

Effisus Ecofacade

1. Summary

Effisus Ecofacade is an efficient and sustainable membrane, which guarantees to the facade water, vapour and airtightness, maximizing building energy efficiency. At the same time, it protects the most vulnerable points in a building which are exposed to weather elements, eliminating pathologies associated to condensations, corrosion and mould growth.

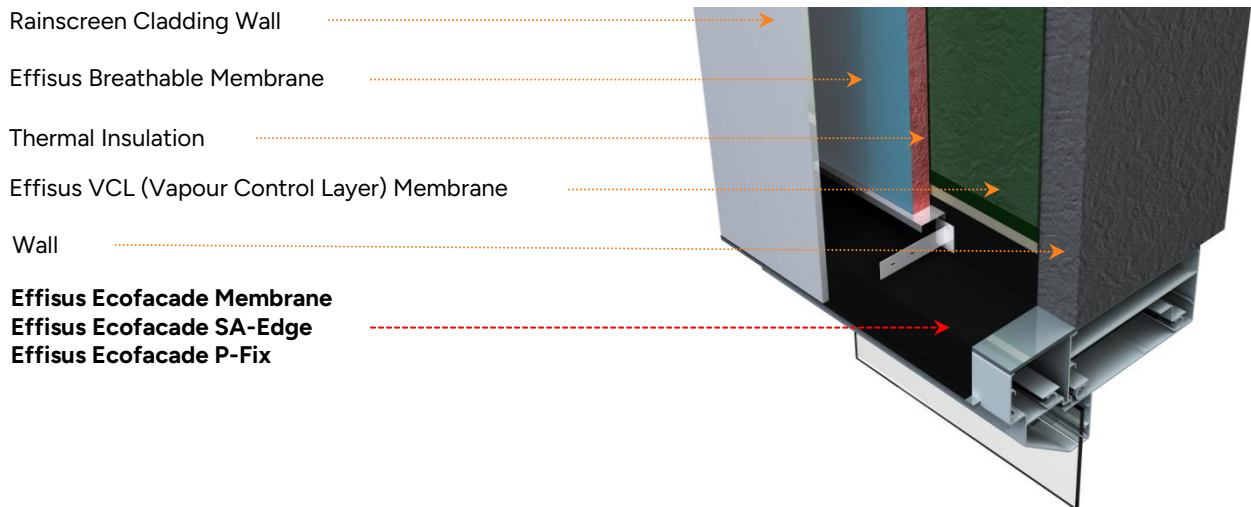


Figure 1 - Effisus Ecofacade System

2. Scope of Usage

In General: Interfaces and construction joints.

3. Presentation and Product Details

3.1 Effisus Ecofacade Membrane (Standard)

Waterproofing membrane made of vulcanized EPDM rubber.

Thickness uses:

- Second barrier vertical sealing: ≥ 0.60 mm,
- First barrier vertical sealing: ≥ 1.00 mm,
- Protected horizontal sealing: ≥ 1.00 mm,
- Unprotected horizontal sealing: ≥ 1.30 mm

Identification: label with product name, thickness, width and length.

Available widths: 50 mm multiples between 100 mm and 1300 mm.

Thicknesses: 0.60 – 0.75 – 1.00 – 1.30 and 1.50 mm.

Roll length: 20 m.

Other widths and lengths are available if required.

Characteristics: see the table below.

Technical Data	Standard	Result	Harmonised Technical Specification
Thickness	BS EN 1849-2	0,60/ 0,75/ 1,00/ 1,30/ 1,50 (mm) (-5% / +10%)	EN 13984:2013
Length	EN 1848-2	20 m	
Width	EN 1848-2	100 – 1300 ± 0,2%	
Mass per unit area	EN 1849-2	0,700/ 0,875/ 1,180/ 1,575/ 1,815 (kg/m ²)	
Watertightness	EN 1928 A	Passed	
Airtightness	EN 12114	≤ 0,1 m ³ /(m ² h)(50Pa)	
Resistance to impact	EN 12961	No specific performance	
Resistance to artificial ageing	EN 1296 EN 1931	In accordance	
Chemical resistance	EN 1847 EN 12311-2	In accordance	
Resistance to nail tearing	EN 12310-1	≥ 70/ ≥ 80/ ≥ 90/ ≥ 110/ ≥ 120 (N)	
Joint shear strength	EN 12317-2	No specific performance	
Water vapour permeability μ	EN 12311-2 B	≥ 8.5 N/mm ²	
Tensile strength	BS EN 1107-2	< 0.64%	
Tensile elongation	EN 12311-2 B	≥ 350%	
Fire reaction	EN ISO 11925-2 EN 13501-5	Class E	

3.2 Effisus Ecofacade SA-Edge Membrane

Effisus Ecofacade Membrane with 1 or 2 self-adhesive butyl-based edges.

Available widths: 50 mm multiples between 100 mm and 400 mm.

Thicknesses: 0.60 – 0.75 – 1.00 – 1.30 and 1.50 mm.

Roll length: 20 m.

The width of the self-adhesive strips is dependent of the width and thickness of the membranes:

- 150 mm with 20 mm self-adhesive edges,
- 200, 250 mm with 30 mm self-adhesive edges,
- 300, 400 mm with 40 mm self-adhesive edges.

Over smooth surfaces the self-adhesive edges do not need gluing or additional fixing.

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

3.3 Effisus Ecofacade SA-Edge XTRA Membrane

Effisus Ecofacade Membrane with 1 or 2 self-adhesive Effisus 2Bond DS Tape strips.

The membrane should be mechanically fixed on membrane edges.

Main Features: Self-adhesive bands for porous surfaces (concrete, masonry, etc.) and non-porous surfaces (aluminium, galvanized sheet, etc.)

It should be used the Effisus Primer Coat NP for surface preparation.

Available widths: 50mm multiples between 100mm and 400mm.

3.4 Effisus Ecofacade P-Fix Membrane

Effisus Ecofacade Membrane with 1 or 2 fitting gasket profiles hot-vulcanized compatible with each groove of Aluminium or PVC profiles.

Available widths: 50 mm multiples between 100 mm and 600 mm.

Thicknesses: 0.75 – 1.00 – 1.30 and 1.50 mm.

Roll length: 20 m.

The fitting gasket profile adapted to the Aluminium or PVC groove does not require gluing or additional fixing.

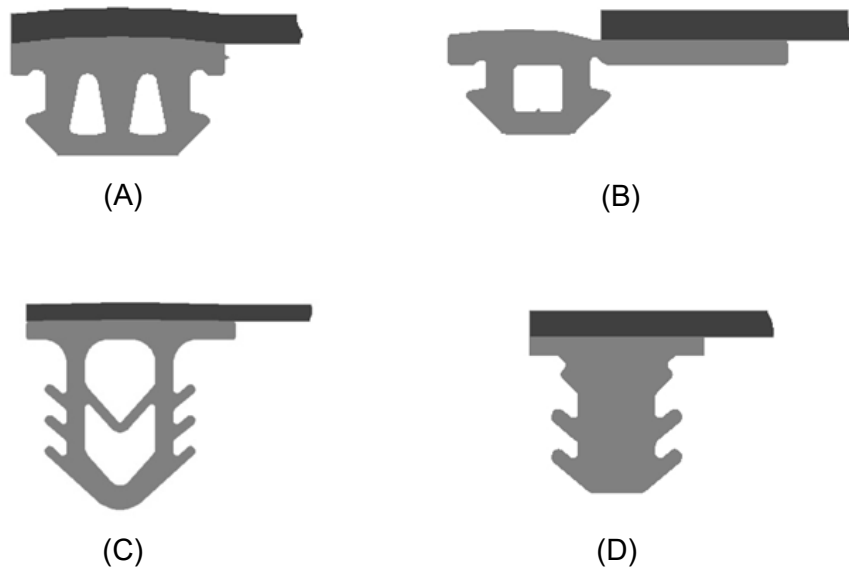


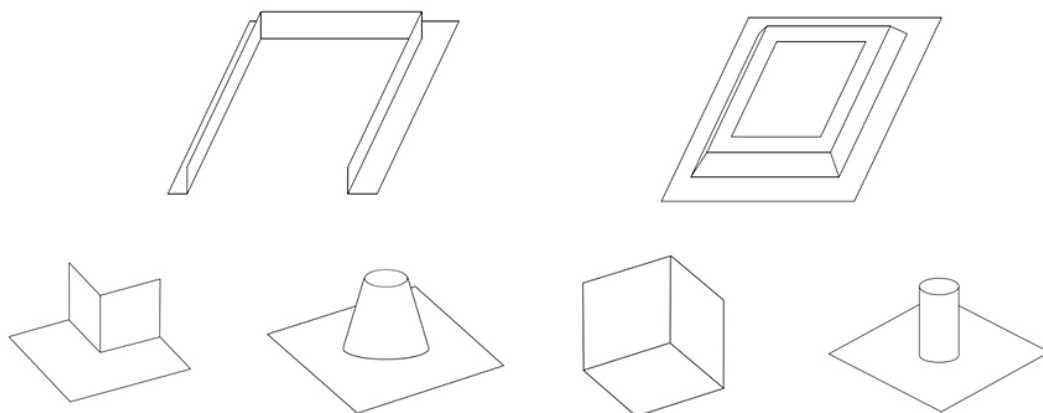
Fig. 2A, 2B, 2C, 2D - Fitting profile examples

3.5 Effisus Ecofacade Prefabricated Pieces

The prefabricated pieces based on Effisus Ecofacade Membrane allow a simple and easy weatherproofing of all the critical points, such as:

- Superior corners
- Overlength connections,
- Exterior and interior corners, water outlets, etc. – Fully customised elements.

These elements allow a preliminary installation independently of the weather conditions. The prefabricated pieces can be fixed mechanically, by fitting or bonded to the frame profiles.



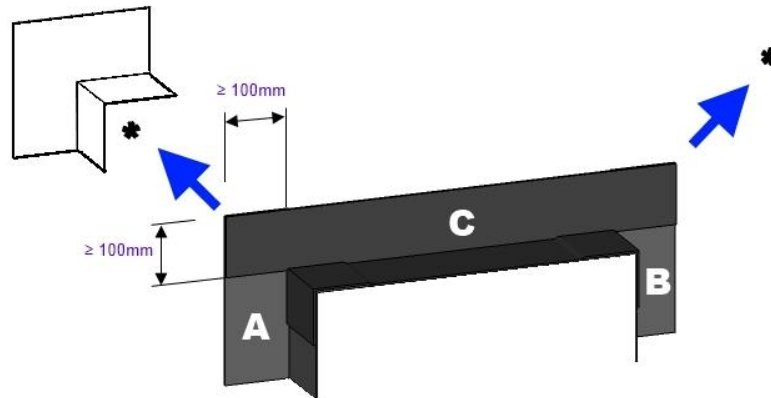


Fig. 3 – Effisus Ecofacade Prefabricated Pieces.

4. Accessories

The Effisus Ecofacade Systems 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 Ecofacade 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

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 Ecofacade 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.

4.2.3 Effisus Bonding KF+P Adhesive

Effisus Bonding KF+P is an innovative solvent-free adhesive and sealant with exceptional sealing properties, UV resistance and elongation capacity. With no storage and/or transport restrictions, it is the ideal choice for sustainable projects. Effisus Bonding KF+P adhesive meets all LEED and BREEAM certification requirements.



Compatible substrates

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

Package: 600ml sausage.

4.3 Accessories: Others

4.3.1 Effisus Coat NP Prime

Primer to prepare surfaces before bonding Effisus Ecofacade membrane. The primer should be used for surface treatment before applying Effisus Bonding Adhesives or Tapes, in accordance with the table below:



Using Effisus Coat NP Primer			
	Effisus Bonding KF/KFP/KF+P Adhesive	Effisus Ecofacade SA-Edge Membrane	Effisus Ecofacade SA- Edge XTRA Membrane
Porous surfaces		x	
Highly porous surfaces		x	
Moisture surfaces	x	x	x
Temperature below 5°C	x	x	x

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. Additional mechanical fixing

If properly used, no additional fixing is required when applying the above-mentioned adhesives, however it is advisable in the following cases:

- If the bonding width is smaller than the recommended minimum or if any thermal action is predictable to compromise the bonding of the Effisus Ecofacade Membrane.
- If the facade details are of difficult access, it should be anticipated the use of mechanical fixing on top of the membrane.
- If there are any tension on the self-adhesive bands.

The mechanical fixing should be performed with aluminium termination bars fixed to the support with a 250mm maximum spacing between fixing points.

6. Production, marketing and technical solution

Effisus supplies Effisus Ecofacade membrane and accessories.

The different components are dosed, blended and vulcanization is performed.

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.

7. Installation Instructions

7.1 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.

7.1.1 Storage

Effisus Ecofacade 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.

7.1.2 Installation Conditions

- Effisus Ecofacade 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 Ecofacade 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 Ecofacade membrane should always be applied to a high density, rigid substrate or mineral wool (or similar), minimizing insufficient cohesion to the substrate.
- Effisus Ecofacade membrane should not be tensioned.
- Effisus Ecofacade 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 Ecofacade 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.

7.2 Effisus Ecofacade Membrane Fixing

7.2.1 Fixing membrane to the substrate

7.2.1.1 Effisus Bonding KF, KFP and KF+P Adhesives

The Effisus Bonding KF, KFP and KF+P Adhesives are pastes/gluing to be applied with a gun. The number of adhesive beads to lay down depends on the width and thickness of the Effisus Ecofacade Membrane.

Effisus Bonding KF, KFP and KF+P Adhesives			
Membrane thickness: 0.60/0.75/1.00mm		Membrane thickness: 1.30/1.50mm	
Membrane width	Number of beads	Membrane width	Number of beads
100 – 250 mm	1	100 – 200 mm	1
250 – 500 mm	1 – 2	200 – 400 mm	1 – 2
500 – 1300 mm	2 – 3	400 – 1300 mm	2 – 3

* Beads with 8 to 10 mm diameter to provide a bonding surface, after crushing, of ± 40 mm.

After applying the Effisus Bonding KF, KFP or KF+P Adhesives on the support, directly apply the Effisus Ecofacade Membrane over the surface and apply pressure over the whole bonding area with a steel roll (Figure 4).

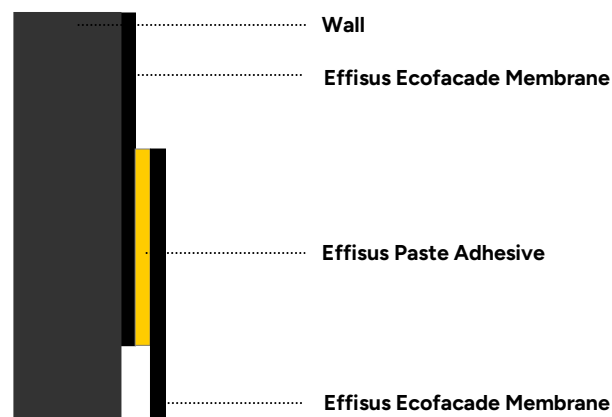


Figure 4 - Effisus Ecofacade System

It is possible and easy to correct the membrane's position.

The bonding strength will progressively increase until the moment when all the solvents in the adhesive fully evaporate, which can take from 10 to 14 days.

When exposed to UV's the Effisus Bonding KF, KF+P and KFP Adhesive may suffer discoloration.

7.2.1.2 Using Self-Adhesive bands (Effisus Ecofacade SA-Edge/SA-Edge XTRA)

Smooth, clean, and non-absorbent support surfaces do not require previous treatment. They should only be ungreased with Effisus Cleaner LV.

Porous and absorbent supports should be previously treated with Effisus Coat NP Primer.

Cut the Effisus Ecofacade SA-Edge/ SA-Edge XTRA membrane with the suitable length. Remove the self-adhesive band's protection, step by step, as one progress with the bonding and presses the membrane against the support, in the right position (Figure 5).

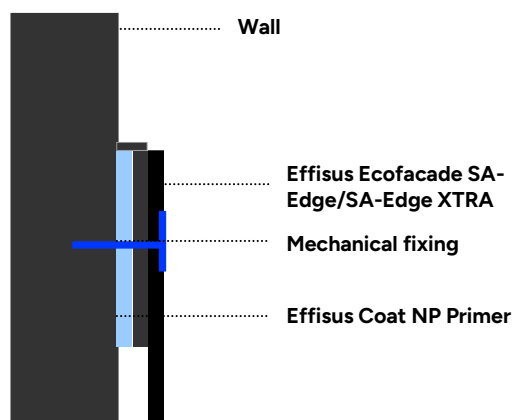


Figure 5.1 – The facade top, in special situations where it is difficult to remove the exterior coating.

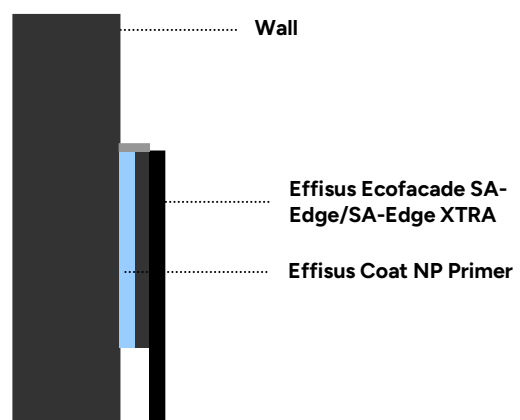


Figure 5.2 – The facade top, in special situations where bonding surface is easily reachable.

Bonding with self-adhesive Effisus SA-Edge/ SA-Edge XTRA strips does not require any additional gluing.

Horizontally, on the windows header and top of the curtain wall it is recommendable using mechanical fixing as a good practice procedure.

7.2.1.3 Using clip-in gaskets (Effisus Ecofacade P-Fix Membrane)

The Effisus Ecofacade P-Fix Membranes should be used with compatible profiles that match the aluminium/PVC profiles (see Figure 6).

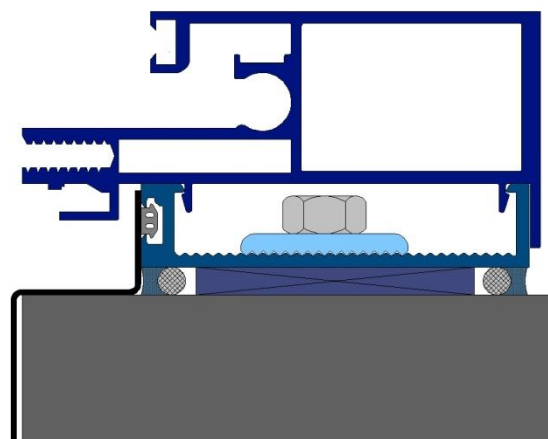


Figure 6 - Connection of the Effisus Ecofacade P-Fix Membrane with a profile

7.2.2 Overlapping Joints

The membranes must overlap, without any stress. The overlapping minimum is of 80mm. The membrane should have a relaxing period of at least 30 minutes. - Horizontal joints should overlap by 100mm minimum.

7.2.2.1 Effisus Bonding KF, KFP and KF+P Adhesives

To perform an overlapping bonding of two Effisus Ecofacade Membranes with the Effisus Bonding KF/KFP/KF+P Adhesive, the overlap should have at least 8cm.

Apply 2 beads of Effisus Bonding KF/KFP/KF+P over the inferior Effisus Ecofacade Membrane. Overlap the superior Effisus Ecofacade Membrane and apply steady pressure.

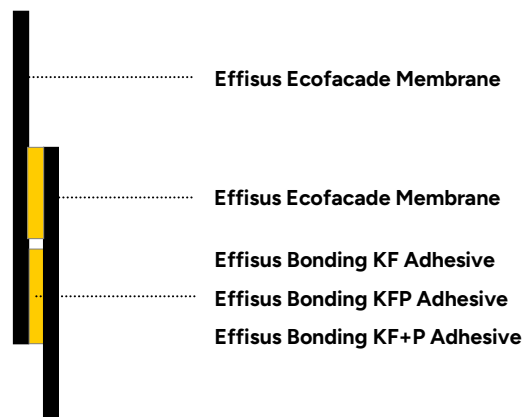


Figure 7 – Overlapping joint using Effisus Bonding KF/KFP/KF+P Adhesive

Check 7.2.3 for perimeter sealing of the membrane.

7.2.2.2 Using self-adhesive bands (Effisus Ecofacade SA-Edge)

Detach the protective film from the self-adhesive strip. Apply the superior membrane over the self-adhesive strip and apply steady pressure.

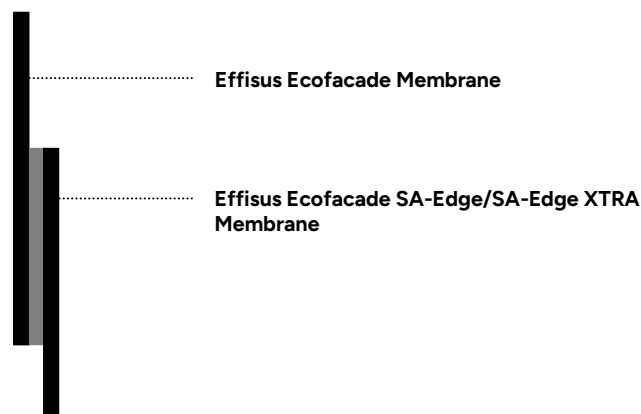


Figure 8 – Overlapping joint with Effisus SA-Edge/ SA-Edge XTRA bands

Check 7.2.3 for perimeter sealing of the membrane.

7.2.3 Perimeter sealing

7.2.3.1 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 Ecofacade membrane.

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

7.2.4 Perforations sealing

7.2.4.1 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.

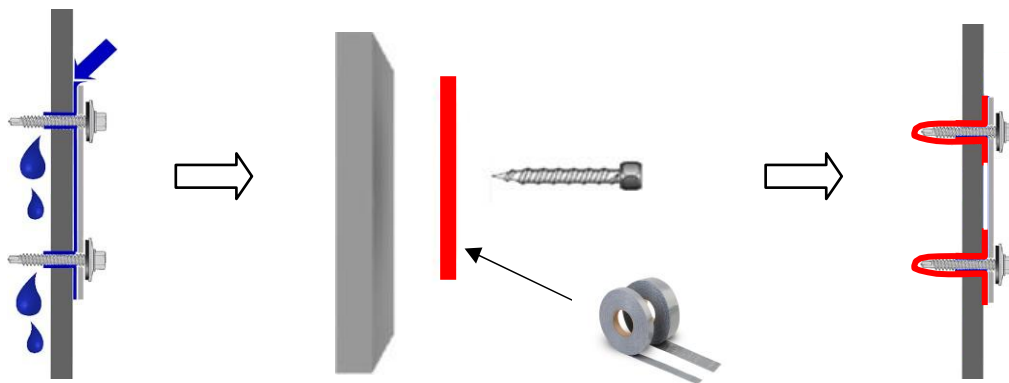


Figure 9 - Nails/screw perforations membrane sealing.

8. Repairs

In case of puncture to the membrane, sealing of the damaged area is essential, using a patch of Effisus Ecofacade 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 Ecofacade membrane. Effisus Bonding KF, KFP or KF+P adhesive should be applied at a distance of $\approx$ 50mm and 20mm from the membrane edge.

The repairing patch of Effisus Ecofacade should be adhered/sealed to the membrane using 2 beads 8mm- diameter with Effisus Bonding KF, KFP or KF+P adhesive, see Figure 10.

- 1 – Cut a Patch of Effisus Ecofacade at least 100mm larger than the tear to the Effisus Ecofacade (in every direction).
- 2 – Apply 2 beads 8mm-diameter of Effisus Bonding KF, KFP or KF+P to the Effisus Ecofacade $\approx$ 50mm and 20mm from the membrane edge.

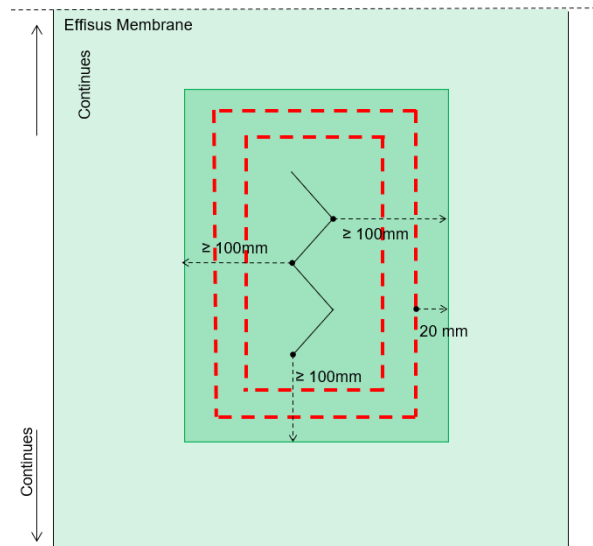
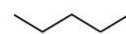


Figure 10 – Effisus Ecofacade Membrane - Repairs

Legend:

-  Tear on Effisus Ecofacade Membrane
-  Effisus Ecofacade Membrane
-  Patch Repair - Effisus Ecofacade Membrane
-  Effisus Bonding KF, KFP or KF+P Adhesives
-  Effisus Bonding KF, KFP or KF+P Adhesives bead applied around the edges of the membrane

9. Compatibility

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

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

10. 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, KFP or KF+P Adhesives	Black	600ml Sausage	At a bonding width of 8cm approx. 100g/m, 600ml allow for a 7m bond with a width of 8cm	In original containers, within a temperature range of 15°C and 35°C for not more than 12 months.
--	-------	------------------	---	--

11. Test Results and Certification

The technical details are presented in this document. Results from detaching tests will be made available upon request.

All the details presented were obtained from internal and external laboratories.

Details from the Effisus Ecofacade Membranes were obtained in accordance with the norms: EN 1849-2, EN 1928, EN 1931, EN 12311-2 B-Method, EN 12114, EN 12961:2006, EN 12730.

Effisus Ecofacade Membrane obtained CE marking based on EN 13984.

For further information contact Effisus.