

## Up-Way Systems

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**Agrément Certificate**

**21/5951**

Product Sheet 1

### EFFISUS ECOFACADE ENVELOPE SYSTEM

### EFFISUS VAPOUR FR MEMBRANE SYSTEM

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Effisus Vapour FR Membrane System Membrane System, aluminium-foiled glass fibre membrane for use as an air and vapour control layer in walls and floors.

(1) Hereinafter referred to as 'Certificate'.

#### CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

#### KEY FACTORS ASSESSED

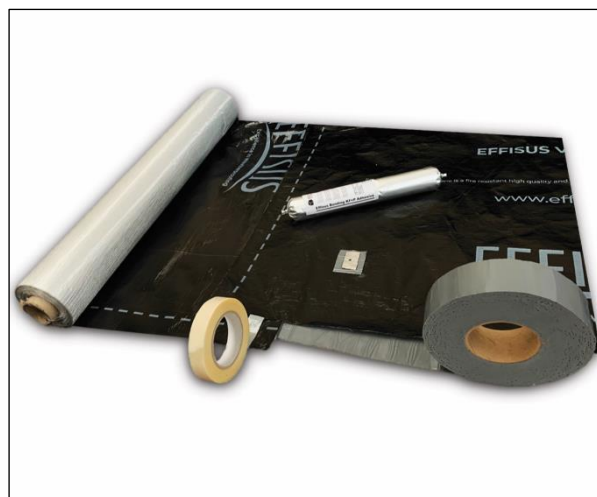
**Condensation** — the system is a vapour control layer and will reduce the risk of interstitial condensation (see section 6).

**Airtightness** — the system is an air barrier and can reduce heat loss by air infiltration (see section 7).

**Strength** — the system has adequate strength to resist the loads associated with the construction of the wall or floor (see section 8).

**Properties in relation to fire** — the system is classified as A2-s1,d0 in accordance with UNE EN 13501-1 : 2019, (see section 9).

**Durability** — the system will have a lifetime equal to that of the building element in which it is installed (see section 11).



The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 21 September 2021

Hardy Giesler  
Chief Executive Officer

The BBA is a UKAS accredited certification body – Number 113.

The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at [www.bbacerts.co.uk](http://www.bbacerts.co.uk)  
Readers MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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## Regulations

In the opinion of the BBA, Effisus Vapour FR Membrane System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



### The Building Regulations 2010 (England and Wales) (as amended)

<b>Requirement:</b>	<b>B3(4)</b>	<b>External fire spread</b>
Comment:		The system can contribute to satisfying this Requirement. See section 9.1 and 9.2 of this Certificate.
<b>Requirement:</b>	<b>B4(1)</b>	<b>External fire spread</b>
Comment:		The system is unrestricted by this Requirement. See section 9 of this Certificate.
<b>Requirement:</b>	<b>C2(c)</b>	<b>Resistance to moisture</b>
Comment:		The system can contribute to limiting the risk of interstitial condensation. See section 6.3 of this Certificate.
<b>Requirement:</b>	<b>L1(a)(i)</b>	<b>Conservation of fuel and power</b>
Comment:		The system can contribute to satisfying this Requirement. See section 7 of this Certificate.
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship</b>
Comment:		The system is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>26</b>	<b>CO<sub>2</sub> emission rates for new buildings</b>
<b>Regulation:</b>	<b>26A</b>	<b>Fabric energy efficiency rates for new dwellings (applicable to England only)</b>
<b>Regulation:</b>	<b>26A</b>	<b>Primary energy consumption rates for new buildings (applicable to Wales only)</b>
<b>Regulation:</b>	<b>26B</b>	<b>Fabric performance values for new dwellings (applicable to Wales only)</b>
Comment:		The system can contribute to satisfying these Regulations. See section 7 of this Certificate.



### The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b>	<b>8(1)</b>	<b>Durability, workmanship and fitness of materials</b>
Comment:		The system can contribute to a construction satisfying this Regulation. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
Standard:	2.4	Cavities
Comment:		The system can contribute to satisfying this Standard with reference to clause 2.4.2 <sup>(1)(2)</sup> . See section 9 of this Certificate.
Standard:	3.15	Condensation
Comment:		The system can contribute to limiting the risk of interstitial condensation, with reference to clauses 3.15.1 <sup>(1)(2)</sup> and 3.15.5 <sup>(1)(2)</sup> of this Standard. See section 6.3 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The system can contribute to satisfying the requirements of these Standards, with reference to clauses 6.1.1 <sup>(1)</sup> , 6.1.2 <sup>(2)</sup> , 6.2.4 <sup>(1)</sup> , 6.2.6 <sup>(2)</sup> , 6.2.10 <sup>(1)</sup> , 6.2.11 <sup>(1)(2)</sup> , 6.2.12 <sup>(2)</sup> and 6.2.13 <sup>(2)</sup> . See section 7 of this Certificate.

**Standard:** 7.1(a)(b) **Statement of sustainability**  
**Comment:** The system can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. In addition, the system can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4<sup>(1)</sup> [Aspects 1<sup>(1)</sup> and 2<sup>(1)</sup>], 7.1.6<sup>(1)(2)</sup> [Aspects 1<sup>(1)(2)</sup> and 2<sup>(1)(2)</sup>], 7.1.7<sup>(1)</sup> [Aspect 1<sup>(1)</sup>], 7.1.9<sup>(2)</sup> [Aspects 1<sup>(2)</sup> and 2<sup>(2)</sup>] and 7.1.10<sup>(2)</sup> [Aspects 1<sup>(2)</sup>]. See section 7 of this Certificate.

**Regulation:** 12 **Building standards applicable to conversions**  
**Comment:** Comments in relation to the system under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1<sup>(1)(2)</sup> and Schedule 6<sup>(1)(2)</sup>.

(1) Technical Handbook (Domestic).  
(2) Technical Handbook (Non-Domestic).



## The Building Regulations (Northern Ireland) 2012 (as amended)

**Regulation:** 23(a)(i) **Fitness of materials and workmanship**  
**Comment:** (iii)(b)(i) The system is acceptable. See section 11 and the *Installation* part of this Certificate.

**Regulation:** 29 **Condensation**  
**Comment:** The system can contribute to limiting the risk of interstitial condensation. See section 6.3 of this Certificate.

**Regulation:** 35(4) **Internal fire spread - structure**  
**Comment:** The system can contribute to satisfying this Regulation. See section 9 of this Certificate.

**Regulation:** 39(a)(i) **Conservation measures**  
**Regulation:** 40(2) **Target carbon dioxide emission rate**  
**Comment:** The system can contribute to satisfying these Regulations. See section 7 of this Certificate.

## Construction (Design and Management) Regulations 2015

## Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See section: 1 *Description* (1.2) of this Certificate.

## Additional Information

### NHBC Standards 2021

In the opinion of the BBA, Effisus Vapour FR Membrane System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 6.2 *External timber framed walls*, 6.9 *Curtain walling and cladding*, 6.10 *Light steel framed walls and floors* and 9.2 *Wall and ceiling finishes*.

### CE marking

The Certificate holder has taken the responsibility of CE marking the system in accordance with harmonised European Standard EN 13984 : 2013.

### 1 Description

1.1 Effisus Vapour FR Membrane is a multi-layer vapour control membrane comprising a black water base lacquer, aluminium layer, and 84 gsm woven glass fibre.

1.2 The system has the following nominal characteristics:

Thickness (mm)	0.14
Mass per unit area ( $\text{g}\cdot\text{m}^{-2}$ )	165
Roll length (m)	50
Roll width (m)	1.2
Equivalent air layer thickness — $s_d$ (m)	>1500
Water vapour resistance ( $\text{MN}\cdot\text{s}\cdot\text{g}^{-1}$ )	>7500
Watertightness	
unaged	Class W1
aged <sup>(1)</sup>	Class W1
Tensile strength (N per 50 mm)	
longitudinal	700
transverse	400
Elongation at maximum tensile force (%)	
longitudinal	3
transverse	3
Nail tear (N)	
longitudinal	170
transverse	130
Reaction to fire	Class A2-s1,d0
Colour	White underside, black top side and white logo.

(1) Aged in accordance with EN 13859-2 : 2014, Annex C.

1.3 Ancillary items within the scope of the Certificate for use with the system include:

- Effisus 2Bond DS Tape – a double-sided tape for bonding/sealing between the same material or two different materials
- Effisus 2Adjoin DF Tape – a double-sided airtight and moisture-resistant sealing tape for weathertight / airtight joints for the Effisus Membranes
- Effisus Bonding KF+P Adhesive – a solvent-free adhesive / sealant paste for bonding Effisus Membranes to conventional building substrates
- Effisus Coat NP Primer – a primer for porous surfaces
- Effisus Coat SP Primer – a primer for porous surface
- Effisus Setup PR Cleaner – a surface cleaner used prior to the application of the adhesives and primer.

### 2 Manufacture

2.1 The membrane is manufactured by bonding aluminium foil to  $84 \text{ g}\cdot\text{m}^{-2}$  woven glass fibre.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management systems of the manufacturer have been assessed and registered as meeting the requirements of EN ISO 9001 : 2015.

2.4 The environmental management system of the manufacturer has been assessed and registered as meeting the requirements of ISO 14001 : 2015.

### 3 Delivery and site handling

3.1 The membrane is delivered to site in rolls, with paper and polyethylene (PE) wrappings bearing the marketing company's name, the grade identification, the technical specifications, and the BBA logo incorporating the number of this Certificate.

3.2 The rolls should be stored flat on their sides, on a smooth, clean, dry surface, under cover and protected from Sunlight and extreme weather conditions or any type of puncture, and should be kept within temperatures of 5°C and 20°C.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Effisus Vapour FR Membrane System.

### Design Considerations

#### 4 Use

4.1 Effisus Vapour FR Membrane System is satisfactory for use as an air barrier and vapour control layer in conventional timber-frame, masonry and steel-frame walls and floor structures.

4.2 Where constructions need to comply with *NHBC Standards 2021*, specifiers should observe the requirements of this document.

4.3 It is essential that proper care and attention is given to maintaining the product's integrity and continuity.

4.4 Walls in new buildings should be designed and constructed in accordance with the relevant recommendations of the UK National Annexes of BS EN 1996-1-1 : 2005 and BS EN 1996-2 : 2006.

4.5 Suspended concrete and suspended timber ground floors incorporating the product, must include suitable ventilation.

#### 5 Practicability of installation

The product can be readily installed by operatives experienced with this type of product.

#### 6 Condensation

6.1 The risk of condensation occurring will depend upon the properties and vapour resistance of other materials used in the construction, the internal and external conditions, and the effectiveness of the systems installation.

6.2 Consideration must be given in the overall installation to minimising penetrations by services. Joints at ceilings/walls and wall/floor junctions must be sealed to offer significant resistance to water vapour transmission. Sealing should also be carried out in accordance with the Certificate holder's instructions.



6.3 Constructions should be in accordance with the nominal recommendations of BS 5250 : 2011, Annexes F and G, and favourably assessed in accordance with Annex D, using a minimum air layer equivalent value ( $s_d$ ) of not less than 1500 m (equivalent to a water vapour resistance of 7500 MN·s·g<sup>-1</sup>) for the system.

## 7 Airtightness



When lapped, fixed and taped correctly, the system acts as an air barrier and can contribute to elements and junctions minimising heat loss by unplanned air infiltration and exfiltration. Guidance in this respect can be found in the documents supporting the national Building Regulations.

## 8 Strength

The system will resist the normal loads associated with installation of the wall or floor.

## 9 Properties in relation to fire



9.1 The membrane is classified as Class A1 in accordance with EN 13501-1 : 2018<sup>(1)</sup>.

9.2 The system including ancillary items is classified as Class A2-s1, d0 in accordance with UNE-EN 13501-1 : 2019<sup>(2)</sup>

- (1) Classification report 20/23809-2432 issued by LGAI Technological Center, S.A. A copy of the report is available from the Certificate holder.
- (2) Classification report 20/23809-2459-2 issued by LGAI Technological Center, S.A. A copy of the report is available from the Certificate holder.

9.3 Cavity barriers should be used to satisfy the requirements of the national Building Regulations.

## 10 Maintenance

As the system is confined within a wall or floor structure and has suitable durability (see section 11), maintenance is not required. Any damaged areas should be repaired or replaced before completion, in accordance with section 14.

## 11 Durability



The system will have a lifetime equal to that of the building element in which it is installed.

## Installation

### 12 General

Installation of Effisus Vapour FR Membrane System should be in accordance with Certificate holder's instructions and good building practice.

### 13 Procedure

13.1 The system should be located on the internal face (warm side) of the back wall and fixed on top of the vertical Galvanized Steel SFS Studs. The weatherproofing design of the installation should be carried out in detail, and on a case by case basis.

13.2 Double-sided adhesive/sealant tape should be spaced at a maximum of 600 mm, vertically and horizontally.

13.3 Double-sided adhesive/sealant tape (thickness > 1.50 mm) should be applied continuously on the connections of the AVCL membrane edges/end laps to concrete, aluminium or any other substrate, always allowing for interface movement (AVCL/windows frame; ACVL/concrete slab, etc).

13.4 For detailing, all nail/screw perforations below 25 mm in diameter should be sealed with a patch (50 x 50 mm) of double-sided adhesive tape. Facade perforations with irregular shapes and above 25 mm in diameter should be studied

in detail case by case. All tapes, adhesives and sealants should not be applied in rain or if the temperature is below 5°C. Primer is required for temperatures below 5°C. Care should be taken on porous surfaces such as concrete.

## 14 Repair

Damage to Effisus Vapour FR Membrane can be repaired with patches of Effisus Vapour FR Membrane and Effisus 2Adjoin DF Tape. Extensive areas of damage must be made good by overlaying the damaged area with a new sheet, sealed in place with Effisus 2Adjoin DF Tape.

## Technical Investigations

### 15 Tests

15.1 An assessment was made of data in relation to:

- water vapour transmission properties
- reaction to fire.

15.2 Tests were carried out to determine:

- mass per unit area
- tensile strength
- resistance to nail tear
- shear strength of joints
- peel strength of joints
- air permeability
- water penetration
- elongation.

### 16 Investigations

The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

## Bibliography

BS 5250 : 2011 + A1 : 2016 *Code of practice for control of condensation in buildings*

NA to BS EN 1996-1-1 : 2005 + A1 : 2012 UK National Annex to *Eurocode 6 — Design of masonry structures — General rules for reinforced and unreinforced masonry structures*

NA to BS EN 1996-2 : 2006 UK National Annex to *Eurocode 6 — Design of masonry structures — Design considerations, selection of materials and execution of masonry*

EN 13859-2 : 2014 *Flexible sheets for waterproofing — Definitions and characteristics of underlays — Underlays for walls*

EN 13984 : 2013 *Flexible sheets for waterproofing — Plastic and rubber vapour control layers — Definitions and characteristics*

UNE EN 13501-1 : 2019 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

ISO 14001 : 2015 *Environmental management systems — Requirements with guidance for use*

### 17 Conditions

#### 17.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

17.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

17.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

17.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

17.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

17.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.