



## **How Eurothane PIR insulation meets**

### **AS/NZS 4859.1.2002**

#### **Materials for Thermal Insulation of Buildings.**

##### **Section 1.1 Scope**

Specific requirements for individual materials or insulation type are given in section 5 – 9 of this standard and in **AS 1366.2 Rigid cellular polyisocyanurate (RC / PIR)**

**AS/NZS 4859.1.2002** Section 5 N/A

Section 6 N/A

Section 7 N/A

Section 8 N/A

Section 9 N/A

##### **AS 1366.2**

Appendix A Methods of Demonstrating compliance with this standard:-

**A1 Scope (C)** - Assurance using the acceptability of the suppliers quality system

##### **A4 Suppliers Quality System**

“Where the manufacturers or suppliers can demonstrate an audited and registered quality management system complying with the requirements of the appropriate or stipulated Australian or International Standard for supplier’s quality systems, this may provide the necessary confidence that the specified requirements will be met.”

Please find attached:

ISO 14001, ISO 9001, Declaration of Performance, Agreement Certificate

# Certificate of Approval

This is to certify that the Management System of:

## Recticel Limited

Enterprise Way, Meir Park, Stoke on Trent, ST3 7UN, United Kingdom

has been approved by LRQA to the following standards:

ISO 14001:2015



David Derrick

Issued By: Lloyd's Register Quality Assurance Ltd

Current Issue Date: 7 July 2017  
Expiry Date: 30 November 2019  
Certificate Identity Number: 10021917

Original Approvals:  
ISO 14001 – 1 December 2010

Approval Number(s): ISO 14001 – 00005756

The scope of this approval is applicable to:  
Manufacture of PU/PIR panels for thermal insulation.



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# Certificate of Approval

This is to certify that the Management System of:

**Recticel N.V.**

**Trading As: Business Line Insulation**

Zuidstraat 15, 8560 Wevelgem, Belgium

has been approved by LRQA to the following standards:

ISO 9001:2015



P.G. Cornelissen

Issued By: Lloyd's Register EMEA for and on behalf of: Lloyd's Register Quality Assurance Ltd

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

**Current Issue Date:** 1 November 2017

**Expiry Date:** 31 October 2020

**Certificate Identity Number:** 10032129

**Original Approvals:**

ISO 9001– 8 November 1996

Approval Number(s): ISO 9001 –00008940

The scope of this approval is applicable to:

**Development and manufacturing of polyurethane panels for thermal insulation.**



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# Certificate Schedule

Certificate Identity Number: 10032129

Locations	Activities
Recticel N.V. Zuidstraat 15, 8560 Wevelgem, Belgium	ISO 9001:2015 Development and manufacturing of polyurethane panels for thermal insulation.
Recticel N.V. 1 Rue Ferdinand de Lesseps, 18000 Bourges, France	ISO 9001:2015 Development and manufacturing of polyurethane panels for thermal insulation.
Recticel N.V. Enterprise Way Meir Park, Stoke-on-Trent, ST3 7UN, United Kingdom	ISO 9001:2015 Development and manufacturing of polyurethane panels for thermal insulation.



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## Recticel Insulation Products

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Agrément Certificate

02/3905

Product Sheet 3

### EUROTHANE GP

### EUROTHANE GP TIMBER FRAME BOARD

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Eurothane GP Timber Frame Board, rigid polyisocyanurate foam board with a composite foil-facing on both sides for use between studding, or as an insulated lining, or as an insulated sheathing over new or existing walls of conventional timber-frame dwellings or similar buildings with a masonry outer leaf.

(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.

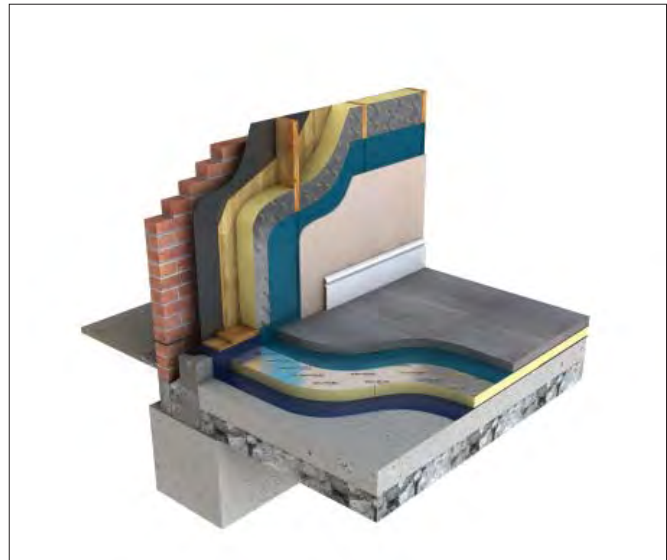
#### KEY FACTORS ASSESSED

**Thermal performance** — the product has a declared thermal conductivity ( $\lambda_D$  value) of  $0.022 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$  and the foil-facing has an emissivity value of 0.05 (see section 6).

**Condensation** — the insulation core has a water vapour resistivity of approximately  $300 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1}\cdot\text{m}^{-1}$  and each foil-facing has a high water vapour resistance of  $4000 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1}$ , but the risk of interstitial condensation will depend on the wall construction and should be assessed for each project (see section 7).

**Behaviour in relation to fire** — certain applications incorporating the product can achieve a fire resistance of up to 30 minutes when tested to BS 476-21 : 1987 (see section 8).

**Durability** — the product is durable, rot-proof and sufficiently stable and will remain effective as an insulating material for the life of the roof structure in which it is incorporated (see section 14).



The BBA has awarded this Certificate to the company named above for the product described herein. The 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

John Albon — Head of Approvals  
Energy and Ventilation

Claire Curtis-Thomas  
Chief Executive

Date of Second issue: 17 October 2013

Originally certificated on 22 March 2002

*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 are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.*

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# Regulations

In the opinion of the BBA, Eurothane GP Timber Frame Board, if used in accordance with this Certificate, will meet or contribute to meeting 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)

Requirement:	C2(c)	Resistance to moisture
Comment:		The product can contribute to satisfying this Requirement. See sections 7.1 and 7.4 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	Materials and workmanship
Comment:		The product is acceptable. See section 14 and the <i>Installation</i> part of this Certificate.
Regulation:	26	CO <sub>2</sub> emission rates for new buildings
Comment:		The product is acceptable. See section 6 of this Certificate.



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

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The product can contribute to a construction satisfying this Regulation. See section 14 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	3.15	Condensation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.15.1 <sup>(1)(2)</sup> , 3.15.4 <sup>(1)(2)</sup> and 3.15.5 <sup>(1)(2)</sup> . See sections 7.1 and 7.5 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying clauses, or parts of clauses, 6.1.6 <sup>(1)</sup> , 6.2.1 <sup>(1)(2)</sup> , 6.2.3 <sup>(1)</sup> , 6.2.4 <sup>(2)</sup> , 6.2.5 <sup>(2)</sup> , 6.2.9 <sup>(1)</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>(1)(2)</sup> of these Standards. 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 <sup>(1)(2)</sup> [Aspects 1 <sup>(1)(2)</sup> and 2 <sup>(1)</sup> ], 7.1.6 <sup>(1)(2)</sup> [Aspects 1 <sup>(1)(2)</sup> and 2 <sup>(1)</sup> ] and 7.1.7 <sup>(1)(2)</sup> [Aspect 1 <sup>(1)(2)</sup> ]. See section 6.1 of this Certificate.
Regulation:	12	Building standards applicable to conversions
Comment:		Comments made in relation to this product under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)</sup> and Schedule 6 <sup>(1)</sup> . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



## The Building Regulations (Northern Ireland) 2012

Regulation:	23	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 14 and the <i>Installation</i> part of this Certificate.
Regulation:	29	Condensation
Comment:		Walls incorporating the product can satisfy this Regulation. See section 7.1 of this Certificate.
Regulation:	39(a)(i)	Conservation measures
Regulation:	40(2)	Target carbon dioxide emission rate
Comment:		The product can contribute to satisfying these Regulations. See section 6 of this Certificate.

## Construction (Design and Management) Regulations 2007

## Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.3) of this Certificate.

# Additional Information

## NHBC Standards 2013

NHBC accepts the use of Eurothane GP Timber Frame Board, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.2 *External timber framed walls*.

# Technical Specification

## 1 Description

- 1.1 Eurothane GP Timber Frame Board is a rigid polyisocyanurate foam board with a composite foil-facing on both sides.
- 1.2 The product is either fixed between studding, or as an insulated dry lining or insulated sheathing facing the cavity.
- 1.3 The product has the nominal characteristics as shown in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Length (mm)	2400
Width (mm)	1200
Thickness (mm)	30 to 200 (in 5 mm increments)
Minimum compressive strength at 10% compression (kPa)	140
Edge profile	Plain

## 2 Manufacture

- 2.1 Raw materials are injected onto the lower foil-facing on a conveyor belt. The exothermic reaction expands the foam, which then comes into contact with the upper foil-facing. An automated process cures and cuts the product to the required size.
- 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 system of Recticel Insulation Products has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by Lloyd's Register Quality Assurance (Certificate ANT951267.1).

## 3 Delivery and site handling

- 3.1 The product is delivered to site shrink-wrapped in polythene packs containing a label bearing the product description and characteristics, the manufacturer's name, and the BBA logo incorporating the number of this Certificate.
- 3.2 It is essential that the product is stored such that it is raised off the ground, is inside or under cover on a flat, dry, level surface in a well-ventilated area. The product must be protected from rain, snow and prolonged exposure to sunlight. Products that have been allowed to get wet or are damaged must not be used. Nothing should be stored on top of the products.
- 3.3 The product must not be exposed to a naked flame or other ignition sources. The product must not be exposed to solvents or other chemicals.

# Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Eurothane GP Timber Frame Board.

## Design Considerations

### 4 General

- 4.1 Eurothane GP Timber Frame Board is effective in reducing the U value (thermal transmittance) of external walls of timber-frame dwellings. It is essential that such walls are designed and constructed to incorporate the normal precautions against moisture ingress, including a breather membrane over the timber sheathing.
- 4.2 New buildings subject to the national Building Regulations should be designed in accordance with the relevant recommendations of BS EN 1995-1-1 : 2004, BS 5589 : 1989 and BS EN 351-1 : 1996.

4.3 Constructions incorporating a masonry outer leaf (includes masonry units and natural stone blocks) should be in accordance with BS EN 1996-1-1 : 2005 and BS EN 1996-2 : 2006. The designed residual cavity width should be 50 mm.

4.4 It is recommended that services which penetrate the dry lining, eg light switches, power outlets, are kept to a minimum to limit damage to vapour checks. In addition, any penetrations should be either enclosed in plasterboard or stone mineral wool or a suitably tested proprietary fire-rated system to preserve the fire resistance of the wall.

4.5 Installation must not be carried out until the moisture content of the timber frame is less than 20%.

4.6 The product, when used as insulated sheathing, will not contribute to the structural performance of the timber frame.

4.7 Installation of plasterboard must be in accordance with the relevant sections of BS 8212 : 1995.

## 5 Practicability of installation

The product is designed to be installed by a competent general builder, or a contractor, experienced with this type of product.

## 6 Thermal performance


 6.1 Calculations of the thermal transmittance (U value) should be carried out in accordance with BS EN ISO 6946 : 2007 and BRE Report BR 443 : 2006 using the declared thermal conductivity ( $\lambda_D$  value) of 0.022 W·m<sup>-1</sup>·K<sup>-1</sup> for the product and a foil surface emissivity ( $\epsilon$ ) of 0.05. The U value of a completed wall will depend on the selected insulation thickness, the insulating value of the external substrate masonry and the internal finish. When considering insulation requirements, designers should refer to the detailed guidance contained in the documents supporting the national Building Regulations. The U values shown in Table 2 indicate that the product can contribute to a wall achieving typical design U values referred to in those supporting documents.

Table 2 U values<sup>(1)</sup>

Stud size (mm)	Eurothane GP Timber Frame Board between studs (mm) <sup>(2)</sup>	U Value (W·m <sup>-2</sup> ·K <sup>-1</sup> )
140	50	0.35
140	70	0.30
140	80	0.28
140	85	0.27
140	95	0.25
140	110	0.23
140	120	0.22
200	140	0.19

(1) Typical timber-frame construction comprising 102 mm brick leaf, 50 mm unventilated air cavity, 13 mm sheathing board, 15% timber studs, 12.5 mm plasterboard and 3 mm plaster.

(2) Nearest available thickness.

6.2 The product can contribute to maintaining continuity of thermal insulation at junctions between elements and openings. For Accredited Construction Details the corresponding  $\psi$ -values (psi) in *BRE Information Paper IP 1/06*, Table 3, may be used in carbon emission calculations in Scotland and Northern Ireland. Detailed guidance for other junctions and on limiting heat loss by air infiltration can be found in:


**England and Wales** — Approved Documents to Part L and for new thermal elements to existing buildings, Accredited Construction Details (version 1.0). For new build, see also SAP 2009 *The Government's Standard Assessment Procedure for Energy Rating of Dwellings*, Appendix K, and the *iSBEM User Manual*

**Scotland** — Accredited Construction Details (Scotland)

**Northern Ireland** — Accredited Construction Details (version 1.0).

## 7 Condensation

### Interstitial condensation

 7.1 Walls will limit the risk of interstitial condensation adequately when they are designed and constructed in accordance with BS 5250 : 2011, Annexes D and G and the relevant guidance. A vapour control layer (VCL) must be used.

7.2 For the purposes of assessing the risk of interstitial condensation, the insulation core vapour resistivity may be taken as approximately 300 MN·s·g<sup>-1</sup>·m<sup>-1</sup> and a resistance value of 4000 MN·s·g<sup>-1</sup> for each individual foil-facing.

7.3 The joints between the installed product when used as insulated sheathing, must not be taped. If the product is to be used in the external walls 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 in the wall.



## Surface condensation



7.4 Walls will limit the risk of surface condensation adequately when the thermal transmittance (U value) does not exceed  $0.7 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$  at any point, and the junctions with floors, roofs and openings are designed in accordance with *Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings* TSO 2002, BRE Information Paper IP 1/06 or section 6.2 of this Certificate.



7.5 For buildings in Scotland, constructions will be acceptable where the thermal transmittance (U value) of the wall does not exceed  $1.2 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$  at any point and openings and junctions with other elements comply with the guidance given in Annex G of BS 5250 : 2011 or section 6.2 of this Certificate. Additional guidance can be found in BRE Report BR 262 : 2002.

## 8 Behaviour in relation to fire

8.1 The product is combustible and a fire-resistance test was carried out on a wall incorporating the product in accordance with BS 476-21 : 1987 on a loadbearing, timber stud wall system. An assessment considered the likely fire resistance of four systems (constructions described in section 8.2) as if they had been tested to 476-21 : 1987. The main points of the assessment highlighted that:

- all four systems 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)]. A suitably qualified structural engineer must ensure that the stress applied to the studs in practice must not exceed the stress applied to the tested studs
- the internal leaf comprises of gypsum plasterboard, at least 12.5 mm thick, manufactured in the United Kingdom by Lafarge, British Gypsum or Knauf Drywall. The plasterboard must be secured in accordance with the manufacturer's instructions
- 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 noggings at maximum 1200 mm centres. The noggings between each pair of studs are staggered by 60 mm from the noggings in the adjacent pair of studs
- openings for doors and windows should be framed out and any exposed timber covered with at least one layer of plasterboard (see also section 4.4).

8.2 The four systems are:

### System 1 — Eurothane GP Timber Frame Board between studs only

- outer brick leaf
- nominal 50 mm air cavity
- breather membrane
- sheathing board — OSB or similar, at least 9 mm thick
- 30 mm to 200 mm thick Eurothane GP Timber Frame Board between the studs, retained using timber battens, nominal 35 mm by 25 mm, secured to the sides of the studs
- VCL
- 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 air cavity
- 30 mm 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
- 30 mm to 200 mm thick Eurothane GP Timber Frame Board between the studs, retained using timber battens, nominal 35 mm by 25 mm, secured to the sides of the studs
- VCL
- 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 air cavity
- breather membrane
- sheathing board — OSB or similar, at least 9 mm thick
- 30 mm to 200 mm thick Eurothane GP Timber Frame Board between the studs, retained using timber battens, nominal 35 mm 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
- VCL (optional). Taping the insulation board joints with a foil tape to create a VCL
- 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 air cavity
- 30 mm to 200 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
- VCL
- 12.5 mm gypsum plasterboard.

8.3 Cavity barriers must be provided to comply with:

**England and Wales** — Approved Document B, Volume 1, Section 6, and Volume 2, Section 9

**Scotland** — Mandatory Standard 2.4, clauses 2.4.1<sup>(1)(2)</sup>, 2.4.2<sup>(1)(2)</sup>, 2.4.7<sup>(1)</sup> and 2.4.9<sup>(2)</sup>

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

**Northern Ireland** — Technical Booklet E, paragraphs 3.35 to 3.38.

## **9 Proximity of flues and appliances**

When installing the product in close proximity to certain flue pipes and/or heat-producing appliances, the following provisions to the national Building Regulations are applicable:

**England and Wales** — Approved Document J, sections 1 to 4

**Scotland** — Mandatory Standard 3.19, clauses 3.19.1<sup>(1)(2)</sup> to 3.19.9<sup>(1)(2)</sup>

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

**Northern Ireland** — Technical Booklet L, sections 1 to 4.

## **10 Weathertightness**

Constructions incorporating the product and built in accordance with sections 4.2 and 4.3 will resist the transfer of precipitation to the inner leaf and satisfy the national Building Regulations:

**England and Wales** — Requirement C2(b)(c)

**Scotland** — Mandatory Standard 3.10, clause 3.10.5<sup>(1)(2)</sup>

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

**Northern Ireland** — Regulation C4.

## **11 De-rating of electrical cables**

As with other insulation products, it may be necessary in some cases to de-rate electrical cables buried in insulation. In BS 7671 : 2008 it is suggested 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 qualified electrician.

## **12 Infestation**

Use of the product does not in itself promote infestation. The creation of voids within the structure may provide habitation for insects or vermin in areas already infested. Care should be taken to ensure, wherever possible, that all voids are sealed, as any infestation may be difficult to eradicate. There is no food value in the materials used.

## **13 Maintenance**

As the product is confined behind the wall lining and it has suitable durability (see section 14), maintenance is not required.

## **14 Durability**



The board is rot proof, stable and durable and will have a life equivalent to that of the wall structure in which it is incorporated.

### 15 General

15.1 Installation of the product should be in accordance with the Certificate holder's instructions and current good building practice.

15.2 The product is light to handle, and cut easily but care must be taken to prevent damage, particularly at edges.

#### Between studs

15.3 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.

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

15.5 A sealed polythene VCL 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)

15.6 The product should be cut to fit snugly between the timber studding.

15.7 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 over laps with ceiling and floor insulation.

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

15.9 The product is butted tightly against each other to prevent gaps. Taping the joints with a durable acrylic adhesive foil tape provides an effective VCL and an air permeability barrier. To achieve an adequate bond, the product should be thoroughly clean and free from any contamination.

15.10 The product is sealed at all service penetrations.

15.11 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)

15.12 The Eurothane GP Timber Frame Board is fixed outside the breather membrane on the external surface and fixed with galvanized clout nails at 300 mm centres around the perimeter of the board and at 400 mm centres along any intermediate timbers.

15.13 The product is closely butted and joints are staggered.

15.14 The outer face of the product must not be taped.

15.15 Helical stainless steel wall ties are driven through the insulation into the timber studs ensuring that they slope down toward the outer leaf.

15.16 Internal finishes are applied as normal (see section 15.5).

## Technical Investigations

### 16 Tests

Tests were carried out on Eurothane GP Timber Frame Board by the BBA in accordance with BS EN 13165 : 2008 to determine:

- dimensional stability
- compressive strength
- thermal conductivity
- compressive creep.

### 17 Investigations

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

17.2 An assessment was made of the results of test data to BS EN 13165 : 2008 in relation to:

- dimensions
- density
- $\lambda$  value.

17.3 An assessment of the risk of interstitial condensation was made.

17.4 An assessment was made of typical constructions which achieve the design U values.

## Bibliography

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

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

BS 5589 : 1989 *Code of practice for preservation of timber*

BS 7671 : 2008 *Requirements for electrical installations. IEE Wiring Regulations. Seventeenth Edition*

BS 8212 : 1995 *Code of practice for dry lining and partitioning using gypsum plasterboard*

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

BS EN 1996-1-1 : 2005 *Eurocode 6 : Design of masonry structures — General rules for reinforced and unreinforced masonry structures*

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

BS EN 13165 : 2008 *Thermal insulation products for buildings — Factory made rigid polyurethane foam (PUR) products — Specification*

BS EN ISO 6946 : 2007 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

BRE Information Paper IP 1/06 *Assessing the effects of thermal bridging at junctions and around openings*

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

BRE Report (BR 443 : 2006) *Conventions for U-value calculations*

## 18 Conditions

18.1 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.

18.2 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.

18.3 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.

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

18.5 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.

18.6 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.

# DECLARATION OF PERFORMANCE

No.: **64681-a-CPR\_2013.04.1**

1.	Unique identification code of the product-type	<b>64681 – PU Rigid board gastight facing</b>
2.	Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4)	<b>See CE mark label and marking on boards</b>
3.	Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer	<b>Thermal insulation for buildings</b>
4.	Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5)	<b>Eurothane GP Recticel Ltd. Enterprise Way, Meir Park Stoke-on-Trent, ST3 7UN UK</b>
5.	Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2)	<b>Not relevant</b>
6.	System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V	<b>AVCP 3</b>
7.	In case of the declaration of performance concerning a construction product covered by a harmonised standard	<b>EN 13165:2012 Notified testing laboratory No. NB 0836 performed the test reports on the declared characteristics under system AVCP 3.</b>
8.	In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued	<b>Not relevant</b>

## 9. Declared performance

Essential characteristics	Performance (The letters 'NPD' (No Performance Determined) are indicated where no performance is declared.)		Harmonised technical specification
Reaction to fire	Reaction to fire	F	<b>EN 13165: 2012</b>
Reaction to fire – end use	Reaction to fire – end use	NPD	
Thermal resistance	Thermal resistance ( $R_D$ in $m^2K/W$ )	1,35 for $d_N$ 30mm 7,25 for $d_N$ 160mm	
	Thermal conductivity ( $\lambda_D$ in $W/mK$ )	0,022	
Thickness	$d_N$ : 30-160 mm	T2	
Length and width	< 1000 mm	$\pm$ 5 mm	
	1001 to 2000 mm	$\pm$ 7,5 mm	
	2001 to 4000 mm	$\pm$ 10 mm	
	> 4000 mm	$\pm$ 15 mm	
Squareness	$\leq$ 5 mm/m		
Flatness	Length:	$\leq$ 2,50 m	
	Area $\leq$ 0,75 m <sup>2</sup> : Area > 0,75 m <sup>2</sup> :	Deviation $\leq$ 5 mm Deviation $\leq$ 10 mm	
Compressive strength	CS(10/Y)140		
Tensile strength/shear behaviour	Tensile strength perpendicular to faces:	NPD	
	Shear strength:	NPD	
	Shear modulus:	NPD	
Water permeability	Water absorption		
	- short term by partial immersion	NPD	
	- long term by partial immersion	NPD	
	- long term by total immersion	NPD	
	Flatness after one-sided wetting	NPD	
Water vapour permeability	Water vapour transmission	NPD	
Acoustic absorption index	Sound absorption	NPD	
Direct airborne sound insulation index	Sound absorption	NPD	
Continuous glowing combustion	No harmonized test method available		
Release of dangerous substances to the indoor environment	No harmonized test method available		
Durability of reaction to fire against heat, weathering, ageing / degradation	Reaction to fire does not change with time		
Durability of thermal resistance against heat, weathering, ageing/degradation	Dimensional stability under specified temperature and humidity conditions	NPD	
	Deformation under specified compressive load and temperature conditions	NPD	
	Ageing method	C.4	
	Compressive creep	NPD	
Durability of compressive strength against ageing/degradation			

Where pursuant to Article 37 or 38, the Specific Technical Documentation has been used, the requirements with which the product complies:

**Not relevant**

10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

**Wim Giebens**

Industrial Manager Recticel Building Insulation

Wevelgem, 07<sup>th</sup> may 2013