \text{ mm}$ | $\geq 13 \text{ mm}$ | $\pm 15 \%$         | Stone wool thickness<br>$\geq 150 \text{ mm}$ ,<br>$\rho \geq 60 \text{ kg/m}^3$ ,<br>compressed $\geq 40 \%$ | EI 240 – H – M15 – F – W 5 to W 200                                       |
|   |                       |                      |                     |   | E 240 – H – M15 – F – W 5 to W 300<br>EI 180 – H – M15 – F – W 5 to W 300 |

\* wet film thickness



# Appendix UL-EU CERTIFICATE

Certificate No. UL-EU-01276-EN  
 Page 10/11  
 Date of Issue 2023-09-28

**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. 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*** /<br>Concrete<br>( $\rho \geq 2400 \text{ kg/m}^3$ ) | $\geq 1.6 \text{ mm}$ | $\geq 13 \text{ mm}$ | $\pm 15 \%$           | Stone wool thickness<br>$\geq 150 \text{ mm}$ ,<br>$\rho \geq 60 \text{ kg/m}^3$ ,<br>compressed $\geq 30 \%$ | E 180 – H – M15 – F – W 5 to W 250<br>EI 90 – H – M15 – 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 ( $\rho \geq 60 \text{ kg/m}^3$ ) backed with 50 mm thick stone wool board ( $\rho \geq 150 \text{ kg/m}^3$ )

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  $\geq 983 \text{ mm}$ . 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.

Form-ULID-006104 (DCS:27-CP-F0855) 6.0



# Appendix UL-EU Certificate

|                           |                   |
|---------------------------|-------------------|
| <b>Certification Mark</b> | <b>UL-EU mark</b> |
| <b>Certificate No.</b>    | UL-EU-01276-EN    |
| <b>Page</b>               | 11/11             |
| <b>Date of Issue</b>      | 2023-09-28        |

The UL-EU Mark, as displayed below, shall appear on certified products only. Minimum size is not specified, as long as the Mark is legible. The following is suggested.



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 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

The Production site may reproduce the Mark or obtain it from a UL authorized supplier. The list of UL authorized suppliers can be found on UL's online directory at [www.ul.com](http://www.ul.com).

Form-ULID-006104 (DCS:27-CP-F0855) 6.0

