

EMSEAL LLC

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EMSEAL JOINT SYSTEMS, LTD

25 Bridle Lane
Westborough, MA 01581-1228 USA
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DECLARATION OF PERFORMANCE EMSHIELD DFR /EMSHIELD WFR

| | |
|--|---|
| Number of the declaration of performance | 07.13.2018-CA-FR-vs01 |
| 1. Unique identification code of the product-type: | EMSHIELD DFR / EMSHIELD WFR |
| 2. Intended uses : | <p>The intended use of fire rated movement joints EMSHIELD WFR and EMHIELD DFR is to reinstate the fire resistance performance of separating building elements where they are interrupted.</p> <p>EMSHIELD DFR is used as a joint seal in a floor or as horizontal joint abutting a floor, ceiling or roof (configurations) A and D in figure 1 in EA 350141-00-1106).</p> <p>EMSHIELD WFR is used as a vertical joint seal in a wall (configuration B in figure 1 in EAD 350141-00-1106)</p> <p>Joints are made of dual-sided silicone sealing surfaces adhered to a fire-retardant impregnated polyurethane foam backing.</p> |
| 3. Manufacturer | EMSEAL Joint Systems Ltd. 25 Bridle Lane Westborough, MA 01581 – U.S.A. |
| 5. System of AVCP | System 1 |
| 6-b European Assessment Document | EAD 350141-00-1106 (Fire Stopping and Fire Sealing Products) |
| European Technical Assessment | ETA-17/0893 of 9 th may 2018 |
| Technical Assessment body | Centre Scientifique et Technique du Bâtiment (CSTB) |
| Notified body | Centre Scientifique et Technique du Bâtiment (CSTB) identification number 0679 |

9. Declared performance:

| Harmonized technical specification | | | |
|------------------------------------|-------------------------|-------------------------------|------------------------------|
| Essential Characteristics | Performance | Standard | Classification report Number |
| Reaction to Fire: | Class B –S2, d0 | EN 13501-1 | CSTB N° RA17-0223 |
| Resistance to Fire DFR | 4 hours | Class according to EN 13501-2 | CSTB RS16-074 |
| Resistance to Fire WFR | 4 hours | Class according to EN 13501-2 | CSTB RS16-028 |
| Water permeability | No leakage was measured | EN 12155 | CSTB N° FaCeT 17-26068812 |
| Air permeability | No leakage was measured | EN 12155 | CSTB N° FaCeT 17-26068812 |

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| | | | |
|-------------------------------|--|------------|--------------------------------|
| Airborne sound insulation | $R_{s,w} (C, C_{tr}) \geq 54 (-1; -3)$ | EN 10140-2 | CSTB N° AC17-26067126 |
| Movement Capability | 100% (+/- 50%) of normal supplied size. | EN 1366-4 | CSTB RS16-074 CSTB RS16-028 |
| Durability and serviceability | Type X : intended for use in conditions exposed to weathering. | | |

The classement is only valid with conditions :

Respect the arrangement and corresponding installation parameters:

- Fire is under the concrete floor (DFR); Fire is behind a concrete wall (WFR)
- Respect configurations A and D in figure 1.1 in ETAG 026-3 only.
- Density and thickness of the supporting construction must be those required
- Respect the compression ratio of sealing joint.
- Minimum density of the supporting construction (rigid concrete floors) in which DFR2 is used for linear joint ≥ 2400 kg/m³.
- Minimum thickness of the supporting construction (rigid concrete floors) in which DFR2 used for linear joint ≥ 150 mm of concrete.
- Minimum density of the supporting construction in which WFR2 is used for linear joint ≥ 2400 kg/m³
- Minimum thickness of the supporting construction in which WFR2 used for linear joint ≥ 115 mm of concrete

Emshield DFR and WFR must be applied using the component listed in table 1.1 below according to the installation described in annex A :

| Name | Trade reference | Characteristics | Supplier |
|---|-------------------------------|---|--------------------------|
| EPOXY ADHESIVE PART A and B (on the concrete substrate walls) | NOMAD | 2-3mm of thickness | NORTHERN MANUFACTURING |
| | SIKADUR 31 CF | 2-3mm of thickness | SIKA FRANCE |
| Linear joint | Emshield DFR or WFR | <p>ρ polyurethane + silicone = 540 kg/m³ +15% / - 5%,</p> <p>Silicone thickness = 2,5 to 4 mm (valleys : 1,5 mm +/- 0.5mm)</p> <p>total width = 12 to 100 mm (compressed)</p> <p>total thickness = 100 to 110 mm</p> | EMSEAL Joint Systems Ltd |
| Sealant (between the joints) | Fire Barrier Sealant CP 25WB+ | 2-3mm thickness | 3M™ |
| Silicone sealant (between joint and building element) | PECORA 890 NST | 4-6mm diameter | PECORA Corporation |
| | Dow Corning® 790 | 4-6mm diameter | Dow Corning |
| | Dow Corning® 748 | 4-6mm diameter | Dow Corning |
| | PECORA DynaFlex | 4-6mm diameter | PECORA Corporation |

Table 1.1 : Component list

The seal is not sold as a kit, only Emshield DFR or WFR are covered by the ETA. It is the responsibility of the installer to obtain the other components for incorporation into the assembled system.

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Working life

The provisions made in this European Technical Assessment are based on an assumed working life of Emshield WFR and Emshield DFR firestop joints of 10 years, provided that the conditions laid down in the manufacturers datasheet and instructions for the packaging / transport / storage / installation / use are met.

The indications given on the working life cannot be interpreted as a guarantee given by the producer, 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.

The real working life might be, in normal use conditions, considerably longer without major degradation affecting the Basic Requirements for construction works.

Dangerous substances

This product does not contain asbestos, wax, halogens or tar constituents. The volatile organic compound of this product is less than 50gram/ liter.

In the absence of European harmonized test methods, verification and declaration on release/content has to be done taken into account national provisions in the place of use.

10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9.

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 3.

Signed for and on behalf of the manufacturer by:

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