

## Effisus ProFlex FR

### 1. Summary

Effisus ProFlex FR is a multi-layered weatherproofing membrane composed by a robust double side fire retardant polymer and fire-retardant ultra-elastic reinforced core.

This high-tech composite membrane was developed by an innovative bulk-forming process to efficiently control water, air, water vapour and moisture while accommodating differential movements along with fire performance.

Effisus ProFlex FR is watertight and airtight membrane that combines an exceptional 200% elongation capacity with a fire performance of Class B-s3,d0 according to BS EN 13501-1. It was developed for sealing façade interfaces and construction joints on typical curtain walls, on rainscreen/brick ventilated facades, precast, masonry and many other applications.

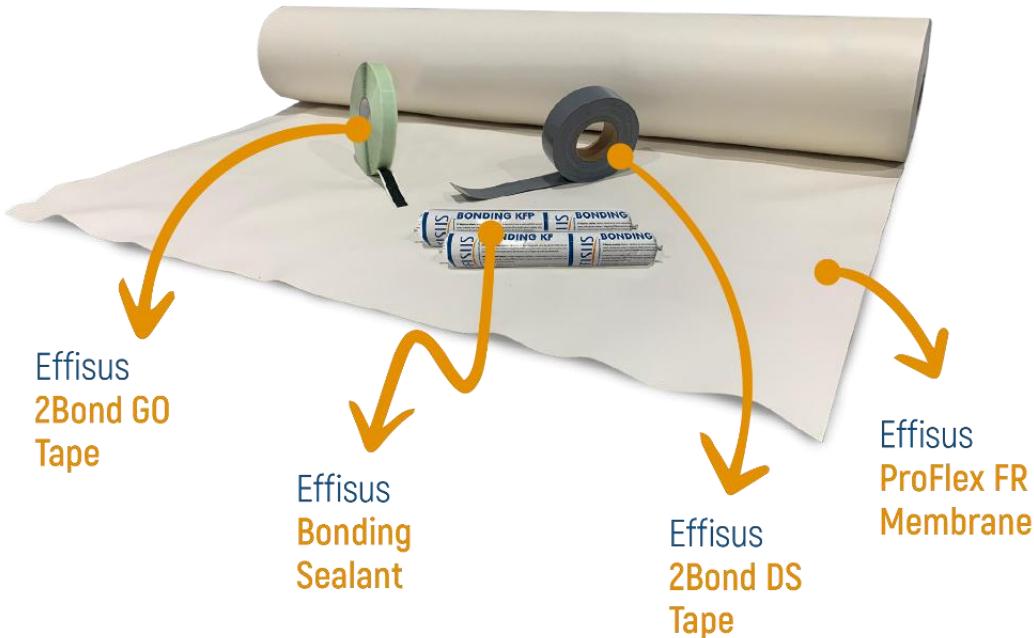


Figure 1 - Effisus ProFlex FR System

### 2. Scope of Usage

In General: Interfaces and construction joints.

### 3. Presentation and Product Details

#### 3.1 Effisus ProFlex FR Membrane

Standard roll width: Bespoke (mm)

Roll length: 20 m

Thickness: 1mm

Colour: White

Characteristics: see the table below.

| Technical Data   | Standard                                    | Result  |
|--|---|---|
| Thickness  | BS EN 1849-2                                | 1.00mm  |
| Length   | -   | 20 m  |
| Width  | -   | Bespoke (mm)  |
| Mass per unit area   | BS EN 1849-2                                | 1105 g/m2   |
| Sd-value (m)   | BS EN 1931                                  | 56 ± 5 m  |
| Resistance to air passage  | EN 12114                                    | 0m3/(m2xhx50 Pa)  |
| Reaction to Fire - System  | EN 13501-1                                  | B-s3,d0 <sup>a)</sup>   |
| Reaction to Fire - Membrane  | EN 13501-1                                  | B-s3,d0 <sup>a)</sup>   |
| Resistance to water penetration  | EN 1928                                     | W1, pass  |
| Tensile Strength MD/CD   | EN 12311-1                                  | 1160 / 630 (N/50mm)   |
| Elongation MD/CD   | EN 12311-1                                  | 203% / 79%  |
| Tear Resistance MD/CD  | BS EN 12310-1                               | 315.1 N / 363.1 N   |
| Dimensional Stability  | BS EN 1107-2                                | < 0.64%   |
| Artificial ageing by long term exposure  | BS EN 1296/ BS EN 1931                      | Passed  |
| Artificial ageing by long term exposure to the combination of UV radiation and high temperature and heat, according to appendix C. | Tensile strength<br>BS EN 12311-1           | MD: 1165 (N/50mm) <sup>b)</sup><br>CD: 606 (N/50mm) <sup>b)</sup> |
|  | Elongation<br>BS EN 12311-1                 | MD: 74%<br>CD: 189%   |
|  | Resistance to water passage<br>BS EN 1928 B | W1, pass <sup>c)</sup>  |

a) The fire classification was obtained with Effisus accessories tested as a system.

b) In accordance with Annex C of BS EN 13859-2 (BS EN 12311-1)

c) In accordance with Annex C of BS EN 13859-2 (BS EN 1928 / BS EN 13111)

## 4. Accessories

The Effisus ProFlex FR membrane system includes accessories that are designed specifically to simplify the application of the membrane.

Connections with other non-proprietary membranes (Vapor permeable membranes, air and vapor control layers, etc.) should be adequately designed to ensure optimum compatibility. All other materials in contact with Effisus products should be submitted for further technical evaluation and tested for compatibility.

### 4.1 Adhesive Tapes

Adhesive tapes for moisture proof sealing of Effisus ProFlex FR membrane perimeter and perforations sealing. These tapes are suitable for bonding the membrane to smooth, non-porous and porous substrates.

#### 4.1.1 Effisus 2Bond GO Tape

Effisus 2Bond GO tape is the efficient and sustainable solution for sealing multiple situations, in day-to-day building or rehabilitation works. It promotes the protection of constructive materials, towards condensation and leaks, whilst also improving the energy efficiency of systems and solutions. It adheres perfectly to vapour barriers, weatherproofing membranes, and most remaining construction materials.



Compatible substrates

Glass, metals, wood, rigid PVC, ceramic, plastics, aluminium-coated insulation boards, EPDM Membranes, breathable membranes and vapour barriers.

Roll width: 20mm or 40mm.

Roll length: 30m.

Colour: Black.

#### **4.1.2 Effisus 2Bond DS Tape (sealing membrane edges)**

Effisus 2Bond DS is the most efficient solution for sealing two surfaces of the same or different materials, and for sealing any nail/screw penetrations. Effisus 2Bond DS tape is a double-sided adhesive tape, devised using advanced technology with active adhesive sealants.



Designed using a chemical arrangement of thermoplastics and non-curing rubber (non-butyl) with an incorporated primer, Effisus 2Bond DS is thoroughly elastic and flexible within a temperature range of 93°C to -57°C.

With a highly advanced micro sealant and removable siliconized release liner on each side, Effisus 2Bond DS tape is designed to seal Effisus ProFlex FR onto building perimeters and connections to smooth, non-porous or porous substrates, creating a tight, permanent and waterproof membrane. It is quick and easy to apply on smooth surfaces using Effisus Cleaner LV or any non-residue cleaner.

Compatible substrates

2Bond DS is fit for use on a wide range of construction substrates, both porous and non-porous, including concrete, cement particle sheathing boards, glass fibre and gypsum, masonry, brick, ceramic, metal, galvanized steel, coated and non-coated aluminium, polycarbonate, glass, natural stone, gypsum and OSB boards, wood, fiberglass, EPDM, SBS, modified APP, PP, PE and polystyrene etc. Connections with other non-proprietary membranes (Breather, EPDM, etc.) should be adequately designed to ensure optimum compatibility. All other materials in contact with Effisus products should be submitted for further technical evaluation and tested for compatibility.

Roll width: 25mm or 50 mm.

Roll length: 15.25m.

Colour: Grey.

### **4.2 Effisus Bonding Adhesive Sealants**

#### **4.2.1 Effisus Bonding KF Adhesive**

Effisus Bonding KF adhesive is suitable for all conventional building surfaces, such as concrete or metal. With exceptional bonding strength it is especially suitable for rough, uneven surfaces. With the Effisus Bonding KF adhesive, installation can be carried out at temperatures down to -10°C and up to +35°C, even on moist (absorbent) surfaces in combination with Effisus Coat NP Primer.



It resists to temperatures from -40°C to +90°C, remaining permanently flexible. With waterproofing properties, it does not require additional sealants.

Compatible substrates

All conventional building surfaces as well as PVC, aluminium, wooden windows and for adhering sealing sheets together.

Package: 600ml sausage.

**4.2.2 Effisus Bonding KFP Adhesive**

Effisus Bonding KFP adhesive brings together on a single adhesive exceptional property of adhesiveness, waterproofing and UV resistance, allowing total freedom of work. With exceptional bonding strength it is especially suitable for rough, uneven surfaces. Waterproofing and UV resistant, with the Effisus Bonding KFP adhesive no additional sealing materials are required.



With the Effisus Bonding KFP adhesive, sealing can be carried out at temperatures down to – 10°C and on moist (absorbent) building surfaces using Effisus Coat NP Primer.

Compatible substrates: Interface membranes, EPDM and butyl to concrete, masonry, wood, glass, aluminium, steel and bitumen or for lap joint connections.

Compatible substrates

Interface membranes, EPDM and butyl to concrete, masonry, wood, glass, aluminium, steel and bitumen or for lap joint connections.

Package: 600ml sausage.

**4.3 Accessories: Others****4.3.1 Effisus Coat NP Prime**

Primer to prepare surfaces before bonding Effisus ProFlex FR membrane.

The primer should be used for surface treatment before applying Effisus 2Bond DS tape:

- when applying on moist porous substrates;
- within a temperature range of -10 °C to 5 °C.

Package: 4.5 Kg

**4.3.2 Effisus Cleaner LV**

Effisus Cleaner LV is a ready-to-use solvent-based cleaning liquid and is used for cleaning and degreasing surfaces. It is compatible with all the products that constitute the Effisus waterproofing system.

**5. Production, marketing and technical solution**

Effisus supplies Effisus ProFlex FR Membrane and accessories.

Testing of all our manufactured goods is carried out and continuously recorded under industry-standard laboratory conditions, with the additional guarantee of periodic external inspections.

## 6. Installation Instructions

### 6.1 General Guidelines

It is the end user's responsibility to ensure the quality of installation by following the installation instructions in this document and by periodically checking the installed materials.

Effisus is always available, upon request, to train working staff.

#### 6.1.1 Storage

Effisus ProFlex FR Membrane and system accessories should be stored on a hard, clean and dedicated stand, in a place that can protect them from extreme weather conditions or the risk of puncture. Materials should be kept within a temperature range of 5°C - 20°C.

Rolls should be stored flat on their sides, on a smooth, clean, dry surface, under cover, protected from sunlight and extreme weather conditions or the risk of puncture.

#### 6.1.2 Installation Conditions

- Effisus ProFlex FR membrane should be carefully transported and applied, to avoid sharp substrate edges, dust and debris contamination and the risk of tearing or loss of integrity.
- Bonding should be carried out on clean, dry, grease and dust-free supports.
- Surface preparation: Unstable or crumbling surfaces either need to be cleared of any loose particles or sanded and stabilized using Effisus Cleaner LV. It is always recommended before applying any Effisus ProFlex FR system accessories that surfaces must be thoroughly cleaned using Effisus Clean LV. The substrate should also be degreased completely. A primer should be used for surface preparation and treatment of porous surfaces, or application within a temperature range of 5°C - 10°C to improve surface adhesion of the Effisus membrane system. Allow the primer to dry to the touch (no material transfer). Dry time will vary depending on ambient temperature and humidity (typically less than 20 minutes).
- Effisus ProFlex FR membrane should always be applied to a high density, rigid substrate or mineral wool (or similar), minimizing insufficient cohesion to the substrate.
- Effisus ProFlex FR membrane should not be tensioned.
- Effisus ProFlex FR membrane should be applied using the accessories recommended in this document.
- In case of precipitation (rain, snow, dense fog or any risk of condensation), application of the adhesive/sealant must be suspended.
- After installation, the Effisus ProFlex FR membrane should not have any loose ends exposed to wind or work done by other contractors, and should be protected with protective boards, insulation or metallic sheeting.
- All other materials in contact with Effisus products should be submitted for further technical evaluation and tested for compatibility.

### 6.2 Effisus ProFlex FR Membrane Fixing

#### 6.2.1 Fixing membrane to the substrate

##### 6.2.1.1 Effisus Bonding KF and KFP Adhesives

Effisus ProFlex FR membrane should be fixed using an 8mm-diameter bead of Effisus Bonding KF or KFP adhesives, when pressure is applied, forms an adhesive surface approximately 4cm wide. The quantity of beads depends on the membrane width.

| Effisus Bonding KF or KFP Adhesives |                          |
|-------------------------------------|--------------------------|
| Membrane width                      | Number of adhesive beads |
| 100 – 250 mm                        | 1                        |
| 250 – 500 mm                        | 1 – 2                    |
| 500 – 1300 mm                       | 2 – 3                    |

\* Beads with 8 mm diameter to provide a bonding surface, after crushing, of  $\pm$  40 mm

After applying Effisus Bonding KF or KFP adhesive to the support, directly apply Effisus ProFlex FR membrane to the surface and apply pressure over the whole bonding area with a steel roll. It is perfectly feasible to adjust the membrane's position.

Bonding strength will progressively increase during the following up to 15 days depending on temperature and humidity levels.

For more information about this accessory and its compatibility with other materials see 4.1.

Check 6.2.3 for perimeter sealing of the membrane.

### 6.2.1.2 Effisus 2Bond GO Tape (Alternative)

Effisus ProFlex FR membrane can be fixed to smooth surfaces (for instance: aluminium, steel, sheathing board) using Effisus 2Bond GO tape. The quantity and width of bands depend on the membrane width:

- 150 mm membrane width: use 20 mm of Effisus 2Bond GO tape
- 200 to 400 mm membrane width: use 40 mm of Effisus 2Bond GO tape
- >400mm membrane width: details should be submitted for further technical evaluation and recommendations.

Over wet surfaces, the use of a Primer Effisus Coat NP will be required before bonding.

For more information about this accessory and its compatibility with other materials see 4.1.

Check 6.2.3 for perimeter sealing of the membrane.

### 6.2.1.3 Effisus 2Bond DS Tape (Alternative)

Effisus ProFlex FR membrane can be fixed to smooth or porous using Effisus 2Bond DS tape. The quantity and width of bands depend on the membrane width:

- 200 mm membrane width: use 25 mm of Effisus 2Bond DS tape
- 250 to 400 mm membrane width: use 50 mm of Effisus 2Bond DS tape
- > 400mm membrane width: details should be submitted for further technical evaluation and recommendations.

Over wet surfaces, the use of a Primer Effisus Coat NP will be required before bonding.

For more information about this accessory and its compatibility with other materials see 4.1.

Check 6.2.3 for perimeter sealing of the membrane.

### 6.2.2 Overlapping Joints

Upper layers should always overlap lower layers to facilitate the runoff of rainwater and to avoid water accumulation at the overlap joints.

- Horizontal joints should overlap by 100mm minimum.
- Vertical joints should overlap by 150mm minimum and be staggered or offset wherever possible (see Figure 2).

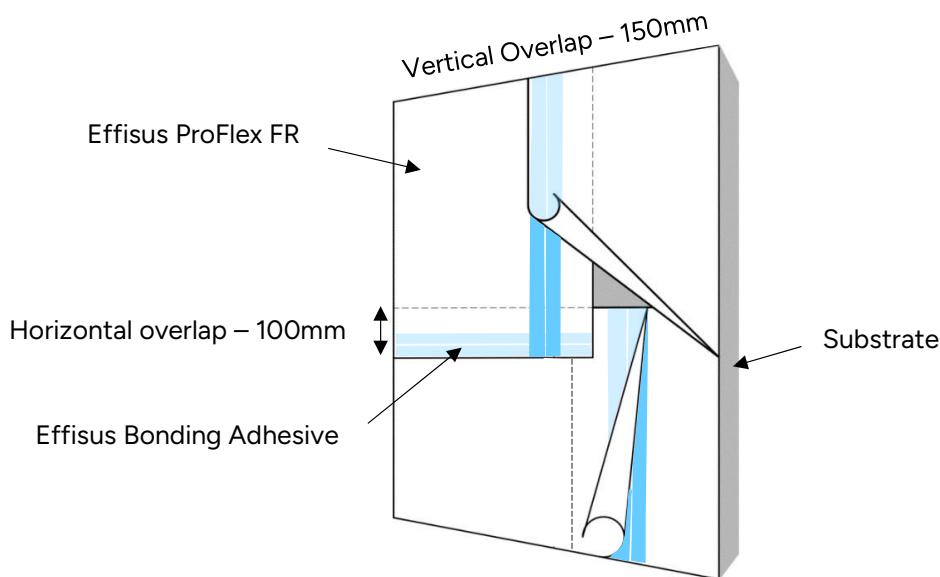


Figure 2 - Effisus ProFlex FR Membrane – Overlapping Joints.

Check 6.2.3 for perimeter sealing of the membrane.

### 6.2.3 Perimeter sealing

#### 6.2.3.1 Effisus 2Bond DS Tape

Finish the application of the membrane system by applying an 8mm-diameter bead of Effisus Bonding KF or KFP adhesive to the entire perimeter of the Effisus ProFlex FR membrane.

For more information about this accessory and its compatibility with other materials see 4.1.

### 6.2.4 Perforations sealing

#### 6.2.4.1 Nail/Screw perforations

All nail/screw perforations <25mm in diameter should be sealed with a 50mm x 50mm patch of Effisus 2Bond DS Tape, a double-sided adhesive/sealant tape (thickness > 1,50mm). Irregularly shaped facade perforations over 25mm in diameter should be studied in detail on a case-by-case basis by the Effisus Technical Department.

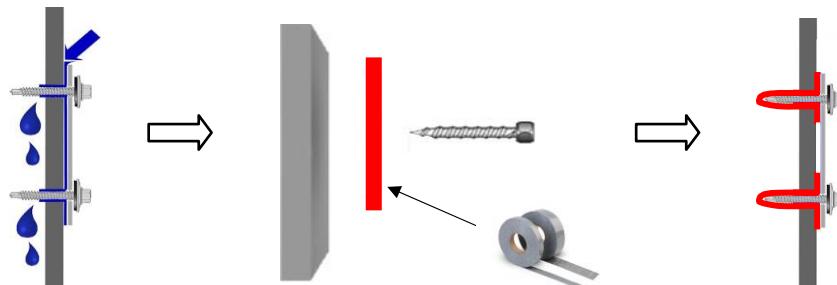


Figure 3 - Nails/screw perforations membrane sealing.

## 7. Repairs

In case of puncture to the membrane, sealing of the damaged area is essential, using a patch of Effisus ProFlex FR membrane with a compatible sealant accessory. This patch should be at least a distance of 100mm in every direction from the location of the damaged Effisus ProFlex FR membrane. Effisus Bonding KF or KFP adhesive should be applied at a distance of  $\approx$  50mm to 20mm from the patch edges.

The repairing patch of Effisus ProFlex FR should be adhered/sealed to the membrane using 2 beads 8mm- diameter with Effisus Bonding KF or KFP adhesive, see Figure 4.

1 – Cut a Patch of Effisus ProFlex FR at least 100mm larger than the tear to the Effisus ProFlex FR (in every direction).

2 – Apply 2 beads 8mm-diameter of Effisus Bonding KF or KFP to the Effisus ProFlex FR  $\approx$ 50mm and 20mm from the membrane edge.

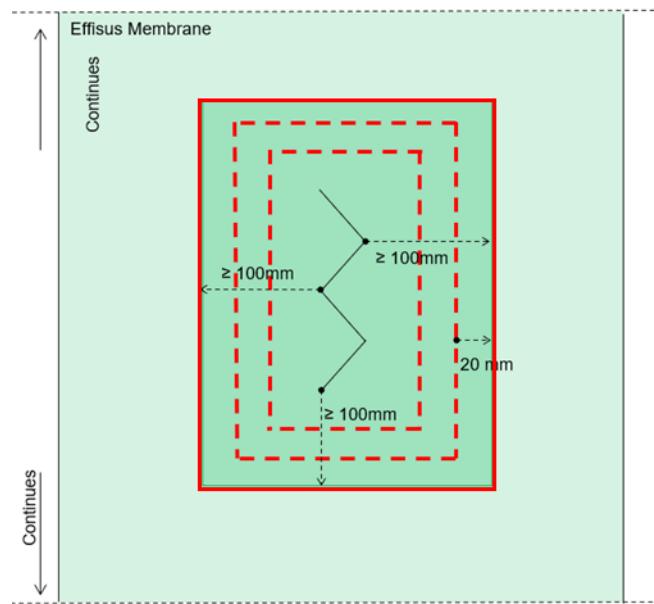


Figure 4 –Effisus ProFlex FR Membrane - Repairs

Legend:

- Tear on Effisus ProFlex FR Membrane
- Effisus ProFlex FR Membrane
- Patch Repair - Effisus ProFlex FR Membrane
- Effisus Bonding KF or KFP Adhesives
- Effisus Bonding KF or KFP Adhesives bead applied around the edges of the membrane

## 8. Compatibility

Effisus ProFlex FR Membrane are compatible with all traditional building materials. However, if in doubt, carry out a compatibility test and consult Effisus Technical Department.

Whenever Effisus ProFlex FR Membrane are to be used in vigorous work environments (workshops, laboratories, etc.) Effisus Technical Department must be consulted.

## 9. Accessories Consumption

| Accessories Consumption                |        |                  |  |  |
|--|--------|------------------|--|--|
| Product                                | Colour | Delivery         | Consumption  | Storage  |
| Effisus Coat NP Primer                 | Black  | 4,5kg Can        | At 5cm<br>Application width:<br>10-15g/m, depending<br>on substrate. | Cool, dry, frost-proof,<br>protect from direct<br>sunlight. Keep container<br>tightly closed.                |
| Effisus Cleaner LV                     | Clear  | 1l Can           | 35m <sup>2</sup> /litre  | Cool, dry, frost-proof,<br>protect from direct<br>sunlight. Keep container<br>tightly closed.                |
| Effisus Bonding KF or<br>KFP Adhesives | Black  | 600ml<br>Sausage | ---  | In original containers,<br>within a temperature<br>range of 15°C and 35°C<br>for not more than 12<br>months. |

## 10. Test Results and Certification

Technical details are presented in this document. Effisus ProFlex FR obtained class B-s3,d0 rating as a System and class B-s3,d0 rating as a Membrane to Test Standard BS EN13501.

For further information contact Effisus.