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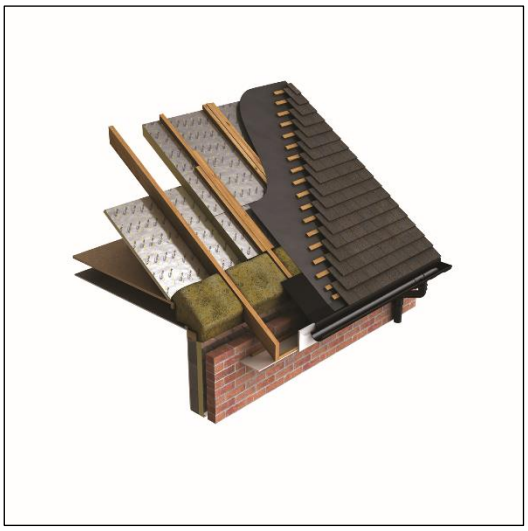
Agrément Certificate
24/7254
Product Sheet 1 Issue 1

EUROTHANE GP

EUROTHANE GP PITCHED ROOF INSULATION

This Agrément Certificate Product Sheet(1) relates to Eurothane GP Pitched Roof Insulation, comprising a rigid polyisocyanurate (PIR) foam board with a multilayer foil facing on both sides, for use as insulation installed above, between and/or below rafters in tiled or slated pitched roofs of less than 70° pitch, in new and existing domestic and non-domestic buildings.

(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: 25 September 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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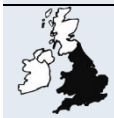
SUMMARY OF ASSESSMENT AND COMPLIANCE

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 Eurothane GP Pitched Roof Insulation, 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:	**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:	**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:	**9**	**Building standards – construction**
Standard:	3.15	Condensation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.15.1(1)(2), 3.15.3(1)(2), 3.15.4(1)(2), 3.15.5(1)(2) and 3.15.7(1)(2). 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 clauses 6.1.1(1) and 6.1.2(2); 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, or parts of 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(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 7.1.4(1), 7.1.6(1)(2), 7.1.7(1), 7.1.9(2) and 7.1.10(2). See section 6 of this Certificate.
Regulation:	**12**	**Building standards – conversion**
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(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) (iii)(b)(i)(ii)**	**Fitness of materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**29**	**Condensation**
Comment:		The product can contribute to satisfying this Regulation. See section 3 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/service measures may be required. See section 6 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, Eurothane GP Pitched Roof Insulation, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 7.2 *Pitched roofs*.

Fulfilment of Requirements

The BBA has judged Eurothane GP Pitched Roof Insulation to be satisfactory for use as described in this Certificate. The product has been assessed for use as insulation within tiled or slated pitched roofs of less than 70° pitch, in new and existing domestic and non-domestic buildings.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. Eurothane GP Pitched Roof Insulation 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 obtained 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:

- tile or slate roof finish
- roof tile underlay
- treated timber battens/rafters
- air and vapour control layer (AVCL)
- fixings
- aluminium foil tape
- gypsum plasterboard lining.

Applications

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

- above sloping rafters
- above and between sloping rafters
- between sloping rafters
- between and below sloping rafters.

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

Data were assessed for the following characteristic.

1.1 Behaviour under loading

The compressive strength of the product was assessed and the results are given in Table 2.

Table 2 Compressive strength

Product assessed	Assessment method	Requirement	Result
Eurothane GP	BS EN 826 : 1996	Declared value	
< 50 mm thick		CS(10) > 120 kPa	Pass
50 – 160 mm thick		CS(10) > 140 kPa	Pass

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 achieved is given in Table 3.

Table 3 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 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 construction.

2.2 Resistance to fire

Once installed, except for non-habitable loft application, 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 rafters, noggins, or battens.

3 Hygiene, health and the environment

Data were assessed for the following characteristic.

3.1 Water vapour permeability

3.1.1 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 $MN \cdot s \cdot g^{-1}$

3.1.2 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	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 roof will depend on the insulation thickness, the number and type of fixings, the roof structure, and its internal finish. Example U values are given in Table 7.

Table 7 Example U values — pitched roof

Target U value ($W \cdot m^{-2} \cdot K^{-1}$)	Eurothane GP insulation thickness (mm)		
	Over rafters(1)	Between rafters(2)	Between and under rafters(3)
0.09	—(5)	—(5)	150 + 145(4)
0.11	—(5)	—(5)	150 + 95(4)
0.12	—(5)	—(5)	130 + 95(4)
0.13	160	—(5)	120 + 85(4)
0.15	135	—(5)	100 + 80
0.16	125	—(5)	100 + 70
0.18	110	—(5)	100 + 50
0.20	100	160(4)	100 + 40

(1) Pitched roof construction — concrete tiles on 25 mm timber tile battens (well-ventilated) on low-resistance (LR) breather membrane; insulation secured with 11 fixings per m^2 – stainless steel (λ = 17 $W \cdot m^{-1} \cdot K^{-1}$) with a cross-sectional area of 9 mm^2, on 47 by 150 mm timber rafters (11.75%; λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$) with a low-e ($\varepsilon_D$ = 0.05) air cavity between the timbers; AVCL; and 12.5 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).

(2) Pitched roof construction — concrete tiles on 25 mm timber tile battens (well-ventilated) on sarking felt; 50 mm well-ventilated cavity above the insulation fitted tightly between the 47 by 150 mm timber rafters (11.75%; λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$); AVCL; and 12.5 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).

(3) Pitched roof construction — concrete tiles on 25 mm timber tile battens (well-ventilated) on sarking felt; 50 mm well-ventilated cavity above the insulation fitted tightly between the 47 by 150 mm timber rafters (11.75%; λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$); insulation below rafters secured with 14.58 fixings per m^2 – mild steel (λ = 50 $W \cdot m^{-1} \cdot K^{-1}$) with a cross-sectional area of 10.46 mm^2; AVCL; and 12.5 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$).

(4) With additional timber battens (λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$) added beneath the 150 mm rafters, to maintain a 50 mm ventilated cavity above the insulation.

(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 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, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 Roofs must be designed and constructed in accordance with the relevant clauses of BS 5250 : 2021, BS 5534 : 2014, BS 8212 : 1995 and BS EN 1995-1-1 : 2004 and its UK National Annex.

9.1.3 Design wind loading will depend largely on the building geometry and its geographical location and must be calculated by a suitably experienced and competent individual in accordance with principles of BS EN 1991-1-4 : 2005 and its UK National Annex. Snow loadings must be calculated in accordance with the principles of BS EN 1991-1-3 : 2003 and its UK National Annex.

9.1.4 The advice of the Certificate holder and fixing manufacturer must be sought on the use of the correct proprietary fixings and fixing capacity but such advice is outside the scope of this Certificate. When considering this and calculating the fixing spacing required to resist the calculated loadings, the requirements of BS EN 1995-1-1 : 2004 and its National Annex must be followed by a suitably experienced and competent individual.

9.1.5 Vapour permeable roof tile underlays used in conjunction with the product must have a current BBA Certificate and must be used in accordance with, and within the limitations of, that Certificate.

9.1.6 It is essential that detailing and jointing of the boards achieves a convection-free envelope of high vapour resistance. Any gaps must be filled and/or taped. Ridges, abutments and penetrations must also be sealed. Flue pipes passing through the insulation must be suitably sleeved.

9.1.7 A ventilated air space of minimum depth 25 mm may be required between the underside of the roof tile underlay (at the lowest point of the maximum allowable 15 mm drape) and the upper face of the insulation board, dependent on the specification of the roof tile underlay used (see section 9.1.11).

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

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 and the detailed guidance can be found in the documents supporting the national Building Regulations must be followed.

Interstitial condensation

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

9.1.11 When installed with tightly butted joints and filled/sealed gaps and joints, the product will provide a continuous convection-free envelope of high vapour resistance. Therefore, a suitable vapour-permeable [low resistance (LR)] roof tile underlay may be laid over the insulation boards without ventilated air space, unless the tiles/slates are tight fitting as defined in BS 5250 : 2021. When using a high resistance (HR) underlay, the space below it must be ventilated in accordance with BS 5250 : 2021 with a minimum 25 mm air gap between the top of the insulation board and the lowest point of the maximum allowable 15 mm roof underlay drape.

9.1.12 Where the product is installed in a roof with either a horizontal or sloping ceiling (ie room-in-the-roof), a warm roof space is created and ventilation must be designed in accordance with BS 5250 : 2021. However, any insulation in a horizontal ceiling must be removed.

9.1.13 Where high humidity may be expected, an AVCL with sealed and lapped joints must also be installed unless a site-specific condensation risk analysis in accordance with BS 5250 : 2021 indicates otherwise.

Surface condensation

9.1.14 In England and Wales, roofs will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 0.35 $W \cdot m^{-2} \cdot K^{-1}$ at any point, and the junctions with walls are designed in accordance with section 9.1.9 of this Certificate.

9.1.15 In Scotland, roofs will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 1.2 $W \cdot m^{-2} \cdot K^{-1}$ at any point. Guidance may be obtained from BS 5250 : 2021. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 9.1.9 of this Certificate.

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 of this Certificate.

9.2.3 During installation, care must be taken to ensure that the product is not subjected to any construction or foot traffic loads. Roof timbers of adequate strength must be used to support such loads.

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

Once installed, provided that the roof tiles/slates are maintained in a weathertight condition, maintenance is not required.

10 Manufacture

10.1 The production processes for the products 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 must 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 boards can be cut to size using a sharp knife or a fine-toothed saw.

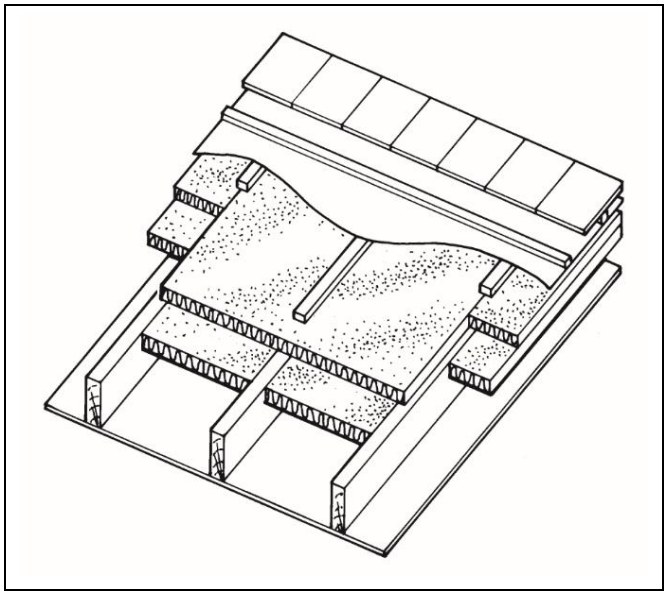
A.2 It is important to ensure a tight fit between boards, between boards and rafters, and between boards and other detailed elements. At ridges and verges, boards should be cut to achieve tightly butted joints.

A.3 It is important to fill/seal gaps and joints in the insulation envelope, including at all service penetrations. See section 9.1.6 of this Certificate.

A.4 The product must be installed in conjunction with an appropriate internal lining board for example standard gypsum plasterboard to BS EN 520 : 2004 in accordance with BS 8212 : 1995.

A.5 A typical installation detail is shown in Figure 1.

Figure 1 Typical installation



Procedure

Insulation above rafters

A.6 A treated-timber stop rail, the same thickness as the product, is fixed to the rafters close to the eaves to provide a firm fixing point for the counter battens. The product is laid above the rafters commencing at the stop rail. The product should be tightly butted and positioned in a staggered pattern with all the joints running from eaves to ridge occurring over the rafters. The procedure is continued until the whole area is covered.

A.7 Any gaps must be sealed with flexible sealant or expanding foam. Large-headed clout nails can be used as a temporary securing measure until the counter battens are secured into place.

Insulation between and above rafters

A.8 The product is cut to size and placed between the rafters on timber batten carriers or sarking clips nailed up the slope of the roof. The upper face of the product must be kept flush with the top of the rafter. The second layer is placed over the rafters as described in sections A.6 and A.7.

Insulation between rafters

A.9 Following completion of the roof structure, the product is cut to size and placed between the rafters. Timber battens or clips are fixed to the inner face of the rafters allowing sufficient depth for the insulation to sit flush with the underside of the rafters.

A.10 A sealed polythene AVCL with a minimum thickness 125 µm with lapped and sealed joints is placed over the rafter face before applying the internal finish.

Insulation between and below rafters

A.11 If required, after installation as described in section A.9, a second layer of the product may be added below the rafters running transverse to the first, to provide a staggered layer, and secured accordingly.

A.12 The product should be butted tightly against each other to prevent gaps. Taping the joints with an acrylic adhesive foil tape provides an effective AVCL and an air permeability barrier. To achieve an adequate bond, the product should be clean and free from any contamination.

External finishing

A.13 The vapour-permeable roof tile underlay is laid in accordance with the manufacturer's instructions.
A.14 Treated counter battens (minimum 38 mm deep) are fixed at each rafter run from eaves to ridge using the proprietary fixings at the required centres in accordance with the fixing manufacturer's instructions. The counter batten is also fixed to the anchor batten, with short lengths being tightly butted together.

A.15 Tiling laths are fixed horizontally at spacings to suit the specified tiles or slates with the nails penetrating the full depth of the laths and counter batten.

A.16 Roof tiles or slates are installed in accordance with the relevant clauses of BS 5534 : 2014.

Finishing

A.17 The plasterboard and AVCL are fixed to the internal face of timber rafters and are secured with conventional nails or screws to the appropriate length, and finished as normal.

Bibliography

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

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

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

BS 5534 : 2014 + A2 : 2018 *Code of practice for slating and tiling (including shingles)*

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

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

BS EN 826 : 1996 *Thermal insulating products for building applications — Determination of compression behaviour*

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

BS EN 1991-1-3 : 2003 + A1 : 2015 *Eurocode 1 : Actions on structures — General actions — Snow loads*
NA to BS EN 1991-1-3 : 2003 + A1 : 2015 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Snow loads*
BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 : Actions on structures — General actions — Wind actions*
NA to BS EN 1991-1-4 : 2005 + A1 : 2010 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Wind actions*

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 + A1 : 2008 *UK National Annex to Eurocode 5 : Design of timber structures — General — Common rules and rules for buildings*

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 — Part 1 — Classification using data from reaction to fire tests*

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*

ISO 9001 : 2015 *Quality management systems — Requirements*

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

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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