Recticel Insulation UK Ltd
Enterprise Way Whittle Road
Meir Park
Stoke-on-Trent
Staffordshire ST3 7UN

Tel: 01782 590470
e-mail: technicalservices@recticel.com
website: www.recticelinsulation.co.uk

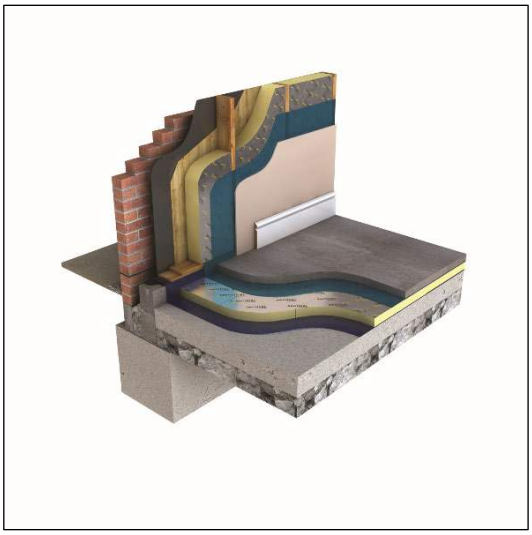
Agrément Certificate
24/7254
Product Sheet 3 Issue 1

EUROTHANE GP

EUROTHANE GP TIMBER FRAME BOARD

This Agrément Certificate Product Sheet(1) relates to Eurothane GP Timber Frame Board, comprising a rigid polyisocyanurate (PIR) foam board with a multilayer foil facing on both sides, for use as insulation in new conventional timber-frame walls with a masonry outer leaf, in domestic buildings, with height restrictions in some cases. The product may be installed between the studs and/or as insulated sheathing or dry lining over the studs.

(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: 11 December 2024

Hardy Giesler
Chief Executive Officer

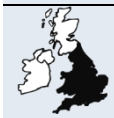
British Board of Agrément
1st Floor, Building 3, Hatters Lane
Croxley Park, Watford
Herts WD18 8YG
tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk

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 Eurothane GP Timber Frame Board, 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 in some cases. See section 2 of this Certificate.
Requirement:	**C2(a)**	**Resistance to moisture**
Comment:		The product can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement	**C2(b)**	**Resistance to moisture**
Comment:		The product can contribute to satisfying this Requirement. See section 9 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; however, compensating fabric measures may be required. 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 in some cases. 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; however, compensating fabric/service measures may be required. 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 in some cases. See section 2 of this Certificate.
Regulation:	**9**	**Building standards – construction**
Standard:	2.4	Cavities
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 2.4.2(1) and 2.4.4(1). 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 clause 2.6.5(1). See section 2 of this Certificate.
Standard:	3.4	Moisture from the ground
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.4.1(1) and 3.4.5(1). See section 3 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.10.1(1) and 3.10.5(1). See section 9 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.15.1(1), 3.15.4(1) and 3.15.5(1). See section 3 of this Certificate.
Standard:	6.1(b)(c)	Energy demand
Comment:		The product can contribute to satisfying this Standard, with reference to clause 6.1.1(1); however, compensating fabric/service 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), 6.2.3(1), 6.2.8(1) 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 7.1.4(1), 7.1.6(1) and 7.1.7(1). See section 6 of this Certificate.
Regulation:	**12**	**Building standards – conversion**
Comment:		All comments made in relation to the product under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1(1) and Schedule 6(1).

(1) Technical Handbook (Domestic).

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

Regulation:	**23(1)(a)(i) (iii)(b)(i)(ii)**	**Fitness of materials and workmanship**
Comment:		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 in some cases. See section 2 of this Certificate.
Regulation:	**28(a)**	**Resistance to moisture and weather**
Comment:		The product can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The product can contribute to satisfying this Regulation. See section 9 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:	**43B**	**Nearly zero-energy requirements for new buildings**
Comment:		The product can contribute to satisfying these Regulations; however, compensating fabric/services measures may be required. See section 6 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, Eurothane GP Timber Frame Board, 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 Eurothane GP Timber Frame Board to be satisfactory for use as described in this Certificate. The product has been assessed for use as insulation between the studs and/or as insulated sheathing or dry lining over the studs in new conventional timber-frame walls with a masonry outer leaf.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. Eurothane GP Timber Frame Board consists of a rigid PIR foam board with a multilayer foil facing on both sides.

The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Length (mm)	2400
Width (mm)	1200
Thickness[1] (mm)	25 – 160 (in 5 mm increments)
Edge profile	Straight

(1) Higher thicknesses are achieved by doubling the layers.

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:

- timber frame with masonry external leaf
- cavity wall ties with insulation-retaining fixings to BS EN 845-1 : 2013
- OSB sheathing board
- breather membrane
- air and vapour control layer (AVCL)
- plasterboard lining.

Applications

The product is intended for use as insulation in the following applications, in new domestic buildings:

- between the inner leaf studs of conventional timber-frame cavity walls with a clear cavity and a masonry outer skin
- between the inner leaf studs and as insulated sheathing over the studs of conventional timber-frame cavity walls with a clear cavity and a masonry outer skin
- between the inner leaf studs and as insulated dry lining over the studs of conventional timber-frame cavity walls with a clear cavity and a masonry outer skin
- as insulated sheathing over the studs of conventional timber-frame cavity walls with a clear cavity and a masonry outer skin.

Product assessment – key factors

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

1 Mechanical resistance and stability

Not applicable.

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 2.

Table 2 Reaction to fire classification

Product assessed	Assessment method	Requirement	Result(1)
Eurothane GP	BS EN 13501-1 : 2007	Value achieved	F

(1) Warringtonfire Gent, classification report reference 18060B, 30 November 2016, Issue No. 1, copies available from the Certificate holder on request.

2.1.2 On the basis of data assessed, the product will be restricted under the documents supporting the national Building Regulations.

2.1.3 In England, the product must not be used on buildings with a storey 11 m or more in height.

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

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

2.1.6 Designers must refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, 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 Resistance to fire

2.2.1 A fire-resistance test was carried out in accordance with BS 476-21 : 1987(1) on a loadbearing, timber stud wall system. An assessment(2) considered the likely fire resistance of the systems (see section 2.2.2) as if they had been tested to BS 476-21 : 1987. The main points of the assessment highlighted that:

- the systems defined in section 2.2.2 are suitable for applications where a fire resistance of up to 30 minutes is required against the loadbearing capacity, integrity and insulation criteria of BS 476-21 : 1987 for fire exposure from the inside, when subject to a total imposed load of 60 kN (10 kN load per stud)(3)
- for loads greater than 60 kN (10 kN load per stud), a suitably experienced and competent individual must utilise the BS 476-21 : 1987 fire-resistance test report and its accompanying assessment, to alter the design of the timber frame to ensure that the residual timber after 30 minutes will be adequate. The Certificate holder must be contacted for these reports
- timber studs must be at least 140 mm deep by 45 mm wide, located at maximum 600 mm centres. The same sections are used to form cross noggins at maximum 1200 mm centres. The noggins between each pair of studs are staggered by 600 mm from the noggins in the adjacent pair of studs.
- openings for doors and windows must be framed out and any exposed timber covered with at least one layer of plasterboard (see also section 9.1.9).

(1) BRE Global Ltd, test report reference 276585, 2 March 2012, Issue No. 1, copies available from the Certificate holder on request.
(2) BRE Global Ltd, assessment report reference CC 274585, 26 June 2012, Issue No. 1, copies available from the Certificate holder on request.
(3) Relates only to walls with a masonry outer leaf.

2.2.2 The four systems are:

System 1 — Eurothane GP Timber Frame Board between studs only

- outer brick leaf
- nominal 50 mm cavity
- breather membrane
- sheathing board — OSB or similar, at least 9 mm thick
- 25 to 160 mm thick Eurothane GP Timber Frame Board between the studs, retained using timber battens, nominal 35 by 25 mm, secured to the sides of the studs
- AVCL
- 12.5 mm gypsum plasterboard.

System 2 — Eurothane GP Timber Frame Board between studs and over studs (as insulated sheathing)

- outer brick leaf
- nominal 50 mm cavity
- 25 to 100 mm thick Eurothane GP Timber Frame Board against a breather membrane/sheathing board
- breather membrane
- sheathing board — OSB or similar, at least 9 mm thick
- 25 to 160 mm thick Eurothane GP Timber Frame Board between the studs, retained using timber battens, nominal 35 by 25 mm, secured to the sides of the studs
- AVCL
- 12.5 mm gypsum plasterboard.

System 3 — Eurothane GP Timber Frame Board between studs and over studs (as insulated dry lining)

- outer brick leaf
- nominal 50 mm cavity
- breather membrane
- sheathing board — OSB or similar, at least 9 mm thick
- 25 to 160 mm thick Eurothane GP Timber Frame Board between the studs, retained using timber battens, nominal 35 by 25 mm, secured to the sides of the studs
- maximum 25 mm thick Eurothane GP Timber Frame Board against the internal face of timber studs
- Optional AVCL (taping the insulation board joints with a foil tape to create an AVCL)
- 12.5 mm gypsum plasterboard secured to vertical timber battens, 50 mm wide by 25 mm thick, using 38 mm screws at maximum 300 mm centres. The battens are secured through the insulation to each stud at maximum 300 mm centres using screws long enough to penetrate the timber studs by at least 25 mm.

System 4 — Eurothane GP Timber Frame Board over studs (as insulated sheathing)

- outer brick leaf
- nominal 50 mm cavity
- 25 to 160 mm thick Eurothane GP Timber Frame Board against a breather membrane/sheathing board
- breather membrane
- sheathing board — OSB or similar, at least 9 mm thick
- no insulation between the studs
- AVCL
- 12.5 mm gypsum plasterboard.

2.2.3 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.

2.2.4 Other than for the systems defined in sections 2.2.1 and 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 must be confirmed by a suitably experienced and competent individual.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Effectiveness against rising damp

3.1.1 The product was tested for short term water absorption by partial immersion and the result is given in Table 3.

Table 3 Short term water absorption by partial immersion

Product assessed	Assessment method	Requirement	Result
Eurothane GP	BS EN ISO 29767 : 2019	≤ 1.25 $kg \cdot m^{-2}$	Pass

3.1.2 On the basis of data assessed, the product may be used in situations where it bridges the damp proof course (DPC) in walls; dampness from the ground will not pass through to the inner leaf provided the wall is detailed in accordance with the requirements and provisions of the national Building Regulations.

3.2 Water vapour permeability

3.2.1 The resistance to water vapour diffusion was assessed and the results are given in Table 4.

Table 4 Water vapour resistivity/resistance

Product assessed	Assessment method	Requirement	Result
PIR insulation	BS EN ISO 10456 : 2007	Declared value	300 $MN \cdot s \cdot g^{-1} \cdot m^{-1}$
Multilayer foil facing	BS EN 12086 : 1997	Value achieved	4000 $MN \cdot s \cdot g^{-1}$

3.2.2 For the purposes of assessing the risk of condensation, the water vapour resistivity/resistance values may be taken as stated in Table 4.

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 conductivity

The product was tested for thermal conductivity and the result is given in Table 5

Table 5 Thermal conductivity

Product assessed	Assessment method	Requirement	Result
Eurothane GP (all thicknesses)	BS EN 13165 : 2012	Declared value (λ_D)	0.022 $W \cdot m^{-1} \cdot K^{-1}$

6.2 Thermal performance

The multilayer foil facing was tested for emissivity and the result is given in Table 6.

Table 6 Emissivity of the multilayer foil facing

Product assessed	Assessment method	Requirement	Result
Multilayer foil facing	BS EN 16012 : 2012	Declared value	0.05

6.3 Conservation of fuel and power

6.3.1 The U value of a completed wall construction will depend on the insulation thickness, number and type of fixings, the insulating value of the substrate, and its internal finish. Example U values are given in Table 7.

Table 7 Example U values – new-build timber-framed external cavity wall

Target U Value ($W \cdot m^{-2} \cdot K^{-1}$)	Eurothane GP insulation thickness (mm)			
	System 1	System 2	System 3	System 4
	Between timber frame studs[1] (140 mm)	Between timber frame studs and over studs — sheathing[2] (140 mm)	Between timber frame studs and over studs — dry lining[3] (140 mm)	All over timber frame studs – sheathing[4] (140 mm)
0.13	—[5]	140 + 50	—[5]	150
0.15	—[5]	140 + 30	—[5]	125
0.17	—[5]	95 + 25	115 + 25	110
0.18	—[5]	85 + 25	100 + 25	100
0.21	—[5]	60 + 25	75 + 25	85
0.26	90	30 + 25	45 + 25	60
0.30	70	25 + 25	30 + 25	50

(1) Wall construction — 102.5 mm thick external brickwork (λ = 0.77 $W \cdot m^{-1} \cdot K^{-1}$); 50 mm slightly ventilated cavity (580 $mm^2 \cdot m^{-1}$ opening area); breather membrane; 11 mm OSB sheathing board (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$); 140 mm thick timber frame bridging at 600 mm centres (15%, λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$) with variable thickness of Eurothane GP; AVCL; and 15 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).

(2) Wall construction — 102.5 mm thick external brickwork (λ = 0.77 $W \cdot m^{-1} \cdot K^{-1}$); 50 mm slightly ventilated low emissivity cavity (ε = 0.05) (580 $mm^2 \cdot m^{-1}$ opening area); variable thickness of Eurothane GP as external sheathing, secured using 5.6 fully-penetrating mild steel (λ = 50 $W \cdot m^{-1} \cdot K^{-1}$) fixings per m^2 with a cross-sectional area of 9.6 mm^2; breather membrane; 11 mm OSB sheathing board (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$); 140 mm thick timber frame bridging at 600 mm centres (15%, λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$) with variable thickness of Eurothane GP; AVCL; and 15 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).

(3) Wall construction — 102.5 mm thick external brickwork (λ = 0.77 $W \cdot m^{-1} \cdot K^{-1}$); 50 mm slightly ventilated cavity (580 $mm^2 \cdot m^{-1}$ opening area); breather membrane; 11 mm OSB sheathing board (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$); 140 mm thick timber frame bridging at 600 mm centres (15%, λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$) with variable thickness of Eurothane GP; 25 mm Eurothane GP as internal lining, secured using 11 fully-penetrating mild steel (λ = 50 $W \cdot m^{-1} \cdot K^{-1}$) fixings per m^2 with a cross-sectional area of 13.2 mm^2; AVCL; additional 25 mm airspace bridged by timber battens where Eurothane GP is used as internal lining (11.8 %, λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$); and 15 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).

(4) Wall construction — 102.5 mm thick external brickwork (λ = 0.77 $W \cdot m^{-1} \cdot K^{-1}$); 50 mm slightly ventilated low emissivity cavity (ε = 0.05) (580 $mm^2 \cdot m^{-1}$ opening area); variable thickness of Eurothane GP as external sheathing, secured using 5.6 fully-penetrating mild steel (λ = 50 $W \cdot m^{-1} \cdot K^{-1}$) fixings per m^2 with a cross-sectional area of 9.6 mm^2; breather membrane; 11 mm OSB sheathing board (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$); 140 mm thick timber frame bridging at 600 mm centres (15%, λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$); AVCL; and 15 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).

(5) See section 6.3.3.

6.3.2 On the basis of data assessed, the product can contribute towards a construction satisfying the national Building Regulations in respect of energy economy and heat retention.

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

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 the product were assessed.

8.2 Specific test data were assessed as given in Table 8.

Table 8 Durability

Product assessed	Assessment method	Requirement	Result
Eurothane GP	Dimensional stability to BS EN 1604 : 2013 (70°C and 90% RH for 48 hours)	Length and width ≤ 2% change Thickness ≤ 6% change	Pass

8.3 Service life

Under normal service conditions, the product will have a life equivalent to the structure in which it is incorporated, provided they 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 External framed cavity walls 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 845-1 : 2013
- BS EN 1995-1-1 : 2004 and its UK National Annex
- BS EN 1996-1-1 : 2005 and its UK National Annex
- BS EN 1996-1-2 : 2005 and its UK National Annex
- BS EN 1996-2 : 2006 and its UK National Annex
- BS EN 1996-3 : 2006 and its UK National Annex.

9.1.3 As with other forms of cavity wall insulation, where buildings need to comply with *NHBC Standards* 2024, specifiers must observe the requirements of that document.

9.1.4 Cavity wall ties with insulation-retaining fixings and, if required, any additional ties to BS EN 845-1 : 2013 must be used for structural stability in accordance with the principles of BS EN 1996-1-1 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006, and their UK National Annexes.

9.1.5 This application requires an AVCL behind the internal fire-resistant lining board, which must be a minimum thickness of 0.125 mm (500 gauge) polyethylene.

9.1.6 Care must be taken in the overall design and construction of walls incorporating the product to ensure the provision of appropriate:

- cavity trays and DPCs
- cavity barriers
- resistance to the ingress of precipitation, moisture and dangerous gases from the ground
- resistance to sound transmission when flanking separating walls and floors.

9.1.7 Provided that construction elements are designed and constructed to incorporate the precautions in this Certificate to prevent moisture penetration, the product will resist the transfer of precipitation to the inner leaf.

9.1.8 Window and door opening reveals must incorporate a cavity barrier/closer/DPC, as required.

9.1.9 Services which penetrate the dry lining (eg light switches, power outlets) must be kept to a minimum to limit damage to the AVCL. In addition, to preserve the fire resistance of the wall, any penetrations should be enclosed in a suitably tested proprietary fire-rated system.

9.1.10 As with other insulation products, it may be necessary in some cases to de-rate electrical cables buried in insulation. BS 7671 : 2018 recommends that where wiring is completely surrounded by insulation it may need to be de-rated to as low as half its free air-current-carrying capacity. Guidance should be sought from a suitably experienced and competent electrician.

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

9.1.12 Calculations of the thermal transmittance (U value) of a wall must be carried out in accordance with BS EN ISO 6946 : 2017 and BRE Report BR 443 : 2019.

9.1.13 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

9.1.14 Walls will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2021.

9.1.15 If the product is to be used in the external wall of rooms expected to have high humidity, care must be taken to provide adequate permanent ventilation to avoid possible problems from the formation of interstitial condensation.

Surface condensation

9.1.16 In England and Wales, walls will adequately limit the risk of surface condensation when 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 the guidance referred to in section 9.1.13 of this Certificate.

9.1.17 For buildings in Scotland, wall constructions will be acceptable when the thermal transmittance (U value) does not exceed 1.2 $W \cdot m^{-2} \cdot K^{-1}$ at any point, and the junctions with other elements are designed in accordance with the guidance referred to in BS 5250 : 2021. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 9.1.13 of this Certificate.

Buildings up to 18 metres high (see also section 2 of this Certificate)

9.1.18 The residual cavity width to be maintained during construction is 50 mm. This may reduce to 25 mm in isolated areas due to individual construction features (a minimum of 50 mm residual cavity width is required by the NHBC). This may be achieved by designing a cavity width which takes into account the dimensional tolerances of the components which make up the wall (by reference to the British Standards relating to the bricks, blocks and slabs), or by using the data from the respective manufacturers. Allowances may need to be made for the quality of the building operatives and the degree of site supervision or control available. The limitations in respect of exposure of the proposed buildings as set out in Table 9 must also be observed.

Table 9 Maximum allowable exposure index E(1)

Construction	Maximum allowable exposure factor *E*(1)
All external masonry walls protected by: rendering (to BS EN 13914-1 : 2016), tile or slate hanging, or timber, plastic or metal weatherboarding or cladding	No restriction
One or more external masonry walls constructed from facing clay brickwork, or natural stone, the porosity of which exceeds 20% by volume. Mortar joints must be flush pointed or weatherstruck	100
One or more external masonry walls constructed from calcium silicate bricks, concrete blocks, reconstituted stone, or natural stone, the porosity of which is less than 20% by volume, or any material with raked mortar joints	88

(1) To BS 5618 : 1985.

9.1.19 From ground level, the maximum height of continuous cavity walls must not exceed 12 metres; above 12 metres, the maximum height of continuous cavity walls must not exceed 7 metres. In both cases, breaks should be in the form of continuous horizontal cavity trays and weepholes discharging to the outside.

9.1.20 An external render coat or other suitable finish must be applied in locations where such application would be normal practice; care must be taken to ensure that the residual cavity is not bridged by mortar.

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 are provided in Annex A of this Certificate.

9.2.3 Installation must not be carried out until the moisture content of the timber-frame is less than 20% by mass.

Insulated sheathing

9.2.4 The inner timber frame must be constructed ahead of the outer leaf, as the boards are fastened to the cavity face of the frame. It is essential that the spacing of the wall ties/clips allows the long edge of each board to be secured at a minimum of three points.

9.2.5 Vertical joints in the boards must be staggered and all joints tightly butted. Where protrusions occur in the cavity, the boards must be carefully cut to fit.

9.2.6 It is essential to have a tight fit between the boards and the adjoining studs and other timbers, and all gaps must be filled with expanding urethane sealant.

9.2.7 If installation of the boards is terminated below the highest level of the wall, the top edge of the insulation must be protected by a cavity tray and alternate perpend joints of the masonry outer leaf are raked out, to provide adequate drainage of water from the tray.

9.2.8 In all situations, it is particularly important to ensure during installation that:

- installation is carried out to the highest level on each wall, or the top edge of the insulation is protected by a cavity tray
- cavity trays are used with appropriate stop ends and weep holes at lintel level
- cavity battens and/or boards are used during construction to prevent bridging by mortar droppings
- wall ties are installed correctly and are thoroughly clean
- excess mortar is cleaned from the cavity face of the leading leaf and any debris removed from the cavity
- mortar droppings are cleaned from the exposed edges of installed boards

- insulation boards are properly installed and wither butted joints, or interlocked using the tongue and groove or rebated edges
- the DPC at ground level does not project into the cavity as they can form a trap for mortar bridging
- raked or recessed mortar joints are avoided in very severe exposure areas.

9.3 Workmanship

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

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 in packaging bearing the product description and characteristics, CE marking information, batch number, manufacturing/packaging date, 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 protected from prolonged exposure to sunlight and should be stored either under cover or protected with opaque polythene sheeting. Packs should be stored inside. Outside, the product must be stacked flat and raised above ground level and not in contact with ground moisture.

11.2.2 Some handling difficulties may be experienced in windy conditions. Care must be exercised to avoid crushing the edges or corners. If damaged, the product must not be used.

11.2.3 The product must not be exposed to open flame or other ignition sources, or to solvents or other chemicals.

†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.

CE marking

The Certificate holder has taken the responsibility of CE marking the product, in accordance with harmonised European Standard EN 13165 : 2012.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of ISO 9001 : 2015 and ISO 14001 : 2015 by Lloyd's Register Quality Assurance (Certificates 00008940 and 00005756 respectively).

Additional information on installation

General

A.1 The product can be cut easily using a sharp knife or a fine-toothed saw; care must be taken in handling the product to prevent damage, particularly at edges.

Procedure

Between studs

A.2 The product should be cut to fit tightly between the timber studding and positioned against the inner face of the sheathing board. Any gaps should be filled with expanding insulation foam. The insulation should be held in place by nails or timber battens to the warm side of the insulation.

A.3 The void created by the space between the inner surface of the product and the dry lining can be utilised as an insulated service duct.

A.4 A sealed polythene AVCL with a minimum thickness of 0.125 mm (500 gauge) and lapped and sealed joints is placed over the stud face before applying the internal finish.

Over studs (as insulated dry lining)

A.5 The product should be cut to fit snuggly between the timber studding.

A.6 A maximum 25 mm thick Eurothane GP Timber Frame Board is temporarily fixed to the inner face of the timber studding, ensuring that the insulation makes contact or overlaps with ceiling and floor insulation.

A.7 The line of the timber studs is marked on the product to allow fixing of vertical timber battens and plasterboard.

A.8 The product is butted tightly against itself to prevent gaps. Taping the joints with a durable acrylic adhesive foil tape provides an effective AVCL and an air permeability barrier. To achieve an adequate bond, the product must be thoroughly clean and free from any contamination.

A.9 The product is sealed at all service penetrations.

A.10 Plasterboard is fixed to vertical timber battens (50 mm wide by 25 mm thick) and secured with 38 mm screws at maximum 300 mm centres and finished as normal. The battens are secured through the insulation to each stud at maximum 300 mm centres using screws which penetrate the timber studs by at least 25 mm.

Over studs (as sheathing insulation)

A.11 The product should be installed on the outside of the OSB sheathing board, closely butted and with joints staggered. Galvanised clout nails or screws can be used as temporary fixings. A breather membrane is installed between the OSB sheathing board and the sheathing insulation.

A.12 It is critical that fixings locate the studwork. This can be done with a plumbline from the top of the stud or by marking the stud position on the boards as they are offered into position. Wall ties securing the external leaf are fixed through the insulation to the studs and the sheathing is held in place by retaining disc or clips on the wall ties.

A.13 Internal finishes are applied as normal (see section A.4).

Bibliography

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

BRE Report BR 443 : 2019 *Conventions for U-value calculations*

BS 476-21 : 1987 *Fire tests on building materials and structures — Methods for determination of the fire resistance of loadbearing elements of construction*

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

BS 5618 : 1985 *Code of practice for thermal insulation of cavity walls (with masonry or concrete inner and outer leaves) by filling with urea-formaldehyde (UF) foam systems*

BS 7671 : 2018 *Requirements for Electrical Insulations — IET Wiring Regulations*

BS 8000-3 : 2020 *Workmanship on building sites — Code of practice for masonry*

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 845-1 : 2013 + A1 : 2016 *Specification for ancillary components for masonry — Wall ties, tension straps, hangers and brackets*

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

BS EN 1995-1-1 : 2004 + A2 : 2014 *Eurocode 5 : Design of timber structures — General — Common rules and rules for buildings*
NA to BS EN 1995-1-1 : 2004 + A2 : 2014 *UK National Annex to Eurocode 5 : Design of timber structures — General — Common rules and rules for buildings*

BS EN 1996-1-1 : 2005 + A1 : 2012 *Eurocode 6 : Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
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*
BS EN 1996-1-2 : 2005 *Eurocode 6 : Design of masonry structures — General rules — Structural fire design*
NA to BS EN 1996-1-2 : 2005 *UK National Annex to Eurocode 6 : Design of masonry structures — General rules — Structural fire design*
BS EN 1996-2 : 2006 *Eurocode 6 : Design of masonry structures — Design considerations, selection of materials and execution of masonry*
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*
BS EN 1996-3 : 2006 *Eurocode 6 : Design of masonry structures : Simplified calculation methods for unreinforced masonry structures*
NA to BS EN 1996-3 : 2006 + A1 : 2014 *UK National Annex to Eurocode 6 : Design of masonry structures : Simplified calculation methods for unreinforced masonry structure*s

BS EN 12086 : 1997 *Thermal insulating products for building applications — Determination of water vapour transmission properties*

BS EN 13165 : 2012 + A2 : 2016 *Thermal insulation products for buildings — Factory made rigid polyurethane foam (PU) products — Specification*

BS EN 13501-1 : 2007 + A1 : 2009 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

BS EN 13914-1 : 2016 *Design, preparation and application of external rendering and internal plastering — External rendering*

BS EN 16012 : 2012 + A1 : 2015 *Thermal insulation for buildings — Reflective insulation products — Determination of the declared thermal performance*

BS EN ISO 6946 : 2017 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*

BS EN ISO 10456 : 2007 *Building materials and products — Hygrothermal properties — Tabulated design values and procedures for determining declared and design thermal values*

BS EN ISO 29767 : 2019 *Thermal insulating products for building applications — Determination of short-term water absorption by partial immersion*

ISO 9001 : 2015 *Quality management systems — Requirements*

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

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
- 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
- and any matter arising out of or in connection with it or its subject matter (including non-contractual disputes or claims) is governed by and construed in accordance with the law of England and Wales.
- the courts of England and Wales shall have exclusive jurisdiction to settle any matter arising out of or in connection with this Certificate or its subject matter (including non-contractual disputes or claims).

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.