

Effisus Vapour FR

1. Summary

Effisus Vapour FR works as an airtight vapour control layer (AVCL), protecting the building from the risk of condensation and improving its airtightness and, consequently, energy efficiency. The Effisus Vapour FR wall lining membrane is a high-quality multifunctional waterproofing and fire-resistant vapour barrier, made of a specialized fiberglass fleece.

Effisus Vapour FR Membrane can be applied to walls or ceilings to prevent heat radiation and moisture transfer. It also serves as an effective fire-retardant layer for building projects.



Figure 1 - Effisus Vapour FR System

2. Scope of Usage

In General: Wall lining membrane.

3. Presentation and Product Details

3.1 Effisus Vapour FR Membrane

Standard roll width: 1.20m

Roll length: 50 m

Thickness: 0.148mm ± 0.015mm

Colour: Black.

Characteristics: see the table below.

Technical Data	Standard	Result
Thickness	EN ISO 12572	0,230mm +- 0,020mm
Length	-	50 m
Width	-	1,50 m
Reaction to Fire - System	EN 13501-1 ^{a)}	A2-s1,d0
Reaction to Fire - Membrane	EN 13501-1	Class A1
Resistance to water penetration	EN 1928	W1, pass
Sd value	EN 1931	> 1500
Vapour resistance (MNs/g) ^{a)}	EN 1931	> 7500
Tensile Strength MD/CD (N/50mm)	EN 12311-1	>720 (max: 890) / >720 (max: 861)
Elongation at Break MD/CD (%)	EN 12311-1	>3 (max: 5) / >3 (max: 5)
Nail tear resistance MD/CD (N)	EN 12310-1	>170 (max: 176) / >130 (max: 160)

a) Vapour resistance test result based on the vapour permeability of still air in the UK: 0.2 gm/MNS.

4. Accessories

The Effisus Vapour FR system comes with a number of accessories specifically designed to facilitate the application of the membrane.

4.1 Adhesive Tapes

Adhesive tape for moisture proof sealing of Effisus Vapour FR Membrane overlap and perimeter sealing. These tapes are suitable for bonding Effisus Vapour FR Membrane to smooth, non-porous and porous substrates.

4.1.1 Effisus 2Adjoin DF Tape (fixing to structure / membrane overlaps)

Effisus 2Adjoin DF is a double-sided, airtight, water and moisture-resistant sealing tape, suitable for fixing Effisus membranes, PE/PA/PP and aluminium 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.

4.1.2 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, 2Bond DS Tape is designed to seal Effisus Vapour FR onto building perimeters and connections to porous surfaces, creating a tight, permanent and waterproof membrane. It is quick and easy to apply on smooth surfaces using Effisus Setup PR Cleaner 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 Accessories: Others

4.2.1 Effisus Bonding KF+P Adhesive (alternative for sealing Effisus Vapour FR membrane edges)

Effisus Bonding KF+P Adhesive provides an innovative solvent-free adhesive and sealant solution with exceptional waterproofing and UV resistance properties, as well as excellent stretch capacity.



With no storage or transportation restrictions, it is the ideal option for eco-friendly projects, having attained an Exemplary classification with BREEAM International and the highest class low-emission EC1 rating on the EMICODE certification system. It is also ideal for application in spaces with ventilation constraints.

Compatible substrates

Effisus Ecofacade (EPDM) and Effisus Vapour FR membrane and butyl can be used for bonding/sealing to concrete, masonry, wood, glass, aluminum, steel and bitumen or lap joints. Effisus KF and KFP are suitable alternatives. All other materials in contact with Effisus products should be submitted for further technical evaluation and tested for compatibility.

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 Coat NP Prime

Primer to prepare surfaces before bonding Effisus Vapour 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



4.2.3 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 Vapour FR 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 working staff.

6.1.1 Storage

Effisus Vapour 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.



Figure 2 - Effisus Vapour FR System

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 Vapour 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: before applying any Effisus Vapour FR 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 Vapour FR Membrane should always be applied to a high density, rigid substrate or mineral wool (or similar), minimizing insufficient cohesion to the substrate.
- Effisus Vapour FR Membrane should not be tensioned.
- Effisus Vapour 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 Vapour 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 Vapour FR Membrane Fixing

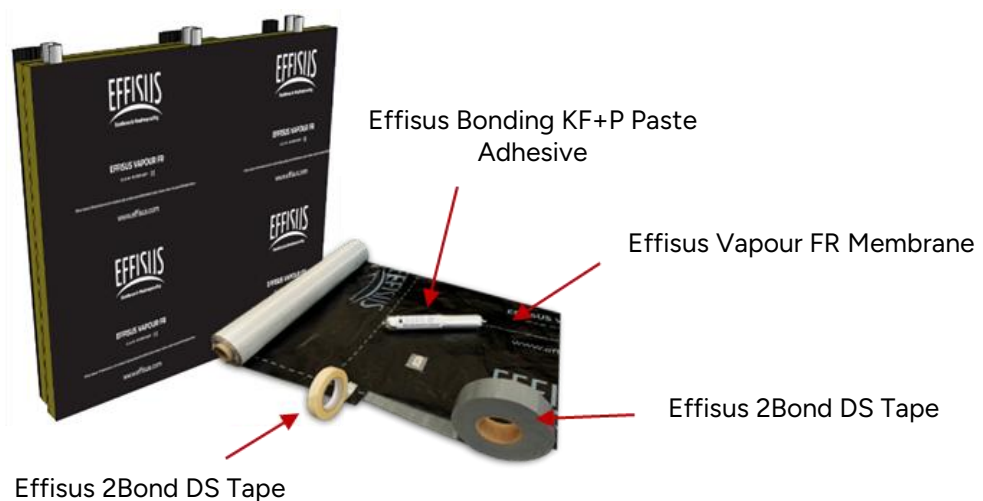


Figure 3 - Effisus Vapour FR System

6.2.1 Fixing membrane to the substrate

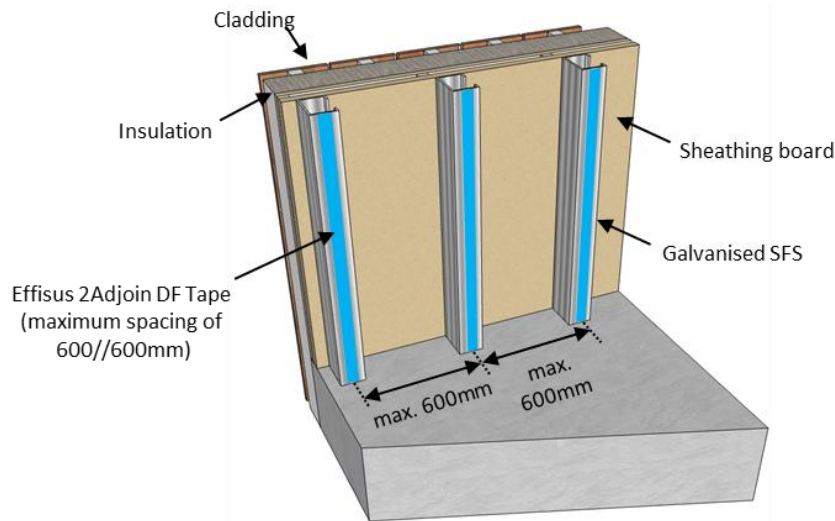


Figure 4 - Effisus Vapour FR Membrane – Fixing to the substrate

6.2.1.1 Effisus 2Adjoin DF Tape

Effisus Vapour FR membrane should be applied to the sheathing board using a 25mm-wide band of Effisus 2Adjoin DF Tape, with a maximum spacing of 600mm//600mm. The membrane should immediately be mechanically fixed on its edges.

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

6.2.1.2 Effisus 2Bond DS Tape (Alternative)

The Effisus Vapour FR membrane should be fixed using a 25mm-wide band of Effisus 2Bond DS Tape, with a maximum spacing of 600mm//600mm.

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

6.2.1.3 Effisus 2Bond DS Tape (Alternative)

The Effisus Vapour FR membrane should be fixed using a 25mm-wide band of Effisus 2Bond DS Tape, with a maximum spacing of 600mm//600mm.

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

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).

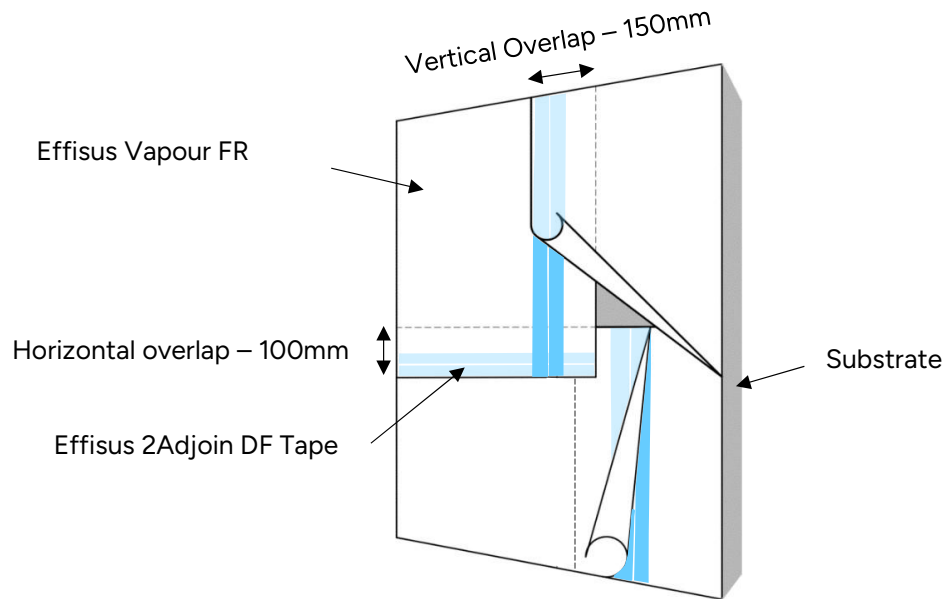


Figure 5 - Effisus Vapour FR Membrane – Overlapping Joints.

6.2.2.1 Effisus 2Adjoin DF Tape

Joints should be sealed with 2 bands 25mm-wide of Effisus 2Adjoin DF Tape.

6.2.2.2 Effisus Bonding KF+P Paste Adhesive (Alternative)

Joints should be sealed with 2 beads 8mm-diameter of Effisus Bonding KF+P paste adhesive.

6.2.2.3 Effisus 2Bond DS Tape (Alternative)

Joints should be sealed with 2 bands 25mm-wide of Effisus 2Bond DS Tape.

6.2.3 Perimeter sealing



Figure 6 - Effisus Vapour FR Membrane – Overlapping Joints.

6.2.3.2 Effisus 2Bond DS Tape

Effisus Vapour FR Membrane should be sealed continuously around the membrane perimeter and in all locations interrupting the continuity of the AVCL layer, such as window frames, doors, perforations or the like, using a 25 mm-wide band of Effisus 2Bond DS Tape.

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

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

6.2.3.2 Effisus Bonding KF+P Paste Adhesive (Alternative)

Effisus Vapour FR Membrane can, alternatively, provide a continuous seal around the membrane perimeter and in all locations interrupting the continuity of the AVCL layer, such as window frames, doors, perforations or the like, using an 8mm-diameter bead of Effisus Bonding KF+P paste adhesive. This alternative to Effisus 2Bond DS will require further review and approval from the Effisus Technical Department.

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

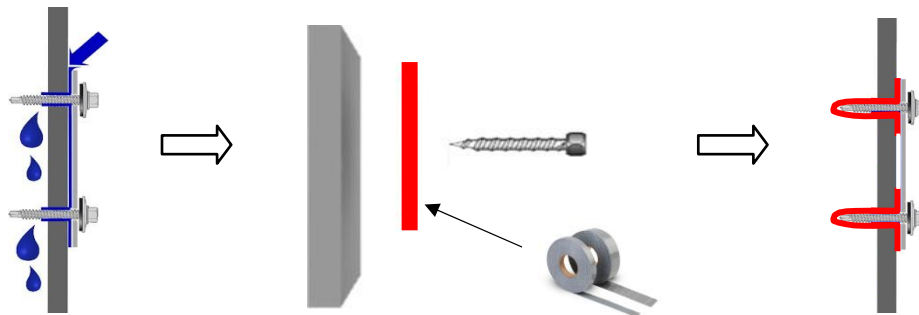


Figure 6 - Nails/screw perforations membrane sealing.

6.2.4.2 MEP service perforations or the like

All MEP (mechanical, electrical and plumbing) service perforations, or the like, should be sealed around the perforation with an 8mm-diameter bead of Effisus Bonding KF+P paste adhesive. All membrane perforations should be studied in detail on a case-by-case basis by the Effisus Technical Department.



Figure 7 – Sealing service penetrations and cladding fixing perforations.

6.2.5 Bond between Effisus Vapour FR Membrane – Effisus ProFlex FR Membrane

Bonds between an Effisus Vapour FR Membrane and an Effisus Ecofacade (EPDM) Membrane should be made using a 25 mm-wide band of Effisus 2Bond DS Tape, or an 8mm-diameter bead of Effisus Bonding KF+P Adhesive.

6.2.6 Bond between Effisus Vapour FR membrane – Effisus Vapour FR membrane

Bonds between an Effisus Vapour FR and an Effisus Breather FR Membrane should be made using 2 bands 25 mm-wide of Effisus 2Adjoin DF Tape or 2 bands 25 mm-wide of Effisus 2Bond DS Tape.

7. Repairs

In case of puncture to the membrane, sealing of the damaged area is essential, using a patch of Effisus Vapour 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 Vapour FR Membrane.

Effisus 2Bond DS Tape should be applied at a distance of $\approx$ 50mm to 25mm from the patch edges.

The repairing patch of Effisus Vapour FR should be adhered/sealed to the membrane using 2 bands 25 mm wide of Effisus 2Bond DS Tape, see Figure 5.

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

Apply 2 bands 25 mm-wide of Effisus 2Bond DS Tape to the Effisus Vapour FR membrane $\approx$ 50mm and 25mm from the membrane edge.

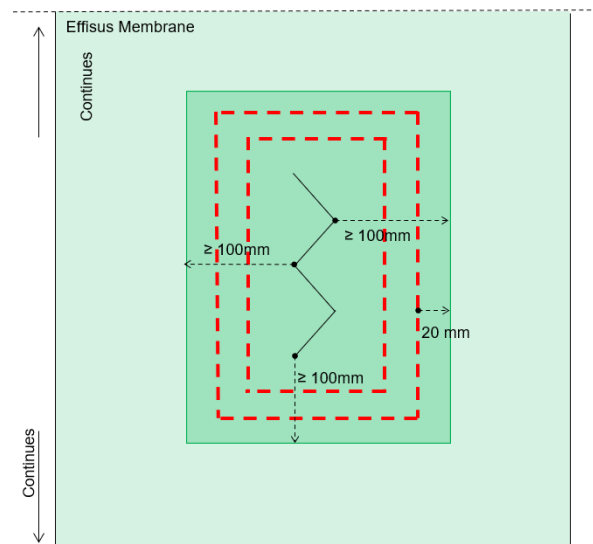
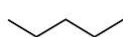


Figure 8 - Effisus Vapour FR Membrane - Repair works

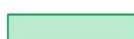
Legend:



Tear on Effisus Vapour FR Membrane



Effisus Vapour FR Membrane



Patch Repair - Effisus Vapour FR Membrane



Effisus Bonding KF+P Paste Adhesive (or 2Bond DS Tape 25mm width)

8. Compatibility

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

Whenever Effisus Vapour FR Membranes 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 Application width: 10-15g/m, depending on substrate.	Storage
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 Paste Adhesive	Black	600ml 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 Vapour FR obtained class A2-s1,d0 rating as a System and class A1 rating as a Membrane to Test Standard EN13501.

For further information contact Effisus.