

Effisus Breather FR-B

1. Summary

Effisus Breather FR-B Membrane is a fire rated class B waterproofing breathable membrane, made of nonwoven polyester with a waterproof special coating.

Effisus Breather FR-B Membrane has exceptional UV resistance and is designed for open or closed rainscreen cladding systems, cavity and masonry, leaf weatherboarding panels, tile/slate and timber frame cladding.

Suitable for façades with open joints up to 50mm and maximum up to 50% of façade area.

Protects the building against driving rain, moisture improving façade resistance to fire and preventing future corrosion and insulation deterioration.



Figure 1 - Effisus Breather FR-B System.

2. Scope of Usage

In General: Wall lining membrane.

3. Presentation and Product Details

3.1 Effisus Breather FR-B Membrane

Standard roll width: 1.50m

Roll length: 50m

Thickness: 0.6mm

Color: Black

Characteristics: see Table below.

Technical Data	Standard	Result
Thickness	-	0,6 mm
Length	-	50 m
Width	-	1,50 m
Reaction to Fire - Membrane	EN 13501-1	B-s1,d0
Reaction to Fire - System	EN 13501-1 ^{a)}	B-s2,d0
Resistance to water penetration	EN 1928	W1
Sd-value (m)	EN ISO 12572	≈ 0,02
Water vapour transmission (K g/m ² /s/Pa)	EN ISO 12572	≈ 6,5x10 ⁻⁹
Tensile Strength MD/CD (N/50mm)	EN 12311-1	370/270
Tear resistance MD/CD (N)	EN 12310-1	150/150
Elongation at Break MD/CD (%)	EN 12311-1	20 – 50%
Dimensional stability (%)	EN 1107-2	< 0,5%
Flexibility at low temperature (°C)	EN 1109	25°C
Service temperature range (°C)	-	-40°C to +80°C
Artificial ageing by long term exposure to the combination of UV radiation and elevated temperature and heat	Tensile Strength ^{b)} (N/50mm)	290/230
	Resistance to water penetration ^{c)}	W1
Vapour permeance (PROC A/PROC B) (Perms)	ASTM E96-05	204/308
Water vapour transmission (PROC A/PROC B)(g/m-9/24H) ^{d)}	ASTM E96-05	1415/2274
Water penetration resistance (cm) ^{d)}	CAN/CGSB-4.2 #26.3-956	103,8
Water impact penetration resistance ^{d)}	AATC 45-2000	No water passing
Reaction to fire (flame spread/smoke developed) ^{d)}	ASTM E84-09	Class A

a) The fire classification was obtained with Effisus accessories (double side adhesive tapes) tested as a system.

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

c) In accordance with Annex C of EN 13859-2 (EN 1928).

d) For more information about the american standards, please contact Effisus Technical Department

4. Accessories

The Effisus Breather FR-B System includes accessories that are designed specifically to simplify the application of the membrane.

4.1 Adhesive Tapes

Adhesive tape for a moisture proof sealing of Effisus Breather FR-B Membrane overlaps, perforations and perimeter sealing.

4.1.1 Effisus Adjoin TI Tape (membrane overlaps and perimeter sealing)

Effisus Adjoin TI Tape is a flexible multi-purpose adhesive tape for airtight bonds, indoors and outdoors, in accordance with DIN 4108, SAI 180 and ÖNorm B8110-2. It is used to form a secure and permanent seal of overlaps between foil and fleece membranes and joints between Effisus Breather FR-B membrane and smooth, non-mineral surfaces.



Effisus Adjoin TI Tape is also suitable for sealing joints between wood-based panels such as OSB or MDF subroof panels or wood-fiber softboards (e.g., Gutex). Bonds overlaps between sheets of vapour check and joints between wood-based panels (such as OSB) also seals service penetrations. Suitable for windows, doors, planed timber, corners and roof windows.

Offers high protection against piercing in corners due to its high elasticity.

With release paper.

Easy to tear by hand.

Roll width: 60mm.

Roll length: 30m.

Colour: Black.

4.1.2 Effisus 2Adjoin DF Tape (membrane positioning)

Effisus 2Adjoin DF is a double-sided, airtight, water and moisture-resistant sealing tape, suitable for fixing Effisus membranes, PE/PA/PP and aluminum foils to metal studs. It is suitable for windtight and water/moisture-proof sealing of external membranes, as well as for rain-proof taping of roof underlay. It is quick and easy to apply using the Effisus 2Adjoin DF Hand Dispenser.



Compatible substrates

Designed for fixing internal membranes to metal sections in dry construction and the fixture of external membranes to hard-based panels (OSB, plywood panels, sheathing boards, gypsum board or the like), hard plastics and window frames.

All other materials in contact with Effisus products should be submitted for further technical evaluation and compatibility.

Roll width: 25mm.

Roll length: 20m.

Colour: Colourless with a polypropylene reinforcement.

4.1.3 Effisus 2Bond DS Tape (perforations)

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, 2Bond DS Tape is designed to seal Effisus Breather FR-B perforations, creating a tight, permanent and waterproof membrane.

Roll width: 25mm.

Roll length: 15.25m.

Colour: Grey.

4.2 Paste Adhesives

Paste adhesives for moisture and air proof sealing of Effisus Breather FR-B Membranes edges.

The paste adhesives are suitable for bonding Effisus Breather FR-B Membrane to smooth, non-porous and porous substrates, being used for the perimeter sealing and fixing it to the substrate.

For this sealing/fixing, Effisus provides 3 different types of paste adhesives compatible with Effisus Breather FR-B: Effisus Bonding KF+P Adhesive, Effisus Bonding KF Adhesive and Effisus Bonding KFP Adhesive.

4.2.1 Effisus Bonding KF+P Adhesive (fixing to substrate / perimeter sealing)

Effisus Breather FR-B Membrane end laps should be sealed continually on all the membrane perimeter to the substrate (concrete, building edges, other membranes) using the Effisus Bonding KF+P Adhesive. It is a single component adhesive and sealant based on PDMS polymer, solvent-free, for bonding/sealing Effisus Breather FR-B to concrete, masonry, wood, glass, coated and non-coated aluminium, steel and bitumen.



Designed not only to perimetral seal the Effisus Breather FR-B on building perimeter and connections, but also to fix the membrane to the substrate/structure, creating a tight, permanent and waterproof system.

Effisus Bonding KF+P Adhesive has the particularity of not having any VOC's (Volatile Organic Compounds), however, Effisus Bonding KF Adhesive and Effisus Bonding KFP Adhesive are also compatible with the Effisus Breather FR-B Membrane. The selection of the most suitable adhesive depends on each project requirements.

Unstable or crumbling surfaces either need to be cleared from of any loose particles or sanded and stabilized using Effisus Cleaner LV.

Package: 600ml sausage.

4.2.2 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 $+35^{\circ}\text{C}$, even on moist (absorbent) surfaces in combination with Effisus Coat NP Primer.



It resists temperatures from -40°C to $+90^{\circ}\text{C}$, 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

4.2.3 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.

Package: 600ml sausage

4.3 Accessories: Others

4.3.1 Effisus Coat NP Primer

Primer to prepare surfaces before bonding Effisus Breather FR-B 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 Breather FR-B Membranes 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 staff.

6.1.1 Storage

Effisus Breather FR-B 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 to 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 Breather FR-B 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:
- Before applying any Effisus Breather FR-B System accessories, surfaces must be thoroughly cleaned using Effisus Cleaner 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 Breather FR-B Membrane should always be applied to a high density, rigid substrate or mineral wool (or similar), minimizing insufficient cohesion to the substrate.
- Effisus Breather FR-B Membrane should not be tensioned.
- Effisus Breather FR-B 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 Breather FR-B 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.

Note: The smooth/coated side of the membrane should face the installer, the textured side should face the substrate.

6.2 Effisus Breather FR-B Membrane Fixing



Figure 2 - Effisus Breather FR-B System.

6.2.1. Fixing membrane to the substrate

Effisus Breather FR-B Membrane should be fixed to the substrate (insulation or sheathing board) by applying an 8mm-diameter bead of Effisus Bonding KF+P paste adhesive, using a gun, with a maximum spacing between lines of 500mm/500mm. Alternatively, use Effisus 2Adjoin DF tape to position the membrane. The membrane should immediately be mechanically fixed on its edges to avoid its tears, with a maximum spacing of 2m/2m.

If the membrane is applied on the sheathing board and immediately covered by the insulation (see Figure 1), the Effisus Breather FR-B membrane does not need to be mechanically fixed.

After applying the Effisus Bonding KF+P Adhesive or Effisus 2Adjoin DF Tape on the substrate, directly apply the Effisus Breather FR-B Membrane over the surface and apply pressure over the whole bonding area using a silicone roll.

Note: Instead of Effisus Bonding KF+P Paste Adhesive, the Effisus Bonding KF and Effisus Bonding KFP adhesives can be used. The selection of the most suitable adhesive depends on each project's requirements.

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 3).

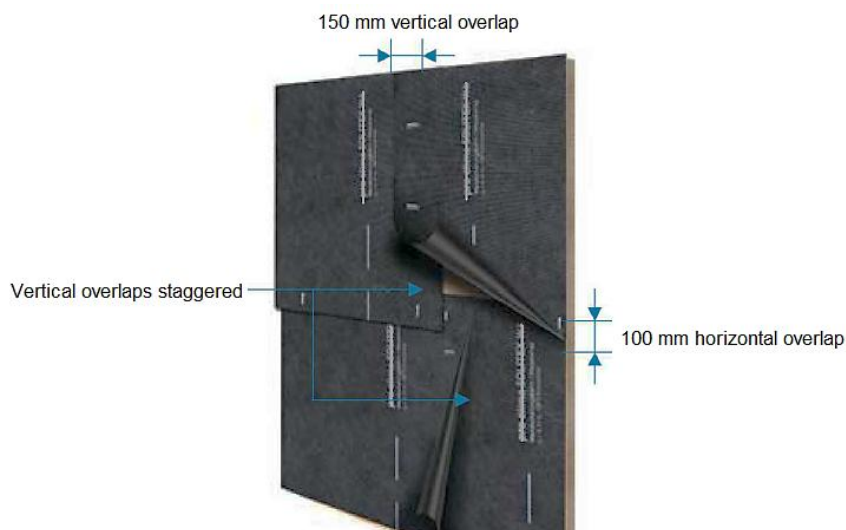


Figure 3 - Effisus Breather FR-B Membrane – Overlapping Joints.

Joints should be sealed with 1 band of Effisus Adjoin TI Tape, applied in the exterior side of the joint and covering both coated sides of the Breather FR-B layers.

6.2.3 Perimeter sealing

Effisus Breather FR-B Membrane should be sealed continuously around the membrane perimeter and in all locations interrupting the continuity of the membrane, such as window frames, doors, perforations or the like, using an 8mm-diameter bead of Effisus Bonding KF+P paste adhesive or Effisus Adjoin TI Tape.

If there is any risk of sliding or stress to the membrane, this should be mechanically fixed around the its edges.

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

6.2.4 Perforations sealing

6.2.4.1 Effisus 2Bond DS Tape

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 façade perforations over 25mm in diameter should be studied in detail on a case-by-case basis by the Effisus Technical Department.

When Effisus 2Bond DS Tape is not used on insulation perforations (e.g. insulation mushroom washers or insulation pinholes), the head/top of these elements should be fully sealed with Adjoin TI Tape.

To seal cables, pipes and other perforations, Effisus has a variety of solutions that can be used to seal them. For projects with high requirements or unusual shapes, Effisus developed customized solutions capable of accommodating the most difficult perforations in any type of project.

Note: For more information about this Effisus Solutions please contact Effisus Technical Department.

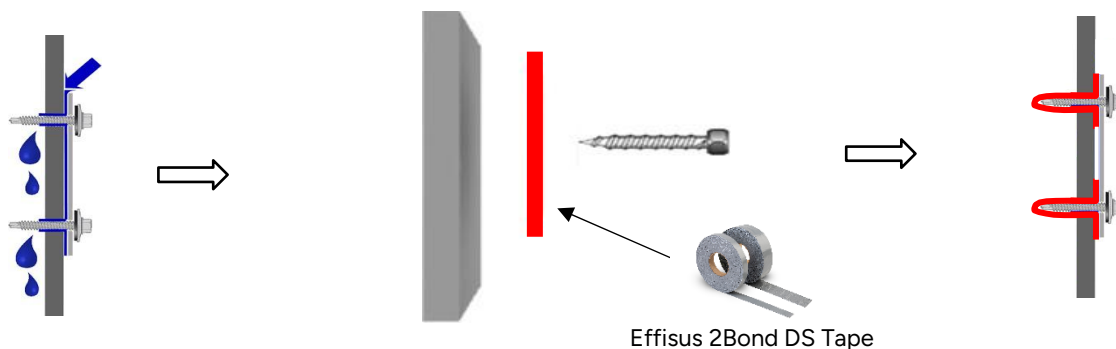


Figure 4 - Nails/screw perforations membrane sealing.

6.2.4.2 Effisus Adjoin TI Tape

To seal service penetrations and cladding fixing elements it should be used Effisus Adjoin TI tape. The application of the Effisus Adjoin TI tape should follow the recommendations below on Figure 5.

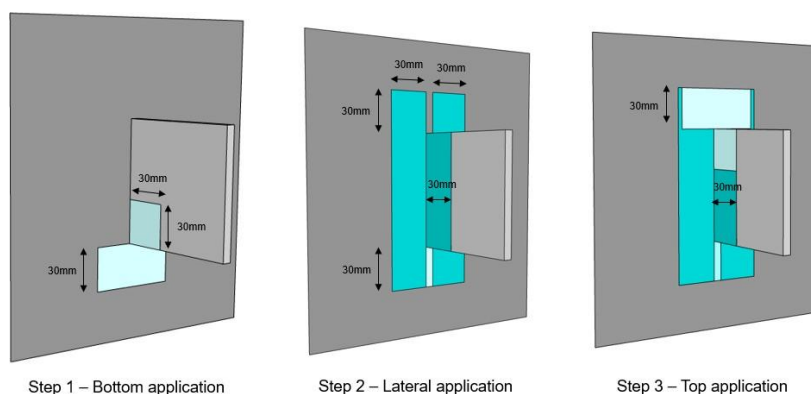


Figure 5 – Sealing service penetrations and cladding fixing perforations.

6.2.5 Bond between Effisus Breather FR-B Membrane – Effisus ProFlex FR Membrane

Bonds between an Effisus Breather FR-B Membrane and an Effisus ProFlex FR Membrane should be made using an 8mm-diameter bead of Effisus Bonding KF Adhesive or KFP Adhesive or Effisus Adjoin TI Tape.

6.2.6 Bond between Effisus Breather FR-B membrane – Effisus Ecofaçade membrane

Bonds between an Effisus Breather FR-B Membrane and an Effisus Ecofaçade (EPDM) Membrane should be made using an 8mm-diameter bead of Effisus Bonding KF+P Adhesive (or another Effisus adhesive) or Effisus Adjoin TI Tape.

7. Repairs

In case of puncture to the membrane, sealing of the damaged area is essential, using a patch of Effisus Breather FR-B Membrane with a compatible sealant accessory – See Figure 4.

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

2 – Apply a band 60 mm-wide of Effisus Adjoin TI Tape on the perimeter of the membrane patch. Alternatively, 2 beads of Effisus Bonding KF+P paste adhesive can be applied, with a distance of ≈ 25 and 50mm from the patch edge.

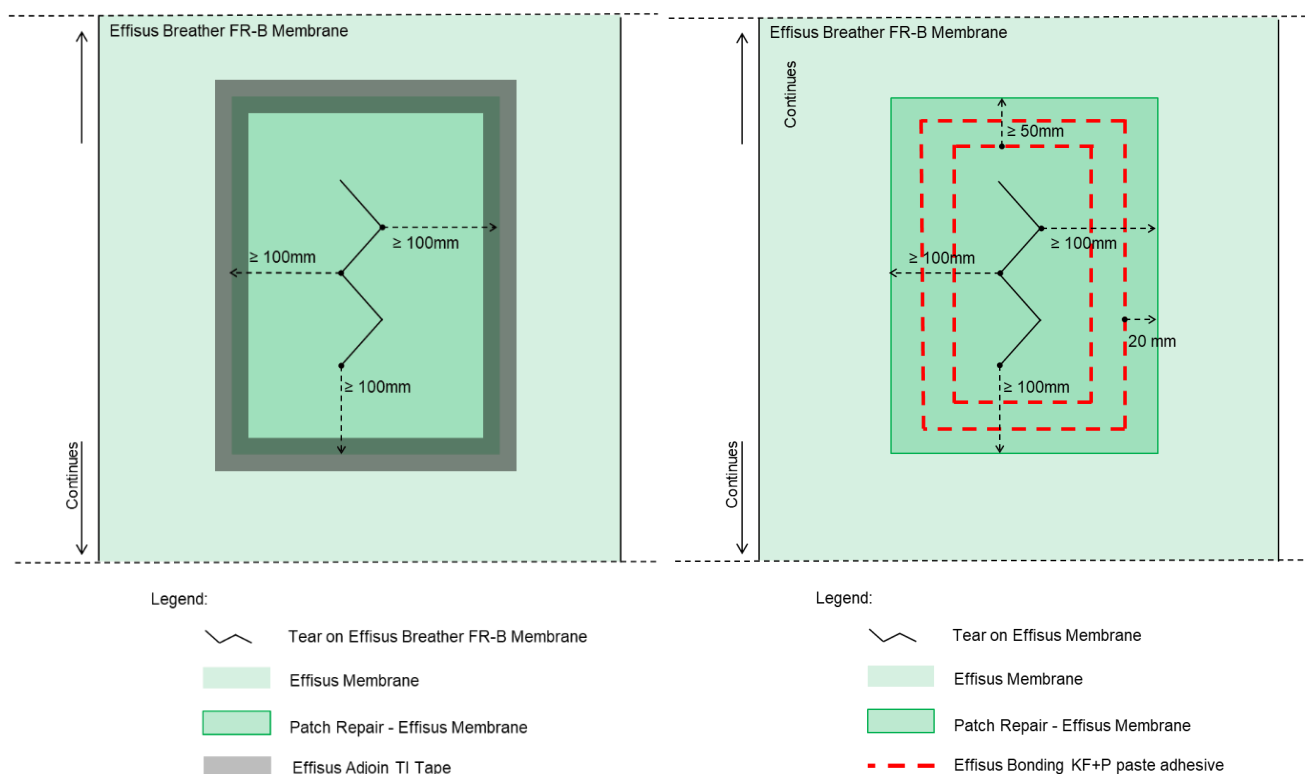


Figure 4 - Effisus Breather FR-B Membrane - Repairs (2 options).

Any repairing should be made using Effisus Breather FR-B Membranes and accessories, under approval from Effisus.

8. Compatibility

Effisus Breather FR-B Membranes are compatible with all traditional building materials. However, if in doubt, carry out a compatibility test and consult Effisus.

Whenever Effisus Breather FR-B Membranes are to be used in vigorous work environments (workshops, laboratories, etc.) Effisus must be consulted.

9. Accessories Consumption

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

10. Test Results and Certification

Technical details are presented in this document.

Effisus Breather FR-B membrane has CE certification and DoP based on EN 13859:2, Flexible sheets for waterproofing. Definitions and characteristics of underlays. Underlays for walls (EN 1928, EN 13111, EN ISO 12572, EN 12311-1, EN 12310-1, EN 1109 and artificial ageing).

Effisus Breather FR-B obtained class B-s1,d0 on Test Standard EN13501-1 and Class A (or class 1) on ASTM E84.

For further information contact Effisus.