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Agrément Certificate
22/6462
Product Sheet 2 Issue 1

EOLIS HC

EOLIS HC FOR TIMBER FRAME WALLS

This Agrément Certificate Product Sheet(1) relates to EOLIS HC for Timber Frame Walls, a multi-layer reflective foil, for use as an insulation and a reflective air and vapour control layer (AVCL) on new and existing conventional timber frame walls with external cladding or a masonry outer leaf, in domestic and non-domestic buildings, with height restrictions in some cases. The product may be installed on the inner side (warm side) of the timber frame substrate, secured by timber battens.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:

- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review

KEY FACTORS ASSESSED

Section 1. Mechanical resistance and stability
Section 2. Safety in case of fire
Section 3. Hygiene, health and the environment
Section 4. Safety and accessibility in use
Section 5. Protection against noise
Section 6. Energy economy and heat retention
Section 7. Sustainable use of natural resources
Section 8. Durability

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 issue: 21 February 2024

Hardy Giesler
Chief Executive Officer

This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.

The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).

Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

The Certificate should be read in full as it may be misleading to read clauses in isolation.

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

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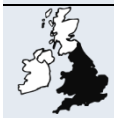
SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that EOLIS HC for Timber Frame Walls, 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 Building Regulations 2010 (England and Wales) (as amended)

Requirement:	**B3(4)**	**Internal fire spread (structure)**
Comment:		The product can contribute to satisfying this Requirement. See section 2 of this Certificate.
Requirement:	**B4(1)**	**External fire spread**
Comment:		The product is restricted by this Requirement. See section 2 of this Certificate.
Requirement:	**C2(c)**	**Resistance to moisture**
Comment:		The product can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement:	**L1(a)(i)**	**Conservation of fuel and power**
Comment:		The product can contribute to satisfying this Requirement. See section 6 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**7(2)**	**Materials and workmanship**
Comment:		The product is restricted by this Regulation. See section 2 of this Certificate.
Regulation:	**25B**	**Nearly zero-energy requirements for new buildings**
Regulation:	**26**	**CO_2 emission rates for new buildings**
Regulation:	**26A**	**Fabric energy efficiency rates for new dwellings (applicable to England only)**
Regulation:	**26A**	**Primary energy rates for new buildings (applicable to Wales only)**
Regulation:	**26B**	**Fabric performance values for new dwellings (applicable to Wales only)**
Regulation:	**26C**	**Target primary energy rates for new buildings (applicable to England only)**
Regulation:	**26C**	**Energy efficiency rating (applicable to Wales only)**
Comment:		The product can contribute to satisfying these Regulations. See section 6 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)**	**Fitness and durability of materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**8(3)**	**Fitness and durability of materials and workmanship**
Comment:		The product is restricted by this Regulation. See section 2 of this Certificate.
Regulation:	**9**	**Building standards - construction**
Standard:	2.4	Cavities
Comment:		Use of the product is restricted by this Standard, with reference to clauses 2.4.2[(1)(2)], 2.4.4[(1)] and 2.4.6[(2)]. See section 2 of this Certificate.

Standard:	2.6	Spread to neighbouring buildings
Comment:		The product is restricted by this Standard in some cases, with reference to clauses 2.4.4(1), 2.4.6(2), 2.6.5(1) and 2.6.6(2). See section 2 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.15.1(1)(2), 3.15.4(1)(2) and 3.15.5(1)(2). See section 3 of this Certificate.
Standard:	6.1(b)(c)(d)	Energy demand and carbon dioxide emissions The product can contribute to satisfying this Standard, with reference to clause 6.1.1(1); however, compensating fabric/services measures may be required. See section 6 of this Certificate.
Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 6.2.1(1)(2), 6.2.3(1), 6.2.4(2), 6.2.6(1), 6.2.7(1)(2), 6.2.8(1)(2), 6.2.9(1)(2), 6.2.10(1)(2), 6.2.11(1)(2) and 6.2.12(1); however, compensating fabric measures may be required. See section 6 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The product 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 product can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.2(1), 7.1.3(2), 7.1.4(1), 7.1.6(1)(2) 7.1.7(1), 7.1.8(2), 7.1.9(2) and 7.1.10(2). See section 6 of this Certificate.
Regulation:	**12**	**Building standards - conversion**
Comment:		All comments given for the product under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1(1)(2) and Schedule 6(1)(2).

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

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

Regulation:	**23(1)(a)(i)**	**Fitness of materials and workmanship**
Comment:	**(iii)(b)(i)(ii)**	The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**23(2)**	**Fitness of materials and workmanship**
Comment:		The product is restricted by this Regulation. See section 2 of this Certificate.
Regulation:	**29**	**Condensation**
Comment:		The product can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	**35(4)**	**Internal fire spread – structure**
Comment:		The product can contribute to satisfying this Regulation. See section 2 of this Certificate.
Regulation:	**36(a)**	**External fire spread**
Comment:		The product is restricted by this Regulation in some cases. See section 2 of this Certificate.
Regulation:	**39(a)(i)**	**Conservation measures**
Comment:		The product can contribute to satisfying this Regulation; however, compensating fabric measures may be required. See section 6 of this Certificate.

Regulation:	**40(2)**	**Target carbon dioxide emission rate**
Regulation:	**43(1)(2)**	**Renovation of thermal elements**
Regulation:	**43(B)**	**Nearly zero-energy requirements for new buildings**
Comment:		The product can contribute to satisfying these Regulations. See section 6 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, EOLIS HC for Timber Frame Walls, 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 6.1 *External masonry walls* and 6.2 *External timber framed walls*.

Fulfilment of Requirements

The BBA has judged EOLIS HC for Timber Frame Walls to be satisfactory for use as described in this Certificate. The product has been assessed as an insulation and reflective AVCL, for use on new and existing conventional timber frame walls with external cladding and a masonry outer leaf, in domestic and non-domestic buildings, with height restrictions in some cases. The product may be installed on the inner side (warm side) of the timber frame substrate, secured by timber battens.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. EOLIS HC for Timber Frame Walls is a multi-layer flexible reflective insulation and AVCL, with a self-adhesive overlap on the bottom edge, made up from a variable number of 'pockets' and a AVCL layer:

- reflective foils – polyolefin film, aluminium coated on one face
- polyester wadding
- four layers of reflective foil and three layers of polyester wadding make up a 'pocket', formed by ultrasonic welding
- copper-coloured reinforced polyethylene AVCL, aluminium coated on both faces and adhered to the 'pockets'.

The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics[(1)]

Product	No. of layers	Width (mm)	Thickness (mm)	Roll length (m)	Area per roll (m^2)	Weight per roll (kg)
EOLIS HC 45	15	1500	45	11.3	17.0	7.3
EOLIS HC 65	22	1500	65	10.7	16.0	9.6
EOLIS HC 85	29	1500	85	10.7	16.0	12.3
EOLIS HC 105	36	1500	105	10.7	16.0	15.1
EOLIS HC 120	43	1500	120	8.0	12.0	13.3
EOLIS HC 135	50	1500	135	8.0	12.0	15.4

(1) Nominal density 8.5 $kg \cdot m^3$.

Ancillary Items

The Certificate holder recommends the following ancillary items for use with the product, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- Pre-treated timber battens
- Stainless steel or galvanized steel staples
- Additional insulation materials
- ACTIS Foil Tape - used to seal overlaps, small rips or holes and around penetrations
- ACTIS Isoclip+ - used to aid fixing of the product over timber studs and or battens.

Product assessment – key factors

The product was assessed for the following key factors, and the outcomes of the assessments are shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

1 Mechanical resistance and stability

Data were assessed for tensile and elongation properties, as follows.

Table 2 Determination of tensile and elongation properties

Product assessed	Assessment method	Requirement	Result
Copper-coloured outer layer only	Tensile strength and elongation to BS EN 13859-1 : 2014	Declared minimum tensile force Longitudinal 250 N per 50 mm Transverse 150 N per 50 mm	 Pass Pass
		Elongation Longitudinal <25% Transverse <25%	 Pass Pass
	Resistance to tearing to BS EN 13859-1 : 2014	Declared minimum resistance to tearing force Longitudinal 150 N Transverse 150 N	 Pass Pass
	Peel strength to BS EN ISO 11339 : 2010 Control	Minimum peel strength 20 N per 100 mm	Pass

1.1 On the basis of data assessed, the product has adequate mechanical resistance and stability properties.

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 Reaction to fire

2.1.1 The product was tested for reaction to fire and the classification is given in Table 3.

Table 3 Reaction to fire classification

Product assessed	Assessment method	Requirement	Result
EOLIS HC	NF EN 13501-1 : 2018(1)	Value achieved	F

(1) Laboratoire de Trappes, report ref. P222715, issue number DEC/2, 8 July 2022. Copies can be obtained from the Certificate holder on request.

2.1.2 The product must be protected from naked flames and other ignition sources during and after installation.

2.1.3 On the basis of data assessed, the product will be restricted in use under the documents supporting the national Building Regulations, in some cases.

2.1.4 In England, Wales and Northern Ireland, the product must not be used on buildings with a storey 18 m or more in height. Additionally, in England, it must not be used on residential buildings with a storey more than 11 m in height.

2.1.5 In Scotland, the product must not be used on buildings that have a storey 11 m or more above ground level or within 1 m of a boundary.

2.1.6 In England, Wales and Northern Ireland, the product is unrestricted in terms of proximity to a boundary.

2.1.7 Designers must refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for substrate fire resistance, cavity closers and barriers, fire stopping of service penetrations and combustibility limitations for other materials and components used in the overall wall construction.

2.2 Fire resistance

2.2.1 The product must be contained by a fire-resistant lining board manufactured in accordance with BS EN 520 : 2004, with joints fully sealed and supported by timber studs or battens.

2.2.2 Where the product is incorporated in a wall construction where fire resistance is required by the documents supporting the national Building Regulations, the fire resistance should be confirmed by a suitably qualified and experienced individual.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Water vapour permeability

3.1.1 The product was tested for water vapour permeability to establish a water vapour diffusion-equivalent air layer thickness (s_d). The results are given in Table 4.

Table 4 Water vapour diffusion-equivalent air layer thickness (s_d)

Product assessed	Assessment method	Conditioning	Requirement	Result (s_d)
Product without the copper-coloured AVCL	BS EN 1931 : 2000	None	Declared value	Initial = 1.7 m
Copper-coloured AVCL				Initial > 120 m

3.2 Watertightness

3.2.1 The copper coloured AVCL layer was tested for watertightness, with the result given in Table 5.

Table 5 Determination of watertightness

Product assessed	Assessment method	Result
Copper-coloured AVCL layer only	BS EN 1928 : 2000 Method A, with a pressure of 2 kPa	Pass

3.3 Odour

3.3.1 The product was tested for the release of volatile organic compounds (VOC) into indoor air, with the results given in Table 6.

Table 6 Release of volatile organic compounds into indoor air

Product assessed	Assessment method	Requirement	Result
EOLIS HC	BS ISO 16000-3 : 2011 BS ISO 16000-6 : 2011 BS EN ISO 16000-9 : 2006 BS EN ISO 16000-11 : 2006	Value achieved	Formaldehyde (28 days) < 2.0 µg·m^3 Total VOC (28 days) 16 µg·m^3

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Data were assessed for the following characteristics.

6.1 Thermal performance

6.1.1 The product was tested for thermal resistance and emissivity, with the results given in Table 7.

Table 7 Thermal performance

Product assessed	Assessment method	Requirement	Result
EOLIS HC core	Thermal resistance to BS EN 12667 : 2001	Value achieved, rounded down to the nearest 0.05 $m^2 \cdot K \cdot W^{-1}$	45 mm = 1.45 $m^2 \cdot K \cdot W^{-1}$ 65 mm = 2.10 $m^2 \cdot K \cdot W^{-1}$ 85 mm(1) = 2.75 $m^2 \cdot K \cdot W^{-1}$ 105 mm = 3.35 $m^2 \cdot K \cdot W^{-1}$ 120 mm(1) = 3.85 $m^2 \cdot K \cdot W^{-1}$ 135 mm = 4.35 $m^2 \cdot K \cdot W^{-1}$
Copper-coloured AVCL	Emissivity to BS EN 16012 : 2012 Control	Declared value 0.05	Pass
EOLIS HC 135mm	Thermal resistance to BS EN 12667 : 2001	Value achieved, rounded down to the nearest 0.05 $m^2 \cdot K \cdot W^{-1}$	7mm = 0.25 $m^2 \cdot K \cdot W^{-1}$

(1) Extrapolated values.
Note: 0.25 $m^2 \cdot K \cdot W^{-1}$ should be taken for the thermal resistance of the 135mm thick product when compressed to 7mm thick between a timber frame and timber battens.

6.2 Thermal transmittance

6.2.1 The U value of a completed timber frame wall will depend on the thickness of the product, the wall structure, additional insulation, and its internal finish. Example U values are given in Table 8.

Table 8 Example U values — timber frame wall[1]

Target U value ($W \cdot m^{-2} \cdot K^{-1}$)	Product thickness[2]
	EOLIS HC product installed between timber frame and battens, with additional insulation (where required) installed in front of the product[3]
0.13	135 mm + 70 mm additional insulation[4]
0.15	135 mm + 50 mm additional insulation[4]
0.17	135 mm + 35 mm additional insulation[4]
0.18	135 mm + 25 mm additional insulation[4]
0.21	105 mm + 30 mm additional insulation
0.26	120 mm
0.28	120 mm
0.30	105 mm
0.35	85 mm

(1) Construction, external to internal, comprises:
102.5 mm brick (λ = 0.77 $W \cdot m^{-1} \cdot K^{-1}$), 50 mm clear cavity (R = 0.18 $m^2 \cdot K \cdot W^{-1}$), breather membrane, 9 mm (OSB) sheathing board (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$), 140 mm timber frame (15% fraction) (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$), variable thickness airspace in the timber frame, EOLIS HC (50% within the timber frame, 50% within the timber battens)[4], variable depth timber battens (11.8%) (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$), additional insulation where required[3], 12.5 mm gypsum plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).
(2) Nearest available product thickness.
(3) Additional foil-faced polyisocyanurate (PIR) insulation with a declared thermal conductivity of λ_D = 0.022 $W \cdot m^{-1} \cdot K^{-1}$, installed on the warm side of the construction.
(4) The 135mm product when installed between the timber frame and battens, can be assumed to be 7mm thick with a thermal resistance of R = 0.25 $m^2 \cdot K \cdot W^{-1}$.

6.2.2 The product can contribute towards a construction satisfying the national Building Regulations in respect of energy economy and heat retention.

6.2.3 For improved energy or carbon savings, designers must consider appropriate fabric and/or services measures.

6.2.4 The product has a nominal heat capacity value of 1600 $J \cdot kg^{-1} \cdot K^{-1}$.

7 Sustainable use of natural resources

Not applicable.

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in this product were assessed.

8.2 Data were assessed for durability characteristics, as shown in Table 9:

Table 9 Durability

Product assessed	Assessment method	Requirement	Result
EOLIS HC	Dimensional stability to BS EN 1604 : 2013 (70°C and 90% RH for 48 hours)	Value achieved	Length and width < 1 % change
		Value achieved	Thickness < 15 % change
Copper-coloured AVCL only	Peel strength to BS EN ISO 11339 : 2010 (70°C and 90% RH for 28 days)	> 20 N per 100 mm	Pass
EOLIS HC without the copper-coloured AVCL	Determination of water vapour transmission to BS EN 1931 : 2000 (control and aged at 70°C for 12 weeks)	Value achieved	s_d = 22 mm control = 1.7 m s_d = 22 mm aged = 1.5 m
EOLIS HC extrapolated values without the copper-coloured AVCL		Value achieved	s_d = 45 mm aged(1) = 3.0 m s_d = 65 mm aged(1) = 4.5 m s_d = 85 mm aged(1) = 6.0 m s_d = 105 mm aged(1) = 7.5 m s_d = 120 mm aged(1) = 9.0 m s_d = 135 mm aged(1) = 10.5m
Copper-coloured AVCL		Value achieved	s_d = control = > 120 m s_d = aged = 65 m
		s_d = aged < ± 50% change from control	Pass
Copper-coloured AVCL	Emissivity to BS EN 16012 : 2012 (70°C and 90% RH for 28 days)	Declared value 0.05	Pass

(1) Extrapolated values.

8.3 Service life

Under normal service conditions, the product will have a life equivalent to the structure in which it is incorporated, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

9 Design, installation, workmanship and maintenance

9.1 Design

9.1.1 The design process was assessed by the BBA and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 Timber-framed wall constructions must be designed and constructed in accordance with the relevant recommendations of:

- BS 5250 : 2021
- BS 8000-3 : 2020
- BS EN 351-1 : 2023
- BS EN 1995-1-1 : 2004 and its UK National Annex

9.1.3 Typical timber frame build-ups are shown in Figures 1 to 4.

Figure 1 Typical timber frame installation

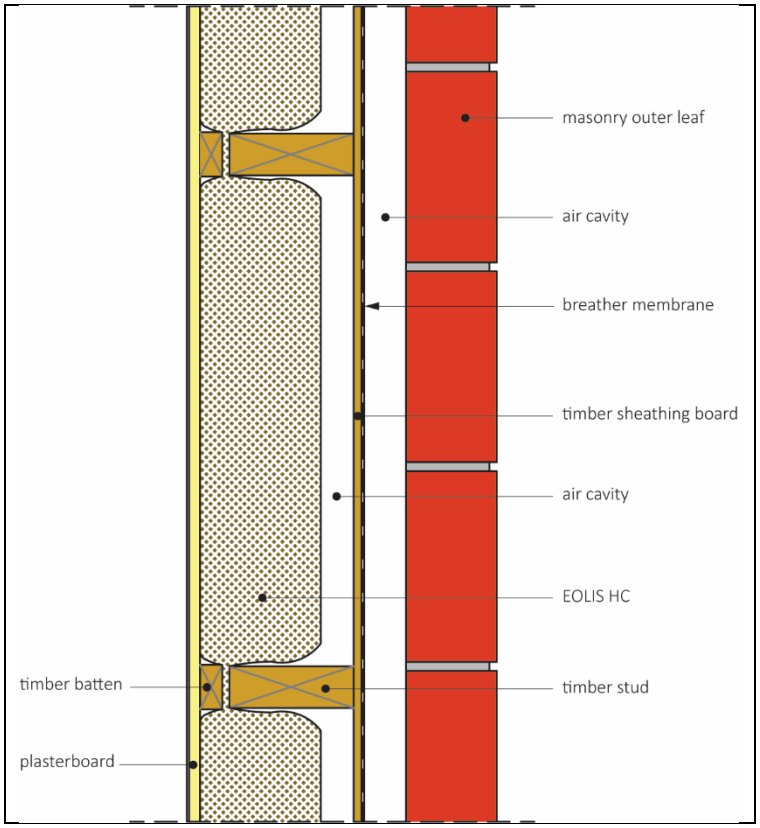


Figure 2 Typical timber frame installation

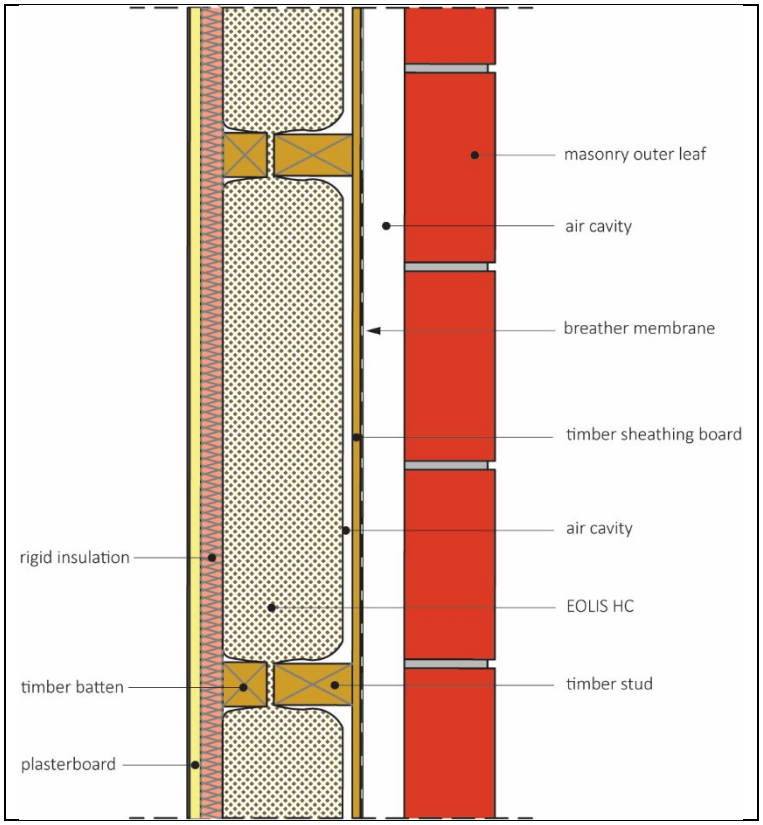


Figure 3 Typical timber frame installation

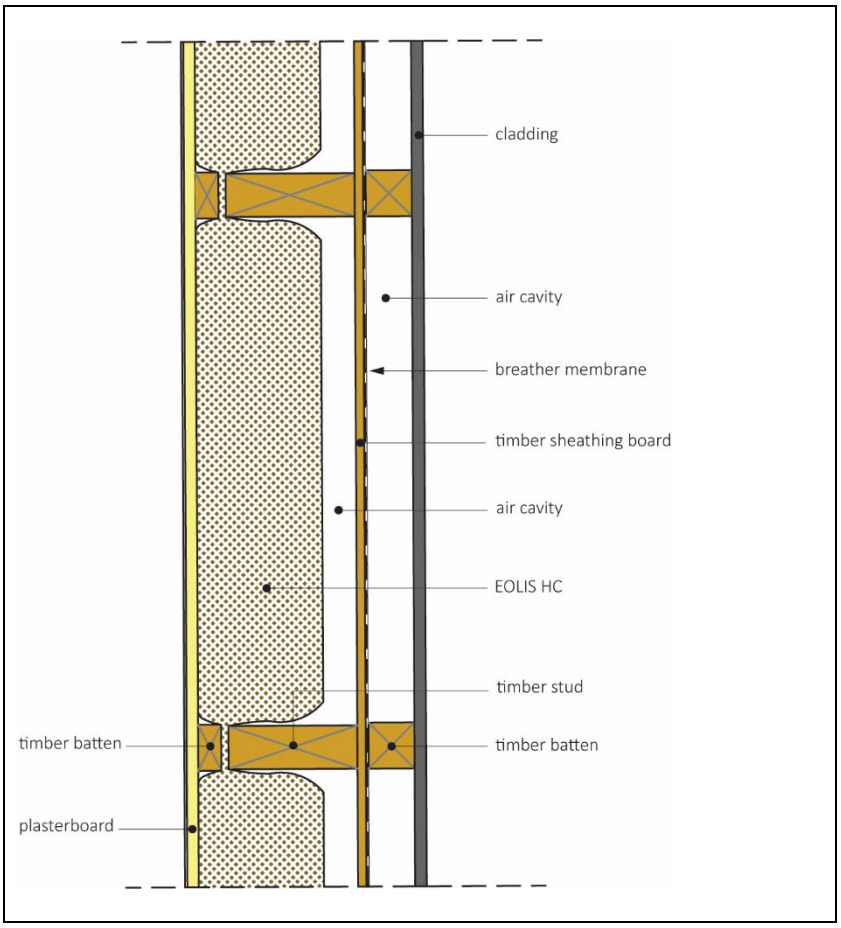
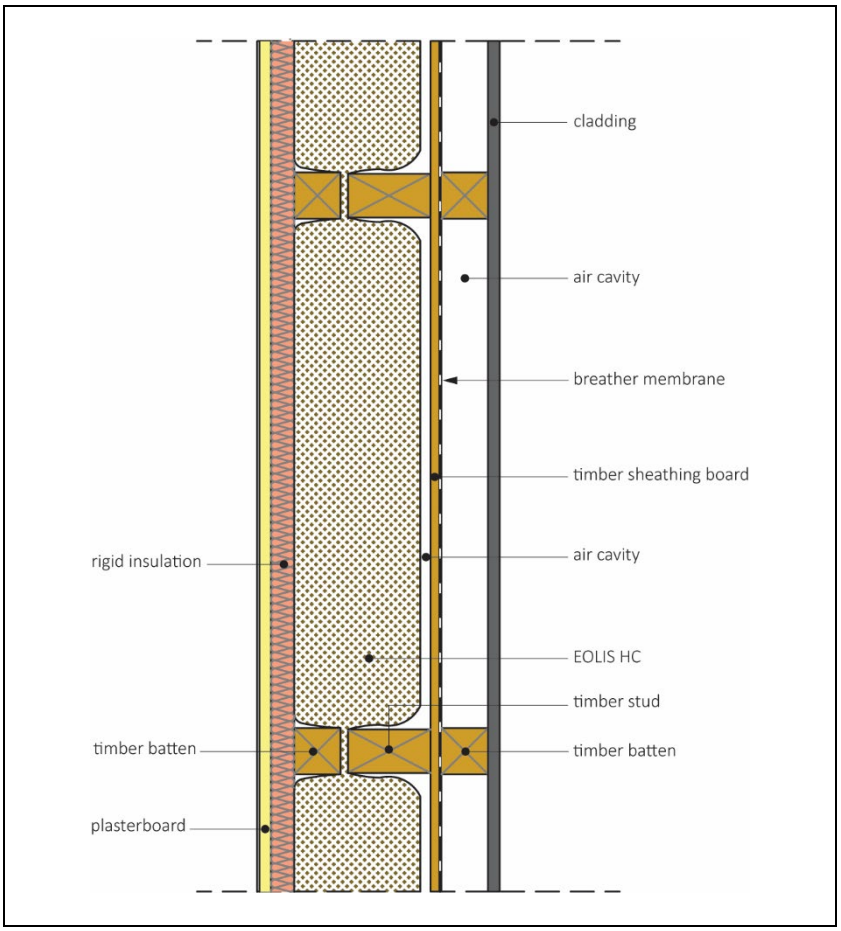


Figure 4 Typical timber frame installation



9.1.4 Construction elements must be designed and constructed to incorporate the normal precautions against moisture ingress before application of the product.

9.1.5 The guidance given in the documents supporting the national Building Regulations must be followed when the system is installed in close proximity to certain flue pipes and/or heat-producing appliances.

9.1.6 Services which penetrate the internal plasterboard lining (such as light switches or power outlets) must be kept to a minimum to limit damage to AVCLs. In addition, any penetrations should be enclosed in plasterboard, stone mineral wool or a suitably tested proprietary fire-rated system in order to preserve the fire resistance of the wall.

9.1.7 Insulated dry lining systems require careful detailing during installation around doors and windows to achieve a satisfactory surface for finishing. In addition, every attempt must be made to minimise the risk of thermal bridging at reveals and where heavy separating walls are attached to the external wall. New work must be designed to accommodate the thickness of the dry lining, particularly at reveals, heads, and sills, and in relation to ceiling height. Where the dimensions of fixtures are critical (eg, bathrooms), these must be checked before installation.

9.1.8 De-rating of electric cables should be considered in areas where the product restricts the flow of air. The use of suitable conduit or trunking is recommended.

9.1.9 Care must be taken in the overall design and construction of junctions with other elements and openings to minimise thermal bridges and air infiltration. Detailed guidance can be found in the documents supporting the national Building Regulations.

Interstitial condensation

9.1.10 The BBA has assessed the product for the risk of interstitial condensation and the following factors must be implemented.

9.1.10.1 An assessment of the risk of interstitial condensation for the specific construction must be carried out in accordance with BS EN ISO 13788 : 2012.

9.1.10.2 To limit the risk of interstitial condensation, walls must be designed and constructed in accordance with the relevant parts of BS 5250 : 2021.

9.1.10.3 Adequate ventilation must be provided, particularly in rooms expected to experience high humidity, and to ensure the integrity of the product against vapour ingress.

9.1.10.4 Wall design, construction and maintenance limit opportunities for vapour migration by diffusion and by convection through gaps, cracks and laps in the product and through penetrations.

Surface condensation

9.1.11 In England and Wales, walls will limit the risk of surface condensation adequately where the thermal transmittance (U value) does not exceed 0.7 $W \cdot m^{-2} \cdot K^{-1}$ at any point and the junctions with other elements are designed in accordance with section 6 of this Certificate.

9.1.12 For buildings in Scotland, constructions will be acceptable where the thermal transmittance (U value) of the wall does not exceed 1.2 $W \cdot m^{-2} \cdot K^{-1}$ at any point, and walls are designed and constructed in accordance with the relevant parts of BS 5250 : 2021. Further guidance may be obtained from BRE Report BR 262 : 2002.

9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions. A summary of instructions and guidance is provided in Annex A.

9.2.3 Existing constructions must be in a good state of repair, with no evidence of rain penetration or damp. Defects must be made good prior to installation.

9.2.4 Any mould or fungal growth found to be present must be treated.

9.2.5 The product must be installed in a continuous layer to guarantee contiguous insulation and airtightness, and to reduce any water vapour diffusion through the structure.

9.2.6 At each joint, horizontal and or vertical, the product must be overlapped by a minimum of 50 mm and sealed with foil tape. The product has a self-adhesive overlap on the bottom edge to aid installation.

9.2.7 All packaging must be removed before installation and the product installed with the reinforced (grid pattern) copper-coloured film facing the inside (warm side) of the building.

9.3 Workmanship

9.3.1 Practicability of installation was assessed by the BBA, on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, installation of the product must be carried out by a competent general builder, or a contractor, experienced with this type of product.

9.4 Maintenance and repair

9.4.1 As the product is confined within the wall cavity and has suitable durability, maintenance is not required.

10 Manufacture

10.1 The production processes for the product have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA has undertaken to review 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.

11 Delivery and site handling

11.1 The Certificate holder stated that the product is delivered to site as a roll, wrapped in polythene film, incorporating a label with the Certificate holder's trade name, product description and characteristics, and the BBA logo incorporating the number of this Certificate.

11.2 Delivery and site handing must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.2.1 The product must be stored in clean, dry conditions, preferably under cover and out of direct sunlight. Care must be taken to store the product away from solvents. Where possible, packs should be stored inside.

11.2.2 The product must not come into contact with naked flames or other ignition sources.

11.2.3 On site, to ensure maximum performance of the product when installed, precautions must be taken to protect it from mud and dirt.

ANNEX A – SUPPLEMENTARY INFORMATION †

Supporting information in this Annex is relevant to the product but has not formed part of the material assessed for the 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.

CLP Regulations

The Certificate holder has taken the responsibility of classifying and labelling the product under the *GB CLP Regulation* and the *CLP Regulation (EC) No 1272/2008 - classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheets.

CE marking

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

Additional information on installation

A.1 The product can be cut with scissors or a sharp knife. Where fixed onto timber, the product can be aligned and cut along the batten, by pressing the knife firmly onto the product against the batten. If the product is required to be cut lengthwise, it is recommended that this is carried out whilst the product is still in its packaging using an insulation saw.

A.2 The product should be secured effectively, which can be achieved by using minimum 14 mm stainless steel or galvanized steel staples installed at regular intervals (typically 250 mm centres).

A.3 The product should be installed across the face of the frame, fixing in a continuous layer and taking care that the insulation thickness is maintained between fixing points.

A.4 All perimeter edges, including around windows and doors, should be stapled every 50 mm and secured with foil tape and appropriately sized timber battens.

A.5 The additional insulation is not intended to provide an internal finish and must be lined with a suitable building board.

A.6 Where joints between plasterboard sheets are unsupported, timber noggins must be installed.

A.7 Where damage has occurred, a patch of the product larger than the damaged area may be fixed, ensuring all edges of the patch are completely sealed with foil tape. Alternatively, for small puncture damage of less than 25mm, Actis Foil Tape may be used.

Bibliography

BRE Report BR 262 : 2002 *Thermal insulation: avoiding risks*

BS 5250 : 2021 *Management of moisture in buildings — Code of practice*

BS 8000-3 : 2020 *Workmanship on construction sites — Masonry — Code of practice*

BS EN 351-1 : 2023 *Durability of wood and wood-based products — Preservative-treated solid wood — Classification of preservative penetration and retention*

BS EN 520 : 2004 + A1 : 2009 *Gypsum plasterboards — Definitions, requirements and test methods*

BS EN 1604 : 2013 *Thermal insulating products for building applications — Determination of dimensional stability under specified temperature and humidity conditions*

BS EN 1928 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of watertightness*

BS EN 1931 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of water vapour transmission properties*

BS EN 1995-1-1 : 2004 *Eurocode 5: Design of timber structures — General — Common rules and rules for buildings*
NA to BS EN 1995-1-1 : 2004 *UK National Annex to Eurocode 5: Design of timber structures — General — Common rules and rules for buildings*

BS EN 12667 : 2001 *Thermal performance of building materials and products — Determination of thermal resistance by means of guarded hot plate and heat flow meter methods — Products of high and medium thermal resistance*

BS EN 13859-1 : 2014 *Flexible sheets for waterproofing — Definitions and characteristics of underlays*

BS EN 16012 : 2012 *Thermal insulation for buildings – Reflective insulation products – Determination of the declared thermal performance*

BS EN ISO 11339 : 2010 *Adhesives — T-Peel test for flexible-to-flexible bonded assemblies*

BS EN ISO 13788 : 2012 *Hygrothermal performance of building components and building elements — Internal surface temperature to avoid critical surface humidity and interstitial condensation — Calculation methods*

BS ISO 16000-3 : 2011 *Indoor air — Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air — Active sampling method*

BS ISO 16000-6 : 2011 *Indoor air – Part 6: Determination of organic compounds (VVOC, VOC, SVOC) in indoor and test chamber air by active sampling on sorbent tubes, thermal desorption and gas chromatography using MS or MS FID*

BS EN ISO 16000-9 : 2006 *Indoor air — Part 9: Determination of the emission of volatile organic compounds from building products and furnishing — Emission test chamber method*

BS EN ISO 16000-11 : 2006 *Indoor Air — Part 11: Determination of the emission of volatile organic compounds from building products and furnishing — Sampling, storage of samples and preparation of test specimens*

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

NF EN 13501-1 : 2018 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

Conditions of Certificate

Conditions

1 This Certificate:

- relates only to the product 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.

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.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product 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.

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

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

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product 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.

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