



Vencel Resil Limited

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**Agrément
Certificate
No 96/3299**

Designated by Government
to issue
European Technical
Approvals

JABLITE ROOF PANEL

Sous-toiture isolants
Dachlattung wärmedämmung

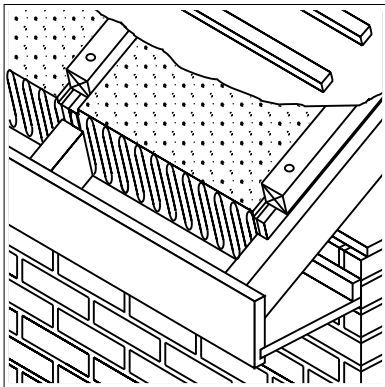
Product

• THIS CERTIFICATE RELATES TO JABLITE ROOF PANEL, A WARM PITCHED ROOF INSULATION COMPRISING HD GRADE EXPANDED POLYSTYRENE BEADBOARD.

• The product is for use as an insulating sarking for tiled and slated pitched roofs designed and constructed in accordance with the relevant clauses of BS 5534 : Part 1 : 1990.


• The product must be used in conjunction with a suitable permeable roof tile underlay.

• The product is manufactured and marketed by Vencel Resil Limited.




Building Regulations

1 The Building Regulations 1991 (as amended 1994) (England and Wales)

 The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the compliance of roof insulation with the Building Regulations. In the opinion of the BBA, Jablrite Roof Panel, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements.

Requirement: F2	Condensation
Comment:	The product is acceptable. See section 12.1 of this Certificate.
Requirement: L1	Conservation of fuel and power
Comment:	The product will enable a roof to meet the requirements of the Elemental Method for maximum U values given in Tables 1 and 5 of the Approved Document. See sections 10.2 to 10.4 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The product is acceptable. See section 14 of this Certificate.

2 The Building Standards (Scotland) Regulations 1990 (as amended)

 In the opinion of the BBA, Jablrite Roof Panel, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and Technical Standards as listed below.

Regulation: 10	Fitness of materials
Standard: B2.1	Selection and use of materials and components
Comment:	The product is acceptable.
Regulation: 12	Structural fire precautions
Standard: D2.5	Separation of roofs and rooflights from boundaries
Comment:	The product will not affect the external fire rating of a tiled or slated roof in which it is incorporated. See section 9 of this Certificate.
Regulation: 18	Preparation of sites and resistance to moisture
Standard: G4.1	Interstitial condensation
Standard: G4.2	Surface condensation
Comment:	The product is acceptable. See section 12.1 of this Certificate.
Regulation: 22	Conservation of fuel and power
Standard: J2.2	Performance standards
Comment:	The product will enable a roof to satisfy the requirements of the Elemental Approach for maximum U values given in the Table to Standard J2.3. See sections 10.2 and 10.3 of this Certificate.

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3 The Building Regulations (Northern Ireland) 1994 (as amended 1995)



In the opinion of the BBA, Jablite Roof Panel, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Building Regulations as listed below.

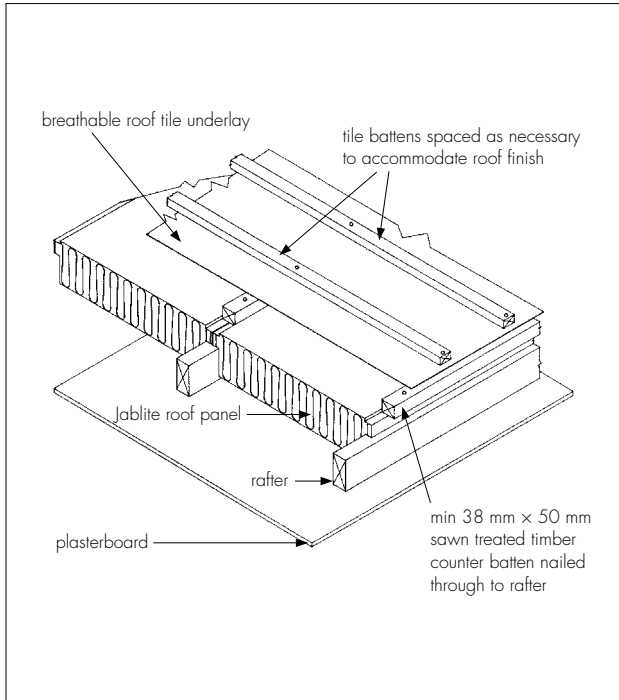
Regulation:	B2	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 14 of this Certificate.
Regulation:	C7	Condensation
Comment:		The product is acceptable. See section 12.1 of this Certificate.
Regulation:	E8	External fire spread
Comment:		The product will not affect the external fire rating of a tiled or slated roof in which it is incorporated. See section 9 of this Certificate.
Regulation:	F2	Conservation of fuel and power
Comment:		The product will enable a roof to satisfy the Elemental Approach for maximum U values given in Table 1 of the Technical Booklet. See sections 10.2 and 10.3 of this Certificate.

Technical Specification

4 Description

4.1 Jablite Roof Panel is manufactured using CFC-free HD/A grade expanded polystyrene to BS 3837 : Part 1 : 1986 (see Figure 1).

Figure 1 Roof panel



4.2 The product is available in panels of a standard length of 1200 mm and widths to suit 600 mm, 450 mm and 400 mm rafter centres. Edge profiles are rebated to suit nominal 38 mm or 50 mm wide rafters and double rafters. Standard thicknesses are 175 mm, 140 mm, 90 mm and 60 mm overall. Other thicknesses available to special order (see Figure 2).

4.3 The following ancillary products are used with the panels:

- permeable roof tile underlay
- proprietary fixings
- nails and treated battens

4.4 Information on appropriate proprietary fixings which meet the requirements of BS 5268 : Part 2 : 1996 and BS 5534 : Part 1 : 1990 can be obtained from Vencel Resil Limited.

4.5 Quality control checks are carried out during manufacture and on the finished panels. Checks include:

- dimensional accuracy
- compressive strength
- thermal conductivity
- minimum cross-breaking strength.

5 Delivery and site handling

5.1 The panels are delivered to site wrapped in polythene film. Each pack includes a label detailing the product grade, dimensions and the BBA logo incorporating the number of this Certificate.

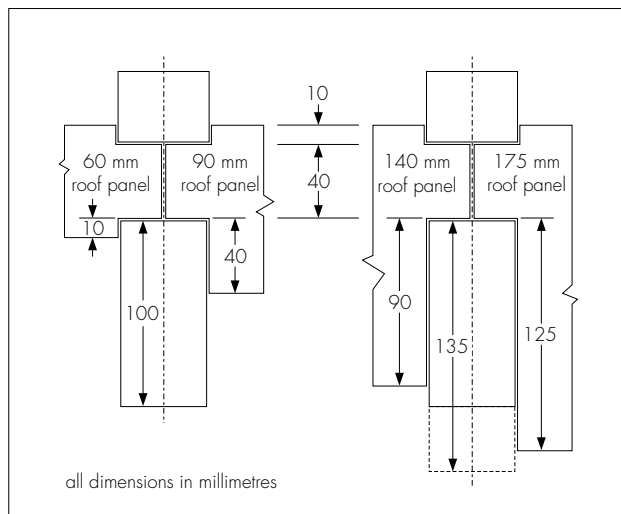
5.2 Prolonged exposure to sunlight causes degradation and breakdown of the surface. The panels should be stored under cover or protected with opaque polythene sheeting.

5.3 Where large volumes are stored, particularly if indoors, flammable materials and ignition sources should not be permitted in the vicinity. Adequate ventilation may be required.

5.4 Care must be taken to prevent contact with solvents and materials containing volatile components such as coal tar, pitch, timber newly treated with preservative (eg creosote). Contact can cause solvent attack.

5.5 The panels must not be exposed to open flame or to other ignition sources.

Figure 2 Panel body dimensions



Design Data

6 General

6.1 Jablite Roof Panel is satisfactory for use in conjunction with a permeable roof tile underlay, timber counter battens and tiling battens in tiled or slated, pitched roofs, designed and constructed in accordance with the relevant clauses of BS 5534 : Part 1 : 1990 for dwellings or other buildings with similar temperature and humidity conditions.

6.2 The panels are for use in constructions where the ceiling follows the pitch of the roof and encloses a habitable space, or where the ceiling is horizontal and encloses a loft space.

6.3 Although the panels will contribute to the buckling and racking strengths of the roof, normal cross-bracing is necessary when using them.

6.4 During installation the panels should not be walked on except over supporting roof timbers.

6.5 Roof tile underlays specified by Vencel Resil Limited should be permeable.

6.6 It is essential that detailing and jointing of the panels achieves a convection-free envelope of high vapour resistance (see section 1.2). Any gaps should be filled, for example, with an in-situ expanding foam. Ridges, abutments and other penetrations should also be sealed. Flue pipes passing through the insulation should be suitably sleeved.

7 Strength

The panels, when installed in accordance with the manufacturer's instructions and this Certificate, will resist the loads likely to be met during installation and in service (see section 1.5.2).

8 Structural stability

8.1 The resistance to wind uplift and likely dead loads depend upon factors peculiar to each project, eg roof geometry, geographical location. The effect

of wind loading should be calculated in accordance with BS 6399 : Part 2 : 1995 and the snow loadings should be calculated in accordance with BS 6399 : Part 3 : 1988 for each case.

8.2 When calculating the fixing spacing required to resist the calculated loadings the requirements of BS 5268 : Part 2 : 1996 should be followed where possible. Vencel Resil Limited to advise on the use of the correct proprietary fixings and improved nails in accordance with the requirements of BS 5268 : Part 2 : 1996.

9 Properties in relation to fire



9.1 The panels melt when exposed to excessive heat. The panels are classified as Type A in accordance with BS 3837 : Part 1 : 1986 and are combustible, but the increase in fire load in the building, consequent on their use, is small.

9.2 The use of the panels will not affect the rating obtained by tiled roofs when evaluated by assessment or tested to BS 476 : Part 3 : 1975.

10 Thermal insulation



10.1 For the purpose of U value calculations to determine if the requirements of the Building (or other statutory) Regulations are met, the thermal conductivity (λ value) of the boards may be taken as $0.034 \text{ Wm}^{-1}\text{K}^{-1}$.

10.2 The requirement for limiting heat loss through the building fabric can be satisfied if U values of the building elements do not exceed the maximum values in the relevant Elemental Method given in:

- (a) Approved Document L of the Building Regulations 1991 (as amended 1994) (England and Wales), or
- (b) Part J of the Technical Standards for compliance with the Building Standards (Scotland) Regulations 1990 (as amended), or
- (c) Technical Booklet F to the Building Regulations (Northern Ireland) 1994 (as amended 1995).

10.3 These documents also give guidance on selecting the thickness of insulation required to enable a roof to achieve the desired U value. Alternative approaches to the Elemental Method are described which allow for some flexibility in design of U values for individual constructional elements.



10.4 For constructions subject to the Building Regulations 1991 (as amended 1994) (England and Wales) the effect of thermal bridges should be taken into account in any U value calculations.

11 Resistance to moisture

The panels will not be adversely affected by rain showers during installation, nor by wind-driven snow or rain penetrating the tiling in service. Water absorption is low and its influence on the λ value is minimal.

12 Condensation



12.1 The risk of interstitial condensation will be minimal under normal conditions of use.

The panels have an intrinsically high vapour resistance and will, when installed with tightly butted joints and filled/sealed gaps, provide a continuous convection-free envelope of high vapour resistance. A suitable permeable roof tile underlay to be specified by Vencil Resil Limited may then be placed over the panels.

12.2 Where the panels are installed in a roof with an existing horizontal ceiling, a 'warm roof' is created and no ventilation is required. However, any insulation at ceiling level should be removed.

12.3 Where high humidities may be expected, a vapour control layer should be used unless a condensation risk analysis in accordance with BS 5250 : 1989(1995) shows that it is not necessary.

12.4 The risk of interstitial condensation is greatest when the building is drying out after construction. Guidance on preventing condensation from this and other sources is given in *The Building Research Advisory Service Leaflet (BRAS) Til 59*.

13 Maintenance and repair

Damaged panels can be replaced easily prior to the installation of counter battens.

14 Durability



The panels will have a life equivalent to that of the roof structure in which they are incorporated.

Installation

15 General

15.1 Installation of Jablite Roof Panel must be in accordance with the relevant clauses of BS 5534 : Part 1 : 1990 and the manufacturer's instructions, and can be carried out in all conditions normal to roof work, but in windy conditions handling difficulties may be experienced.

15.2 The panels are light to handle and can be cut easily but care must be taken to prevent damage; they will not support the weight of operatives and appropriate care must be taken during installation and tiling.

16 Procedure

16.1 Installation of the panels into the first rafter run is commenced at the ridge. The first panel in each rafter run is splay cut at the leading edge to an angle dictated by the rafter pitch. The rafter run is then completed to the eaves, the last panel being cut to length if necessary and splayed to the required angle.

16.2 A 38 mm by 50 mm wide treated timber stop end is fixed to the rafters at eaves, abutting the last panel in a rafter run.

16.3 The panels are fixed to the rafters by minimum 38 mm by 50 mm sawn treated timber counter battens positioned in the recess over the board lips (see Figure 2).

16.4 Fixing of the counter batten into the rafter is by minimum 115 mm by 5 mm diameter nails (for use with 50 mm rafters only) at 300 mm centres in accordance with BS 5534 : Part 1 : 1990 or by proprietary fastenings, details of which can be obtained from Vencil Resil Limited's Technical Department. The end of the counter batten should overlap and be fixed to the timber stopend.

16.5 The next run of panels is installed between adjacent rafters and fixed in the same manner. This sequence is continued along the roof.

16.6 Badly butted panels joints, eg at ridges, eaves, abutments and unsupported board edges, should be filled with an expanding foam filler.

16.7 The roof tile underlay as specified by Vencil Resil Limited should be installed over the counter battens in the normal manner and detailed at eaves, gables, valleys, etc in accordance with appropriate manufacturer's installation instructions.

Finishing

16.8 Roof tiles or slates are installed in accordance with the relevant clauses of BS 5534 : Part 1 : 1990.

Technical Investigations

The following is a summary of the technical investigations carried out on Jablite Roof Panel.

17 Investigations

An examination of data was made relating to:

- compressive strength
- dimensional stability with temperature
- thermal conductivity
- minimum cross-breaking strength
- burning characteristics
- insulation fixing characteristics.

18 Other investigations

18.1 An assessment of the thermal and hygrothermal properties of the system was made including condensation risk calculations for typical constructions.

18.2 A test was also conducted to establish the behaviour of the system under a thermal gradient.

18.3 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.

Additional Information

The quality systems of Vencel Resil Limited have been assessed and registered as meeting the requirements of BS EN ISO 9002 : 1994 by the British Standards Institution Quality Assurance — Certificate No FM 1260.

Bibliography

BS 476 *Fire test on building materials and structures*
Part 3 : 1975 *External fire exposure roof test*

BS 3837 *Expanded polystyrene boards*
Part 1 : 1986 *Specification for boards manufactured from expandable beads*

BS 5250 : 1989(1995) *Code of practice for control of condensation in building*

BS 5268 *Structural use of timber*

Part 2 : 1996 *Code of practice for permissible stress design, materials and workmanship*

BS 5534 *Code of practice for slating and tiling*

Part 1 : 1990 *Design*

BS 6399 *Loading for buildings*

Part 2 : 1995 *Code of practice for wind loads*

Part 3 : 1988 *Code of practice for imposed roof loads*

BS EN ISO 9002 : 1994 *Quality Systems. Model for quality assurance in production, installation and servicing*

Conditions of Certification

19 Conditions

19.1 Where reference is made in this Certificate to any Act of Parliament, Regulation made thereunder, Statutory Instrument, Code of Practice, British Standard, manufacturer's instruction or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certificate.

19.2 The quality of materials and the method of manufacture have been examined and found satisfactory by the BBA and must be maintained to this standard during the period of validity of this Certificate. This Certificate will remain valid for an unlimited period provided:

- (a) the specification of the product is unchanged; and
- (b) the manufacturer continues to have the product checked by the BBA.

19.3 This Certificate will apply only to the product that is installed, used and maintained as set out in this Certificate.

19.4 In granting this Certificate, the BBA makes no representation as to:

- (a) the presence or absence of patent or similar rights subsisting in the product; and
- (b) the legal right of the Certificate holder, to market, install or maintain the product; and
- (c) the nature of individual installations of the product, including methods and workmanship.

19.5 It should be noted that any recommendations relating to the safe use of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory or Common Law duties of care, or of any duty of care which exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory or Common Law duties of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the use of this product.



In the opinion of the British Board of Agrément, Jablite Roof Panel is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 96/3299 is accordingly awarded to Vencel Resil Limited.

On behalf of the British Board of Agrément

A handwritten signature in black ink, appearing to read 'P. C. Hewitt', is written over a light grey background.

Date of issue: 19th November 1996

Director