



Vencel Resil Ltd

Arndale House
18-20 Spital Street
Dartford
Kent DA1 2HT
Tel: 01322 626600 Fax: 01322 626610

**Agrément
Certificate
No 89/2179**
Fourth issue*

Designated by Government
to issue
European Technical
Approvals

JABLITE CAVITY WALL INSULATION SYSTEMS

Isolant polystyrène expansé pour murs creux
Kerndämmung

Product

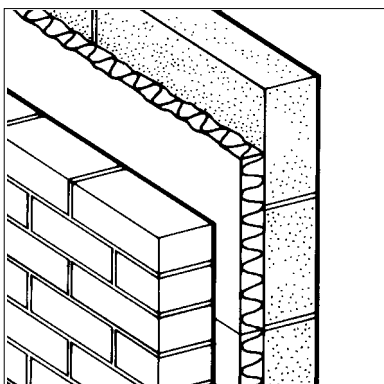
• *THIS CERTIFICATE RELATES TO JABLITE CAVITY WALL INSULATION SYSTEMS, A RANGE OF EXPANDED POLYSTYRENE BOARDS FOR CAVITY WALL INSULATION.*

• *The systems are for use in buildings up to 12 metres in height, and in buildings over 12 metres and up to 25 metres in height, subject to the conditions contained in the Design Data part of these Front Sheets and the accompanying Detail Sheets.*

• *The products are installed during construction and are for use as partial fill boards to reduce the thermal transmittance of cavity walls with masonry inner and outer leaves.*


• *It is essential that the walls are built in accordance with the conditions set out in the Design Data and Installation parts of these Front Sheets and the accompanying Detail Sheets.*

These Front Sheets must be read in conjunction with the accompanying Detail Sheets, which provide information specific to the products.



Building Regulations — Detail Sheet 1

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 cavity wall insulation with the Building Regulations. In the opinion of the BBA, the position of Jablite Cavity Wall Insulation Systems, if used in accordance with the provisions of this Certificate, will meet the relevant requirements.

Requirement: B3(4)

Internal fire spread (structure)

Comment:

Walls constructed using the product meet this Requirement, provided the completed walls comply with the conditions set out in section 6.2 of these Front Sheets.

Requirement: C4

Resistance to weather and ground moisture

Comment:

Data obtained by the BBA indicate that a wall constructed with the products meets this Requirement, provided the completed wall complies with the conditions set out in sections 5.2 and 5.5 to 5.8 of these Front Sheets. The products do not absorb water by capillary action and therefore may be used where they bridge the dpc of the inner or outer leaf. See sections 8.3 and 8.4 of these Front Sheets.

Requirement: L1

Conservation of fuel and power

Comment:

When installed in accordance with this Certificate, the products can contribute to meeting this Requirement. See sections 3.2 to 3.4 of the accompanying Detail Sheets.


Requirement: Regulation 7

Materials and workmanship

Comment:

The products are acceptable. See section 9 of these Front Sheets.

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

 In the opinion of the BBA, Jablite Cavity Wall Insulation Systems, 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 products are acceptable.

Regulation: 12

Structural fire precautions

Standard: D2.3

Non-combustibility

Comment:

The products are combustible and their use is restricted by this Standard in buildings other than dwellings or shared residential accommodation. However, in the opinion of the BBA, the products are suitable for use in all purpose groups provided they are installed in accordance with this Certificate. See section 6.1 of these Front Sheets.

Standards D2.19-D2.21

Cavity barriers

Comment:

A wall containing the products must comply with these Standards. See section 6.3 of these Front Sheets.

Regulation: 17

Preparation of sites and resistance to moisture

Standard: G2.6

Resistance to moisture from the ground

Comment:

The products do not absorb water by capillary action and therefore may be used where they bridge the dpc of the inner or outer leaf. See section 8.6 of these Front Sheets.

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Standard:	G3.1	Resistance to precipitation
Comment:		Data obtained by the BBA indicate that a wall incorporating the products can satisfy this Standard provided it complies with sections 5.2 and 5.5 to 5.8 of these Front Sheets. See also sections 8.3 and 8.5 of these Front Sheets.
Regulation:	22	Conservation of fuel and power
Standard:	J2.2	Performance standards
Comment:		The products can contribute to satisfying this Standard. See sections 3.2 and 3.3 of the relevant Detail Sheet.

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



In the opinion of the BBA, Jablite Cavity Wall Insulation Systems, 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 products are acceptable. See section 9 of these Front Sheets.
Regulation:	C5	Resistance to ground moisture and weather
Comment:		Data obtained by the BBA indicate that a wall incorporating the products can satisfy this Regulation provided it complies with sections 5.2 and 5.4 to 5.8 of these Front Sheets. See also sections 8.3 and 8.5 of these Front Sheets. The products do not absorb water by capillary action and therefore may be used where they bridge the dpc of the inner or outer leaf. See section 8.6 of these Front Sheets.
Regulation:	E6	Internal fire spread
Comment:		The products may be used in buildings where compliance with Diagram 3.5 in Technical Booklet E is achieved. See sections 6.1 and 6.4 of these Front Sheets.
Regulation:	F2	Conservation of fuel and power
Comment:		The products can contribute to satisfying this Regulation. See sections 3.2 and 3.3 of the relevant Detail Sheet.

Technical Specification

4 Delivery and site handling

4.1 The boards are delivered to site in packs wrapped in polythene. Each pack contains a label with the manufacturer's trade name and the BBA identification mark incorporating the number of this Certificate.

4.2 The products must be protected from prolonged exposure to sunlight and should be stored either under cover or protected with opaque polythene. Care must be taken to avoid contact with solvents and with materials containing volatile organic components such as coal tar, pitch, timber newly treated with creosote, etc.

4.3 The boards must not be exposed to open flame or other ignition sources.

Design Data

5 General

5.1 Jablite Cavity Wall Insulation Systems, when installed in accordance with this Certificate, are effective in reducing the U value (thermal transmittance) of new external cavity walls with masonry inner and outer leaves (where masonry includes clay and calcium silicate bricks, concrete blocks, natural and reconstituted stone blocks). It is essential that such

walls are designed and constructed so as to incorporate the precautions given in this Certificate to prevent moisture penetration.



5.2 New buildings subject to the Building Regulations 1991 (as amended 1994) (England and Wales), the Building Standards (Scotland) Regulations 1990 (as amended) or the Building Regulations (Northern Ireland) 1994 (as amended 1995) should be constructed in accordance with the relevant recommendations of BS 5628 : Part 3 : 1985. In particular clause 21 of the Code of practice should be followed in that the designer should select a construction appropriate to the local wind-driven rain index paying due regard to the design detailing, workmanship and materials to be used. The relevant recommendations of Section 3 of BS 5390 : 1976(1984) should be followed where the wall incorporates stone or cast stone.

5.3 Other buildings not subject to any of these regulations should also be built in accordance with BS 5628 : Part 3 : 1985 and/or BS 5390 : 1976(1984).



5.4 As with any other form of cavity wall insulation, where buildings need to comply with NHBC Standards or Zurich Municipal Technical Manual, specifiers should observe the requirements laid down in these documents.

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5.5 Where a residual cavity width of 50 mm or greater is maintained the product can be used in any exposure zone.

However, the use of the product does not preclude the need to apply any external render coat or other suitable finish in severe exposure zones where such application would be normal practice.

5.6 Where the walls of a building are to be 12 metres high or less, the minimum residual cavity width to be maintained during construction must be 25 mm. To achieve this requirement a greater nominal residual cavity width may need to be specified at the design stage to allow for inaccuracies inherent in the building process. The specifier may either:

(1) design a cavity width by consideration of the dimensional tolerances of the components which make up the wall by reference to the British Standards relating to the bricks, blocks and boards or use the data from their respective manufacturers. In addition allowance may need to be made for the quality of available building operatives and the degree of site supervision or control available, or

(2) design a nominal residual cavity width of 50 mm (a residual cavity nominally 50 mm wide will be required by such bodies as the NHBC, where normal standards of tolerance and workmanship are adopted).

5.7 The size of residual cavity obtained in the processes described in section 5.6 is also subject to the following limitations in respect of exposure of the proposed building as set out in Table 1 (see also section 8.1 for guidance on how the exposure factor E is determined).

Table 1 Maximum allowable total exposure factors of different constructions

Construction	Maximum allowable exposure factor E
All external masonry walls protected by: <ul style="list-style-type: none"> rendering (to BS 5262) tile hanging slate hanging 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.	
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

5.8 Where the walls of a building are between 12 and 25 metres high the width of residual clear cavity to be achieved is to be in excess of 50 mm, and the following requirements also apply:

(1) 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.

(2) The specifier must take extra care when detailing to ensure that the introduction of the insulation does not affect the weather resistance of the wall. More than average site supervision is recommended during the installation of the product.

(3) The exposure factor E does not exceed 120.

(4) Where, for structural reasons, the cavity width is reduced, eg by the intrusion of ring beams, a minimum residual cavity width of 25 mm must be maintained and extra care must be taken with fixings and weatherproofing, eg inclusion of a cavity tray.

5.9 The use of cavity battens and/or boards during construction is strongly recommended to prevent mortar droppings bridging the cavity.

5.10 As with all cavity wall insulation the construction detailing should comply with good practice as described in the BBA joint publication *Cavity Insulation of Masonry Walls — Dampness Risks and How to Minimise Them*.

6 Properties in relation to fire



6.1 The use of the products in the context of this Certificate does not prejudice the fire resistance properties of the wall. It is unlikely to become ignited within the cavity when used in the context of this Certificate. If fire does penetrate into an unventilated cavity, the amount of air present will be insufficient to support combustion, and flame spread will be minimal.



6.2 When using the products, the requirements of the Building Regulations 1991 (as amended 1994) (England and Wales) relating to fire spread in cavity walls can be met in all purpose groups without the need for cavity barriers provided the walls are constructed in accordance with the following provisions (based on Approved Document B, Diagram 28 and the note to that diagram):

(1) the wall must consist of masonry inner and outer leaves, each at least 75 mm thick

(2) the cavity must not be more than 100 mm wide

(3) the cavity must be closed at the top of the wall and at the top of any opening

(4) in addition to the insulation only the following should be placed in, or exposed to, the cavity:

(a) timber lintel, window or door frame, or end of timber joist

(b) pipe, conduit or cable

(c) dpc flashing, cavity closer or wall tie

(d) domestic meter cupboard, provided that:

- there are not more than two cupboards to a dwelling

- the opening in the outer leaf is not more than 800 mm by 500 mm for each cupboard, and
- the inner leaf is not penetrated except by a sleeve not more than 80 mm by 80 mm, which is fire stopped.



6.3 For those constructions subject to the Building Standards (Scotland) Regulations 1990 (as amended) no cavity barriers are required provided the wall complies with the provisions of Technical Standard D2.19 for compliance with these Regulations.



6.4 For those constructions subject to the Building Regulations (Northern Ireland) 1994 (as amended 1995) no cavity barriers are required provided the wall complies with the provisions of Diagram 3.5 in Technical Booklet E.

7 Proximity of flues and appliances

When the products are installed in close proximity to certain flue pipes and/or heat producing appliances, the following provisions should be met:

- (1) In buildings subject to the Building Regulations 1991 (as amended 1994) (England and Wales) the relevant clauses in Approved Document J.
- (2) In buildings subject to the Building Standards (Scotland) Regulations 1990 (as amended) the relevant Technical Standards within Part F for compliance with these Regulations.
- (3) In buildings subject to the Building Regulations (Northern Ireland) 1994 (as amended 1995) the requirements of Regulation L2. Guidance is given in Technical Booklet L on ways in which this Regulation may be met.

8 Liquid water penetration

8.1 The requirements to resist rain penetration in terms of exposure are defined in section 5 of these Front Sheets. The exposure factor E is determined using BBA Information No 10 in conjunction with BRE Report *Driving Rain Index* by R E Lacy, 1976. These calculations, procedure and data are also reproduced in BS 5618 : 1985.

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

- (a) installation is to be carried out to the highest level on each wall or the top edge of the insulation is protected by a cavity tray
- (b) wall ties and fixings are installed correctly and are thoroughly clean
- (c) excess mortar is cleaned from the cavity face of the leading leaf and any debris removed from the cavity
- (d) mortar droppings are cleaned from the exposed edges of installed boards.



8.3 Data obtained by the BBA confirm that a masonry wall incorporating the products, built to the requirements of BS 5628 : Part 3 : 1985, will not transmit water to the inner leaf.



8.4 Data obtained by the BBA also demonstrate that the products do not absorb water by capillary action; when the products are used where they bridge the dpc in walls, dampness from the ground will not pass through provided the wall is detailed in accordance with the Technical Solution shown in 4.4(c) of Approved Document C of the Building Regulations 1991 (as amended 1994) (England and Wales).



8.5 Data obtained by the BBA confirm that provided the wall incorporating the products is built in accordance with BS 5628 : Part 3 : 1985, it can satisfy Technical Standard G3.1 for compliance with the Building Standards (Scotland) Regulations 1990 (as amended) and Regulation C5 of the Building Regulations (Northern Ireland) 1994 (as amended 1995).

8.6 Data obtained also show that the products will satisfy Technical Standard G2.6 for compliance with the Building Standards (Scotland) Regulations 1990 (as amended) and Regulation C5 of the Building Regulations (Northern Ireland) 1994 (as amended 1995) where the products bridge the dpc in the inner or outer leaf.

9 Durability



The products are stable, rot-proof and durable and will remain effective as an insulation system for the life of the building, provided they are installed in accordance with this Certificate.

Additional Information

The management systems of Vencel Resil Ltd have been assessed and registered as meeting the requirements of BS EN ISO 9002 : 1994 by the British Standards Institution Quality Assurance, Certificates Nos FM 1252 (Whitcroft), FM 1253 (Belvedere), FM 1259 (Glasgow) and FM 1260 (Howden).

Bibliography

BS 5262 : 1991 *Code of practice for external renderings*

BS 5390 : 1976(1984) *Code of practice for stone masonry*

BS 5628 *Code of practice for use of masonry*
Part 3 : 1985 *Materials and components, design and workmanship*

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

Conditions of Certification

10 Conditions

10.1 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.

10.2 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.

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

10.4 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 Vencel Resil Ltd to market, install or maintain the product; and
- (c) the nature of individual installations of the product, including methods and workmanship.

10.5 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 Cavity Wall Insulation Systems are fit for their intended use provided they are installed, used and maintained as set out in this Certificate. Certificate No 89/2179 is accordingly awarded to Vencel Resil Ltd.

On behalf of the British Board of Agrément

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

Date of Fourth issue: 9th April 1996

Director

**Original Certificate issued on 1st March 1989. This amended version includes references to the revised Building Regulations, inclusion of Detail Sheet 1 and common details in the Front Sheets, and changes to the Conditions of Certification.*

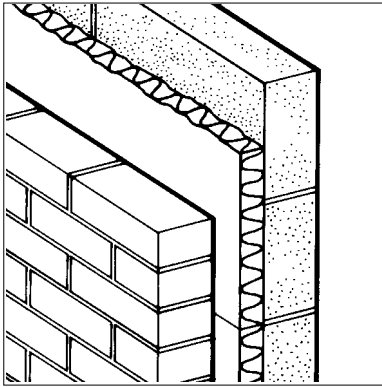


Vencel Resil Ltd

Certificate No 89/2179

DETAIL SHEET 2

Third issue*

JABLITE CAVITY WALL INSULATION SYSTEM**Product**

- THIS DETAIL SHEET REPLACES CERTIFICATE No 82/1042 AND RELATES TO THE JABLITE CAVITY WALL INSULATION SYSTEM, AN EXPANDED POLYSTYRENE BOARD FOR CAVITY WALL INSULATION.
- The product is for use in buildings up to 12 metres in height, and in buildings over 12 metres and up to 25 metres in height, subject to the conditions contained in the Design Data part of this Certificate.
- The product is installed during construction and is for use as a partial fill board to reduce the thermal transmittance of cavity walls with masonry inner and outer leaves.
- It is essential that the walls are built in accordance with the conditions set out in the Design Data and Installation parts of this Certificate.

This Detail Sheet must be read in conjunction with the Front Sheets, which give the product's position regarding the Building Regulations, common details and the Conditions of Certification.

Technical Specification**1 Description**

1.1 Jablite Cavity Wall Insulation Boards are manufactured from expandable polystyrene beads.

1.2 The boards are manufactured with plain edges in standard sizes (mm) of⁽¹⁾:

1200 by 450 by 25, 40, 50 and 60

1200 by 400 by 25, 40, 50 and 60

(1) For special situations, outside the scope of this Certificate, boards of the appropriate dimensions are available on request.

1.3 Tests are carried out on the finished boards in accordance with BS 3837 : Part 1 : 1986 and include:

dimensional accuracy
dimensional stability
compressive stress at 10% strain
cross-breaking strength
thermal conductivity
moisture vapour transmission.

1.4 Only those insulation retaining fixings approved by the BBA should be used with this system. Names and addresses of suppliers of approved fixings are available from Vencel Resil Ltd and the BBA.

1.5 It should be noted that whilst approved ties are suitable for use for insulation retaining purposes, additional vertical twist ties to BS 1243 : 1978 may be required for structural stability in accordance with BS 5628 : Part 3 : 1985 where the overall cavity width exceeds 75 mm.

Design Data**2 Water vapour penetration**

2.1 The boards have a vapour resistivity in excess of $145 \text{ MNsg}^{-1}\text{m}^{-1}$ and therefore will provide a significant resistance to the passage of water vapour.

2.2 Joints between boards will facilitate the passage of water vapour under normal conditions of temperature and humidity.

2.3 If the boards are to be used in the external walls of rooms expected to have high humidities, care must be taken to provide adequate permanent ventilation to avoid possible problems from the formation of interstitial condensation in the internal wall leaf.

3 Thermal insulation

3.1 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 $0.037 \text{ Wm}^{-1}\text{K}^{-1}$.



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

Approved Document L of the Building Regulations 1991 (as amended 1994) (England and Wales)

Part J of the Technical Standards for compliance with the Building Standards (Scotland) Regulations 1990 (as amended), or

Technical Booklet F to the Building Regulations (Northern Ireland) 1994 (as amended 1995).

3.3 Guidance on selecting the thickness of insulation required to enable a wall to achieve the desired U value is also given in these documents. Alternative approaches are also described which allow for some flexibility in design of U values for individual constructional elements.



3.4 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.

Installation

4 General

4.1 The walls are constructed leading with either the inner or outer leaf with the boards fixed to the cavity face of the leading leaf. It is recommended that the inner leaf be constructed ahead of the outer leaf, as the boards are fastened to the cavity face of the inner leaf. This gives a slightly enhanced thermal performance to the wall.

Supervision requirements (buildings over 12 metres and up to 25 metres in height)

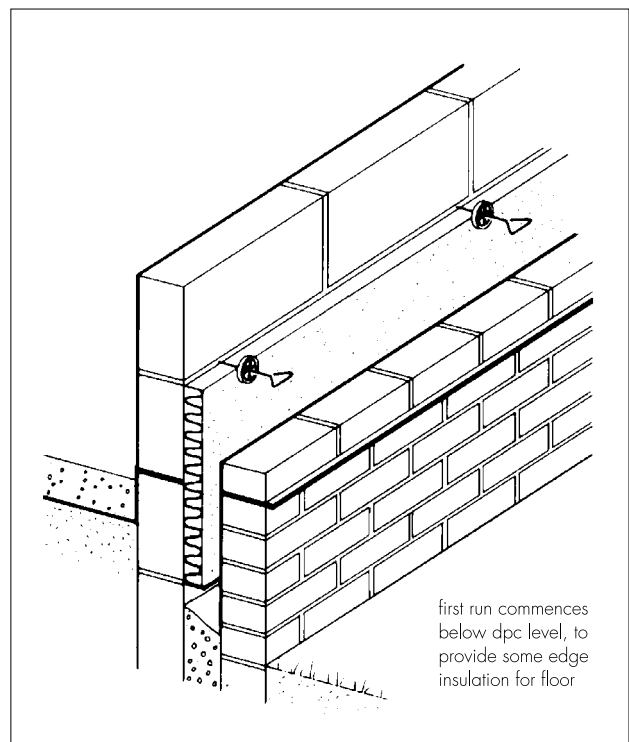
4.2 To comply with this Certificate, Vencel Resil Ltd's specialists experienced in site practice and installation will attend the site to provide demonstrations to ensure correct installation from the outset.

4.3 Adequate supervision of the installation must be maintained and Vencel Resil Ltd's specialists must have right of access to site to ensure correct installation.

5 Procedure

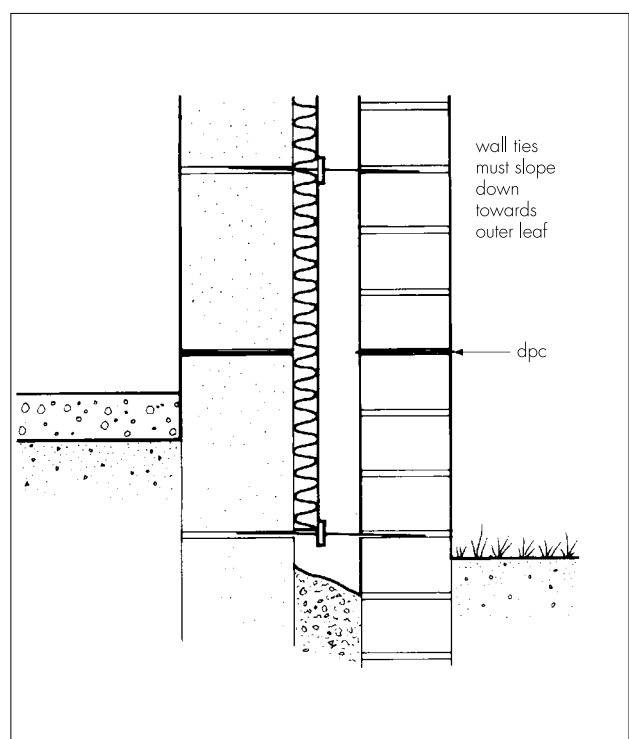
5.1 A section of the leading leaf is built with the first row of wall ties, at approximately 600 mm horizontal spacing, where the insulation is to begin. The first run of boards may commence below damp-proof course level to provide some edge insulation for the floor (see Figure 1).

Figure 1 First run of boards



5.2 The leading leaf is then built up to the required height with wall ties placed at a vertical spacing of 450 mm. Excess mortar is cleaned from the cavity face of the leading leaf, and the boards are placed on the wall ties behind the retaining clips, to form closely butt-jointed runs. It is essential that all wall ties slope downwards towards the outer leaf (see Figure 2).

Figure 2 Wall tie detail



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5.3 Horizontal spacing should be determined thus:

(a) Where insulation retaining ties/clips are sufficient for structural purposes, horizontal spacing⁽¹⁾ should be 450 mm or 600 mm depending on the thickness of the thinner leaf.

(1) Although a maximum horizontal spacing of 900 mm is permitted for structural purposes by BS 5628 : Part 3 : 1985, the spacing should be no more than 600 mm to ensure adequate retention of the boards.

(b) Where the thickness of the boards is greater than 50 mm and therefore the overall cavity width exceeds 75 mm, vertical twist ties are required, in accordance with BS 5628, and if they do not have insulation retaining clips additional insulation retaining ties and clips should be installed, spaced at 600 mm centres to give adequate retention of the boards.

5.4 The other leaf is then built up to the level of the top of the boards.

Mortar droppings

5.5 After each section of the leading leaf is built, excess mortar should be removed from the cavity face and mortar droppings cleaned from exposed edges of the installed board, before installation of the next run of boards. Use of a cavity board is recommended to protect board edges and make cleaning easier. Also, a cavity batten will protect the installed boards and help to keep the cavity clean as the following leaf is built (see Figures 3 and 4).

Cut pieces

5.6 Boards can be cut, using a sharp knife or fine-toothed saw, to fit around windows, doors, air bricks, etc. It is essential that cut pieces completely fill the spaces for which they are intended and that no gaps are left in the insulation.

Protection

5.7 All building involving the boards, particularly work which is interrupted, must conform to BS 5628 : Part 3 : 1985, Sections 4, clauses 30 *Storage on site*, 35 *Protection against damage during construction*, and 36 *Supervision*.

Figure 3 Use of cavity board

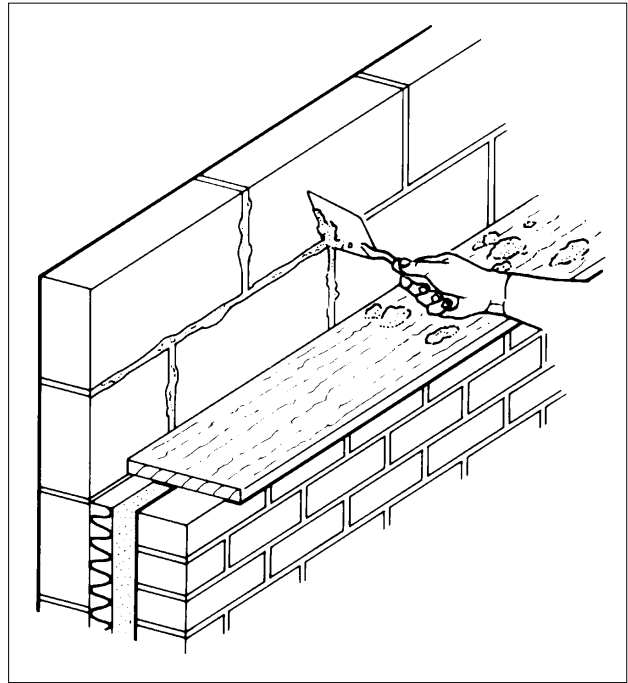
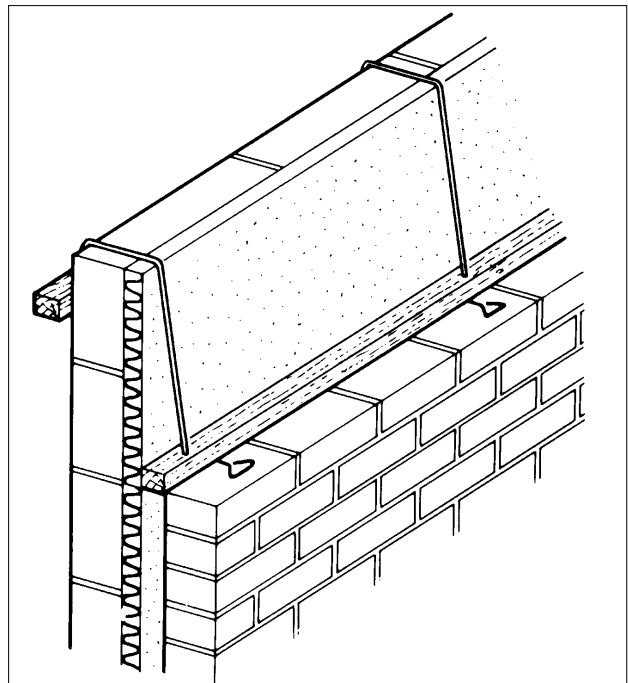


Figure 4 Use of cavity batten



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Technical Investigations

The following is a summary of the technical investigations carried out on the Jablite Cavity Wall Insulation System.

6 Tests

As part of the assessment resulting in the issue of the previous Certificates, tests were carried out to determine:

density of the boards
dimensional accuracy
suitability of fixing methods.

7 Other investigations

7.1 A re-examination was made of the data on which Certificate No 82/1042 was based.

7.2 Regular factory inspections have been carried out to ensure that quality is being maintained.

7.3 A user survey was carried out to assess the practicability of installation and to evaluate performance in use.

7.4 No failure of the system in use has been reported to the BBA.

Bibliography

BS 1243 : 1978 *Specification for metal ties for cavity wall construction*

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

BS 5628 *Code of practice for use of masonry*
Part 3 : 1985 *Materials and components, design and workmanship*



On behalf of the British Board of Agrément

Date of Third issue: 9th April 1996

Director

**Original Detail Sheet issued 1st March 1989. This amended version includes references to the revised Building Regulations and removal of common details to the Front Sheets.*



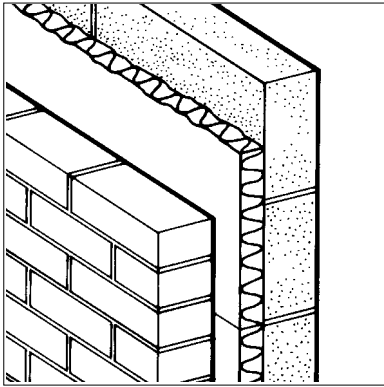
Vencel Resil Ltd

**JABLITE WALLLOK CAVITY WALL
INSULATION SYSTEM**

Certificate No 89/2179

DETAIL SHEET 3
Third issue*

Product



- THIS DETAIL SHEET RELATES TO THE JABLITE WALLLOK CAVITY WALL INSULATION SYSTEM, AN EXPANDED POLYSTYRENE BOARD WITH TONGUE-AND-GROOVE EDGES FOR CAVITY WALL INSULATION.
- The product is for use in buildings up to 12 metres in height, and in buildings over 12 metres and up to 25 metres in height, subject to the conditions contained in the Design Data part of this Certificate.
- Jablite WallLok is installed during construction and is for use as a partial fill board to reduce the thermal transmittance of cavity walls with masonry inner and outer leaves.
- It is essential that the walls are built in accordance with the conditions set out in the Design Data and Installation parts of this Detail Sheet.

This Detail Sheet must be read in conjunction with the Front Sheets, which give the product's position regarding the Building Regulations, common details and the Conditions of Certification.

Technical Specification

1 Description

1.1 Jablite WallLok Cavity Wall Insulation Boards are manufactured from expandable polystyrene beads. Each board incorporates a tongue on one long edge and a groove on the other. The short edges are also formed in this way, enabling the boards to interlock when installed.

1.2 The boards are manufactured in overall standard sizes (mm)⁽¹⁾:

1213 by 463⁽²⁾ by 33, 40, 50 and 60.

(1) For special situations, outside the scope of this Certificate, boards of the appropriate dimensions are available on request.

(2) The effective size of each board is 1200 mm by 450 mm when installed.

1.3 Tests are carried out on the finished boards in accordance with BS 3837 : Part 1 : 1986 and include:

dimensional accuracy
dimensional stability
compressive stress at 10% strain
cross-breaking strength
thermal conductivity
moisture vapour transmission.

1.4 Only those insulation retaining fixings approved by the BBA should be used with this system. Names and addresses of suppliers of

approved fixings are available from Vencel Resil Ltd and the BBA.

1.5 It should be noted that whilst approved ties are suitable for use for insulation retaining purposes, additional vertical twist ties to BS 1243 : 1978 may be required for structural stability in accordance with BS 5628 : Part 3 : 1985 where the overall cavity width exceeds 75 mm.

Design Data

2 Water vapour penetration

2.1 The boards have a vapour resistivity in excess of $145 \text{ MNsg}^{-1}\text{m}^{-1}$ and therefore will provide a significant resistance to the passage of water vapour.

2.3 If the boards are to be used in the external walls of rooms expected to have high humidities, care must be taken to provide adequate permanent ventilation to avoid possible problems from the formation of interstitial condensation in the internal wall leaf.

3 Thermal insulation

3.1 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 $0.037 \text{ Wm}^{-1}\text{K}^{-1}$.



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

Approved Document L of the Building Regulations 1991 (as amended 1994) (England and Wales)

Part J of the Technical Standards for compliance with the Building Standards (Scotland) Regulations 1990 (as amended), or

Technical Booklet F to the Building Regulations (Northern Ireland) 1994 (as amended 1995).

3.3 Guidance on selecting the thickness of insulation required to enable a wall to achieve the desired U value is also given in these documents. Alternative approaches are also described which allow for some flexibility in design of U values for individual constructional elements.



3.4 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.

Installation

4 General

4.1 The walls are constructed leading with either inner or outer leaf with the boards fixed to the cavity face of the leading leaf. It is recommended that the inner leaf be constructed ahead of the outer leaf, in that the Jablite Walllok boards are fastened to the cavity face of the inner leaf. This gives a slightly enhanced thermal performance to the wall.

Supervision requirements (buildings over 12 metres and up to 25 metres in height)

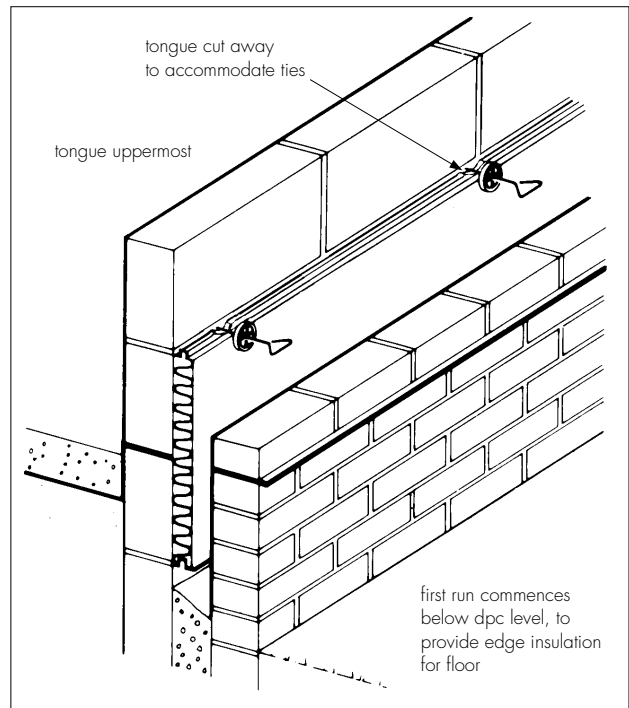
4.2 To comply with this Certificate, Vencel Resil Ltd's specialists experienced in site practice and installation will attend the site to provide demonstrations to ensure correct installation from the outset.

4.3 Adequate supervision of the installation must be maintained and Vencel Resil Ltd's specialists must have right of access to site to ensure correct installation.

5 Procedure

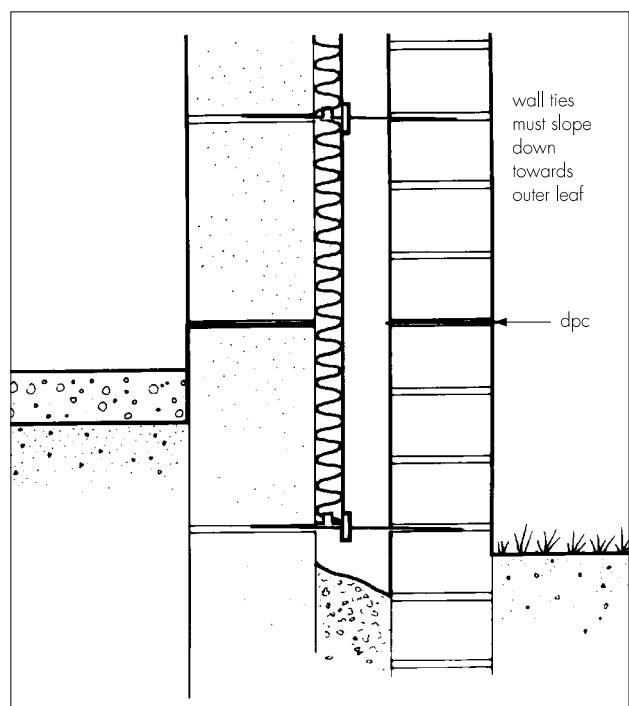
5.1 A section of the leading leaf is built with the first row of wall ties, at approximately 600 mm horizontal spacing, where the insulation is to begin. The first run of boards may commence below damp-proof course level to provide some edge insulation for the floor (see Figure 1).

Figure 1 First run of boards



5.2 The leading leaf is then built up to the required height with wall ties placed at a vertical spacing of 450 mm. Excess mortar is cleaned from the cavity face of the leading leaf, and the Jablite Walllok boards are placed on the wall ties behind the retaining clips. The boards are placed with the cut tongue uppermost, for interlocking with the grooved edges of the next run of boards. The boards should be carefully notched with a sharp knife or fine-toothed saw to accommodate the wall ties. It is essential that all wall ties slope downwards towards the outer leaf (see Figure 2).

Figure 2 Wall tie detail



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5.3 Horizontal spacing should be determined thus:

(a) Where insulation retaining ties/clips are sufficient for structural purposes, horizontal spacing should be 450 mm or 600 mm depending on the thickness of the thinner leaf.

(b) Where the thickness of the boards is greater than 50 mm and therefore the overall cavity width exceeds 75 mm, vertical twist ties are required, in accordance with BS 5628 : Part 3 : 1985, and if they do not have insulation retaining clips additional insulation retaining ties and clips should be installed, spaced at 600 mm centres to give adequate retention of the boards.

5.4 The other leaf is then built up to the level of the top of the boards.

Mortar droppings

5.5 After each section of the leading leaf is built, excess mortar should be removed from the cavity face and mortar droppings cleaned from exposed edges of the installed board, before installation of the next run of boards. Use of a cavity board is recommended to protect board edges and make cleaning easier. Also, a cavity batten will protect the installed boards and help to keep the cavity clean as the following leaf is built (see Figures 3 and 4).

Cut pieces

5.6 Boards can be cut, using a sharp knife or fine-toothed saw, to fit around windows, doors, air bricks, etc. It is essential that cut pieces completely fill the spaces for which they are intended and that no gaps are left in the insulation.

Protection

5.7 All building involving the boards, particularly work which is interrupted, must conform to BS 5628 : Part 3 : 1985, Section 4, clauses 30 *Storage on site*, 35 *Protection against damage during construction*, and 36 *Supervision*.

Figure 3 Use of cavity board

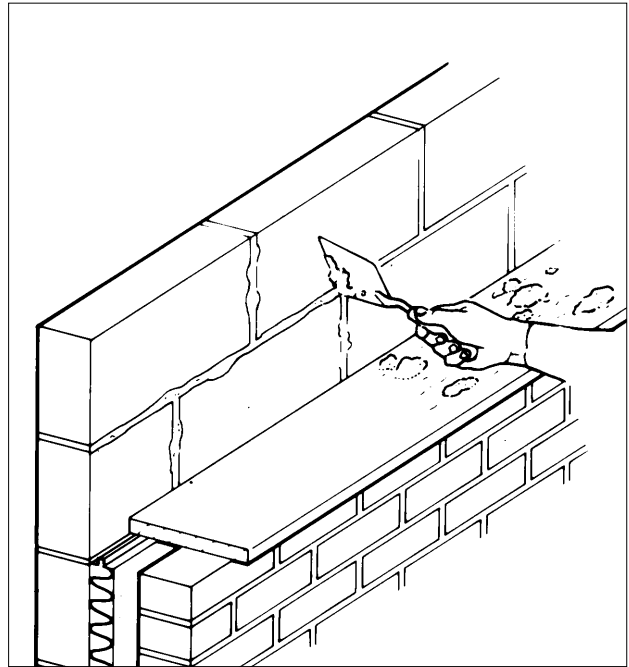
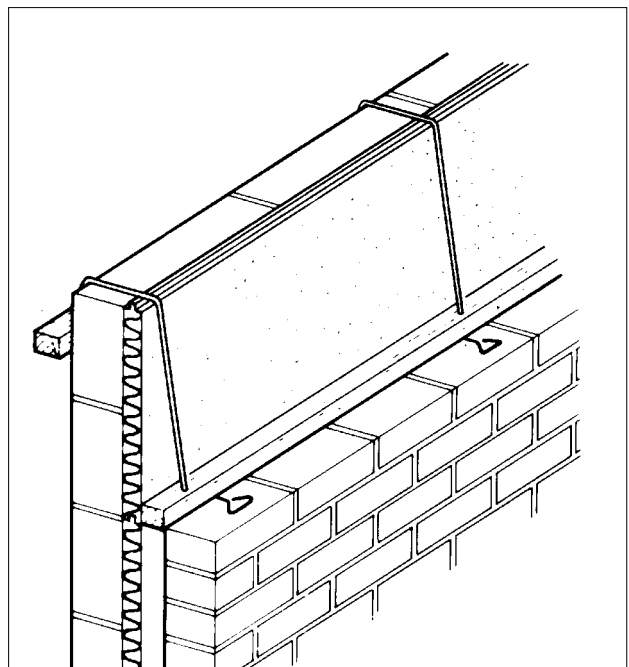


Figure 4 Use of cavity batten



Technical Investigations

The following is a summary of the technical investigations carried out on the Jablite WallLok Cavity Wall Insulation System.

6 Tests

As part of the assessment resulting in the issue of the previous Certificates, tests were carried out to determine:

density of the boards
dimensional accuracy
suitability of fixing methods.

7 Other investigations

7.1 An examination was made of the data on which Certificate No 82/1042 was based, including that for:

thermal insulation
fire
toxicity
tensile strength
durability of the material.

7.2 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.

7.3 A visit was made to a site in progress to assess practicability of installation and the method of fixing.

7.4 No failure of the system in use has been reported to the BBA.

Bibliography

BS 1243 : 1978 *Specification for metal ties for cavity wall construction*

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

BS 5628 *Code of practice for use of masonry*
Part 3 : 1985 *Materials and components, design and workmanship*



On behalf of the British Board of Agrément

A handwritten signature in black ink, appearing to read 'P. C. Newstead'.

Date of Third issue: 9th April 1996

Director

**Original Detail Sheet issued 30th March 1989. This amended version includes references to the revised Building Regulations and removal of common details to the Front Sheets.*