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**Agrément
Certificate
No 07/4422**

Designated by Government
to issue
European Technical
Approvals

BALLYTHERM BTCW TONGUE-AND-GROOVE CAVITY WALL INSULATION

Isolant pour murs creux
Kerndämmung

Product



• THIS CERTIFICATE OF CONFIRMATION RELATES TO BALLYTHERM BTCW TONGUE-AND-GROOVE CAVITY WALL INSULATION, A RIGID POLYISOCYANURATE FOAM BOARD WITH FOIL FACINGS FOR PARTIAL FILL CAVITY WALLS.

• The product is for use in new buildings up to and including 12 m 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 new cavity walls with masonry inner and outer leaves.

Regulations

1 The Building Regulations 2000 (as amended) (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, Ballytherm BTCW Tongue-and-Groove Cavity Wall Insulation, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements.

Requirement:	B3(4)	Internal fire spread (structure)
Comment:		Walls incorporating the product can meet this Requirement. See sections 8.2 to 8.4 of this Certificate.
Requirement:	C2(a)(b)(c)	Resistance to moisture
Comment:		Walls incorporating the product can meet this Requirement. See sections 7.2, 7.7, 10.2, 12.1 and 12.3 of this Certificate. In addition the product may be used where it bridges the dpc in either leaf. See section 10.1 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		Walls incorporating the product can contribute to a building meeting this Requirement. See sections 11.2 to 11.5 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is an acceptable material. See section 13 of this Certificate.

continued

continued

- 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.

Confirmation of Agrément Certificate No 05/0220, Detail Sheet 2, issued by the Irish Agrément Board, (IAB), EOLAS, Glasnevin, Dublin 9, Ireland.

2 The Building (Scotland) Regulations 2004



In the opinion of the BBA, Ballytherm BTCW Tongue-and-Groove Cavity Wall Insulation, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and related Mandatory Standards as listed below.

Regulation:	8	Fitness and durability of materials and workmanship
Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The product can contribute to a construction meeting this Regulation. See section 13 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards — construction
Standard:	2.4	Cavities
Comment:		Wall cavities incorporating the product must comply with this Standard, with reference to clauses 2.4.1 ⁽¹⁾ , 2.4.2 ⁽¹⁾ , 2.4.7 ⁽¹⁾ and 2.4.9 ⁽²⁾ . See section 8.4 of this Certificate.
Standard:	3.4	Moisture from the ground
Comment:		The product does not absorb water by capillary action and, therefore, may be used where it bridges the dpc of either leaf, with reference to clause 3.4.5 ⁽¹⁾⁽²⁾ to this Standard. See sections 10.1 and 10.2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		Walls incorporating the product can satisfy this Standard, with reference to clause 3.10.3 ⁽¹⁾⁽²⁾ , provided they comply with sections 7.2, 7.4, 7.7 and 10.2 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.15.1 ⁽¹⁾ , 3.15.3 ⁽¹⁾ and 3.15.4 ⁽¹⁾ . See sections 12.2 and 12.3 of this Certificate.
Standard:	6.2	Building insulation envelope
Comment:		The product will enable a wall to satisfy or contribute to satisfying the requirements of this Standard, with reference to clauses 6.2.1 ⁽¹⁾⁽²⁾ (Table 1), 6.2.4 ⁽¹⁾⁽²⁾ and 6.2.5 ⁽¹⁾⁽²⁾ . See sections 11.6 and 11.7 of this Certificate. (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).

3 The Building Regulations (Northern Ireland) 2000 (as amended)



In the opinion of the BBA, Ballytherm BTCW Tongue-and-Groove Cavity Wall Insulation, 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 an acceptable material. See section 13 of this Certificate.
Regulation:	C4	Resistance to ground moisture and weather
Comment:		Walls incorporating the product can satisfy this Regulation. See sections 7.2, 7.7 and 10.2 of this Certificate. In addition the product may be used where it bridges the dpc in either leaf. See section 10.1 of this Certificate.
Regulation:	C5	Condensation
Comment:		A wall incorporating the boards can satisfy this Regulation. See section 12.3 of this Certificate.
Regulation:	E3	Internal fire spread — Structure
Comment:		Walls incorporating the product can satisfy this Regulation. See sections 8.2 to 8.4 of this Certificate.
Regulation:	F2(a)(i)	Conservation measures
Comment:		Walls incorporating the product can satisfy or contribute to satisfying this Regulation. See section 11.2 to 11.5 of this Certificate.

4 Construction (Design and Management) Regulations 1994 (as amended) Construction (Design and Management) Regulations (Northern Ireland) 1995 (as amended)

Information in this Certificate may assist the client, planning supervisor, designer and contractors to address their obligations under these Regulations.

See section: 6 *Delivery and site handling* (6.4).

Technical Specification

5 Description

5.1 Ballytherm BTCW Cavity Wall Insulation is a partial fill, cavity wall board with a tongue-and-groove edge and comprises a closed cell rigid polyisocyanurate foam core, sandwiched with aluminium foil facings on both sides. The foam is CFC and HCFC free and has zero ozone depletion potential (Zero ODP). The nominal characteristics are:

length (mm)	2400
width (mm)	450
thickness (mm) ⁽¹⁾	25 to 75
density (kgm ⁻³)	30 to 33
edge profile	tongue-and-groove

(1) Other sizes available subject to quantity.

5.2 The board is manufactured in accordance with EN 13165 : 2001, Section 4.2 and the relevant parts of Section 4.3.

5.3 Only BBA-approved insulation retaining fixings and compatible wall ties should be used with the boards.

5.4 Cavity wall ties in accordance with BS DD 140-2 : 1987 or BS EN 845-1 : 2003 and BS 5628-3 : 2005, approved by the BBA, are suitable.

5.5 Where the overall cavity width exceeds 75 mm, additional vertical twist ties may be required for structural stability in accordance with BS 5628-3 : 2005 (see section 1.5 of this Certificate).

6 Delivery and site handling

6.1 The boards are delivered to site in polyethylene shrink-wrapped packs containing a label bearing the manufacturer's trade name, product description and characteristics, and the BBA identification mark incorporating the number of this Certificate.

6.2 Care must be taken to avoid damaging corners and edges.

6.3 The boards must be protected from prolonged exposure to sunlight and should be stored either under cover or protected with opaque polythene sheeting. Where possible, packs should be stored inside. If stored outside, the products should be stacked flat and raised above ground level, and not in contact with ground moisture.

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

Design Data

7 General

7.1 Ballytherm BTCW Tongue-and-Groove Cavity Wall Insulation is effective in reducing the U value (thermal transmittance) of new external cavity walls with masonry inner and outer leaves (masonry includes clay and calcium silicate bricks, concrete blocks, natural and reconstituted stone blocks). It is essential that such walls are designed and constructed to incorporate the normal precautions to prevent moisture penetration.



7.2 Buildings subject to national Building Regulations should be constructed in accordance with the relevant recommendations of:

- BS 5628-3 : 2005. In particular, Clause 5.5 of the Code of Practice *Exclusion of water* 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⁽¹⁾
- BS 8000-3 : 2001.

(1) The construction and detailing should comply with good practice as described in BBA joint publication *Cavity Insulation of Masonry Walls — Dampness Risks and How to Minimise them*. They are particularly important in areas subject to severe driving rain.

7.3 Other buildings not subject to these Regulations should also be built in accordance with the Standards given in 7.2.



7.4 The product is for use in any exposure zone in buildings up to 12 m in height, subject to the conditions of this Certificate and sections 7.2 and 7.8 being met. 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.

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

7.6 As with any other form of cavity wall insulation, where buildings need to comply with NHBC Standards or *Zurich Building Guarantee Technical Manual* specifiers should observe the requirements of these Standards.



7.7 It is recommended that installation is carried out to the highest level on each wall or that the top edge of the installation is protected by a cavity tray.

Buildings up to and including 12 m high

7.8 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:

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

7.9 The size of residual cavity obtained in the processes described in section 7.8 is also subject to the following limitations in respect of exposure of the proposed building as set out in Table 1.


Table 1 Maximum allowable total exposure factors of different constructions⁽¹⁾

Construction	Maximum allowable exposure factor $E^{(1)}$
All external masonry walls protected by rendering (to BS EN 13914-1 : 2005) 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	100
One or more external masonry walls constructed from calcium silicate bricks, concrete blocks, reconstituted stone or natural stone, the porosity of which is less than 20% by volume, or any material with raked mortar joints	88

(1) Based upon the approach in BS 5618 : 1985.

8 Behaviour in relation to fire

8.1 The product achieved a Class 1 surface spread of flame rating when tested to BS 476-7 : 1997. The use of the boards does not prejudice the fire resistance properties of the wall. They are 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.

 8.2 The requirements of the Building Regulations relating to fire spread in cavity walls, can be met in buildings of all purpose groups without the need for cavity barriers, provided the construction complies with the provisions detailed in:

England and Wales

Approved Document B, Diagram 32


Northern Ireland

Technical Booklet E, Diagram 3.5.

8.3 A summary of these provisions is given here:

England and Wales and Northern Ireland

- (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 300 mm wide (Northern Ireland only).
- (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:
 - timber lintels, window or door frames, or end of timber joists
 - pipe, conduit or cables
 - dpc, flashing, cavity closer or wall tie
 - domestic meter cupboard, provided 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.

 8.4 For constructions not covered by sections 8.2 and 8.3, cavity barriers must be provided to comply with:

England and Wales

Approved Document B, Section 10

Scotland

Mandatory Standard 2.4, clauses 2.4.1⁽¹⁾, 2.4.2⁽¹⁾, 2.4.7⁽¹⁾ and 2.4.9⁽²⁾

- (1) Technical Handbook (Domestic).
- (2) Technical Handbook (Non-Domestic).

Northern Ireland

Technical Booklet E, paragraphs 3.35 to 3.38.

9 Proximity of flues and appliances

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

England and Wales

Approved Document J


Scotland

Mandatory Standard 3.19

Northern Ireland

Technical Booklet L.

10 Liquid water penetration

 10.1 When the product is used in situations where it bridges the dpc in walls, dampness from the ground will not pass through to the inner leaf provided the cavity wall is detailed in accordance with the requirements and provisions of the national Building Regulations:

England and Wales

Approved Document C2(a)

Scotland

Mandatory Standard 3.4, clause 3.4.5⁽¹⁾⁽²⁾

- (1) Technical Handbook (Domestic).
- (2) Technical Handbook (Non-Domestic).

Northern Ireland

Technical Booklet C, Section 1.6.

10.2 Constructions incorporating the product and built in accordance with BS 5628-3 : 2005, will resist the transfer of precipitation to the inner leaf and satisfy the national Building Regulations:

England and Wales

Approved Document C2(b)

Scotland

Mandatory Standard 3.10, clause 3.10.3⁽¹⁾⁽²⁾

- (1) Technical Handbook (Domestic).
- (2) Technical Handbook (Non-Domestic).

Northern Ireland

Technical Booklet C, Section 2.


10.3 In all situations and to prevent bridging of the cavity, it is particularly important to ensure during installation that:

- the dpc should not project into cavity at ground-floor level as it can lead to catching mortar droppings
- wall ties and fixings are installed correctly and are thoroughly clean
- excess mortar is cleaned from the cavity face of the leading leaf and any debris removed from the cavity
- mortar droppings are cleaned from the exposed edges of installed boards
- boards are properly installed and butt jointed

- at lintel level, a cavity tray, stop ends and weepholes must be provided
- installation is carried out to the highest level on each wall or the top edge of the insulation is protected by a cavity tray.

11 Thermal performance

11.1 Calculations of the thermal transmittance (U value) of a specific wall construction should be carried out in accordance with BS EN ISO 6946 : 1997 and BRE report (BR 443 : 2006) *Conventions for U-value calculations*, using the declared ($\lambda_{90/90}$ value) thermal conductivity of $0.022 \text{ Wm}^{-1}\text{K}^{-1}$ for the insulation. The U value of a typical wall construction will depend on the cavity width and the insulating value of the internal block leaf and finish. Example U values are given in Table 1.

 11.2 Subject to the selection of an appropriate insulation thickness walls can improve on the U value of $0.35 \text{ Wm}^{-2}\text{K}^{-1}$ as specified in the 'notional' building in Table R1 of Appendix R of *The Government's Standard Assessment Procedure for Energy Rating of Dwellings* (SAP 2005) or the Simplified Building Energy Model (SBEM), see Table 1. The product therefore can contribute to enabling a building to meet the Target Emission Rate 'average' improvements of 20% (dwellings) and 23 to 28% (buildings other than dwellings):

England and Wales

As specified in Approved Documents L1A and L2A

Northern Ireland

As specified in Technical Booklets F1 and F2

11.3 The product can maintain, or contribute to maintaining, continuity of thermal insulation at junctions between the wall and other building elements. Guidance in this respect, and on limiting heat loss by air infiltration, can be found in:

England and Wales

Limiting thermal bridging and air leakage: Robust construction details for dwellings and similar buildings TSO 2002

Northern Ireland

Accredited Construction Details (version 1.0).

11.4 Compliance with the guidance referred to in section 11.3 will allow the use of the default psi values from Table 3 of BRE Information Paper IP 1/06 *Assessing the effects of thermal bridging at junctions and around openings* and Table K1 of *The Government's Standard Assessment Procedure for Energy Rating of Dwellings*, SAP 2005, in Target Emission Rate calculations to SAP 2005 or the Simplified Building Energy Model (SBEM).

11.5 When installed in walls of existing buildings, the product can meet, or contribute to meet, the relevant requirements of the following guidance documents:

England and Wales

As specified in Approved Documents L1B, section 2 and L2B, section 3

Northern Ireland

As specified in technical Booklets F1 and F2, section 3



11.6 Subject to the selection of an appropriate insulation thickness, wall can satisfy the Elemental target U value of $0.30 \text{ Wm}^{-2}\text{K}^{-1}$ specified in Table 1 to clause 6.2.1 of the Technical Handbooks.

11.7 The product can maintain, or contribute to maintaining, continuity of thermal insulation at junctions between wall and other building elements. Guidance in BRE Report (BR 262: 2002) *Thermal insulation : avoiding risks* is acceptable.

12 Condensation

Surface condensation



12.1 Walls will limit the risk of surface condensation adequately when the thermal transmittance (U value) does not exceed $0.7 \text{ Wm}^{-2}\text{K}^{-1}$ at any point, and the junctions with other elements are designed in accordance with the relevant requirements of the TSO publication (see section 11.3) or the BRE Information Paper IP 01/06.



12.2 Walls and ceilings will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed $1.2 \text{ Wm}^{-2}\text{K}^{-1}$ at any point. Guidance may be obtained from Section 8 of BS 5250 : 2002 and BRE report (BR 262 : 2002).

Interstitial condensation



12.3 Walls incorporating the product will limit the risk of interstitial condensation adequately when they are designed and constructed in accordance with BS 5250 : 2002 (Section 8 and Annex D).

12.4 The product has a nominal vapour resistivity exceeding $250 \text{ MNsg}^{-1}\text{m}^{-1}$ and, therefore, will provide a significant resistance to the passage of water vapour transmission. Joints between boards will facilitate the passage of water vapour under normal conditions of temperature and humidity.

12.5 If the product is 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.

Table 1 U value ($\text{Wm}^{-2}\text{K}^{-1}$) of partial filled cavity wall⁽¹⁾⁽²⁾

Insulated thickness (mm)	Dense concrete block ($\lambda = 1.13 \text{ Wm}^{-1}\text{K}^{-1}$) $d = 1800 \text{ kgm}^{-3}$	Medium concrete block ($\lambda = 0.32 \text{ Wm}^{-1}\text{K}^{-1}$) $d = 1300 \text{ kgm}^{-3}$	Aerated concrete block ($\lambda = 0.12 \text{ Wm}^{-1}\text{K}^{-1}$) $d = 400 \text{ kgm}^{-3}$
25	0.50	0.46	0.39
50	0.32	0.30	0.24
70	0.25	0.24	0.22
75	0.23	0.22	0.21

(1) Assuming dense plaster thickness 13 mm ($\lambda = 0.57 \text{ Wm}^{-1}\text{K}^{-1}$).

(2) Assuming the low emissivity-residual air cavity to have a resistance of $0.44 \text{ m}^2\text{KW}^{-1}$ as per BRE Report 443.

13 Durability



The product is rot-proof, dimensionally stable and durable and will remain effective as an insulant for the life of the building in which it is installed.

Installation

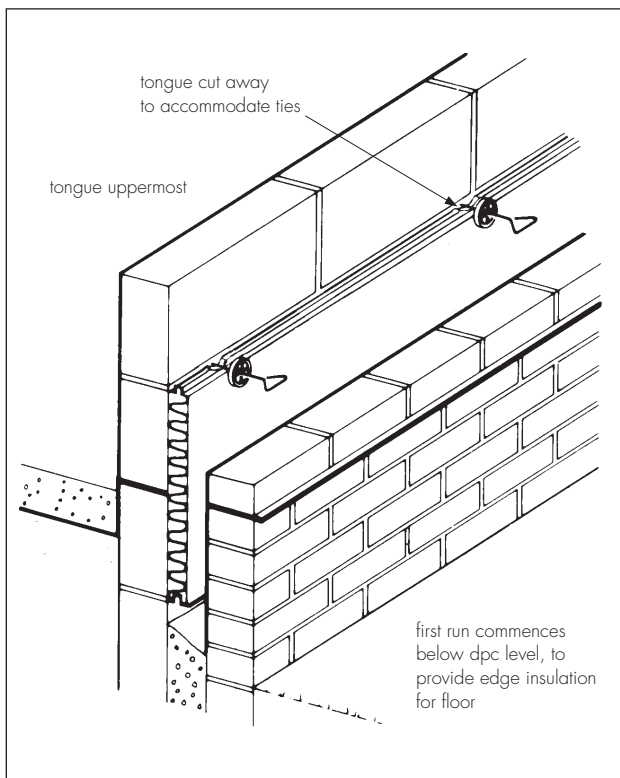
14 General

It is recommended that the inner leaf be constructed ahead of the outer leaf, as the product fastened to the cavity face of the inner leaf give a slightly enhanced thermal performance. It is essential that the spacing of wall ties/clips allows one long edge of each board to be secured at a minimum of two points.

15 Procedure

15.1 A section of the inner leaf is built with the first row of wall ties, at approximately 600 mm horizontal spacing, where the insulation is to begin. It is recommended that the wall ties are not placed directly on the damp-proof course. 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 Insulation installed below dpc level to provide edge insulation for floor

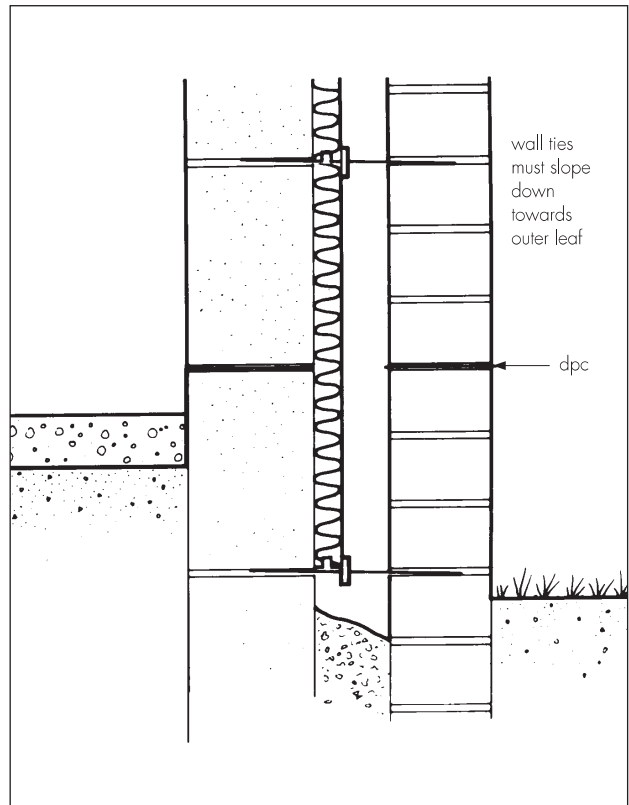


15.2 The leading leaf is built up to the required height, with a second row of wall ties placed at a vertical height of 450 mm ensuring the drip of the tie is located halfway across the residual cavity width. Excess mortar is cleaned from the cavity face of the leading leaf, and the boards are placed on the wall ties, behind the retaining clips, to form a closely jointed run.

15.3 The second row of wall ties is fitted to retain the tops of the boards. It is essential that all wall ties slope downwards towards the outer leaf (see Figure 2) and at

centres not exceeding 900 mm to ensure that each board is secured at a minimum of three points.

Figure 2 Installation of wall ties



15.4 Additional ties may be required to satisfy the structural requirements of BS 5628-3 : 2005 and/or to ensure adequate retention of boards or cut pieces.

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

15.6 All boards should be interlocked with vertical joints staggered. Insulation boards and wall ties should be staggered as construction proceeds and carried up to the highest level of wall, except where protected by a cavity tray (see section 7.7).

15.7 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 will protect the installed board edges or a cavity batten will help to keep the cavity clean as the following leaf is built (see Figures 3 and 4).

15.8 Where openings such as doors and windows are in close proximity, it is recommended that a continuous lintel or cavity tray is used. Individual lintels or cavity trays should have stopends and be adequately drained.

15.9 The boards can be cut, using a sharp knife or fine-toothed saw, to fit around windows, doors and air bricks. It is essential that cut pieces completely fill the spaces for which they are intended and are adequately secured. Gaps should not be left in the insulation.

15.10 All building involving the boards, particularly work which is interrupted, must conform to BS 5628-3 : 2005, Sections A4.1.3.2, A4.1.3.9, A5.1.1.3 and A5.4.4.

Figure 3 Use of cavity batten

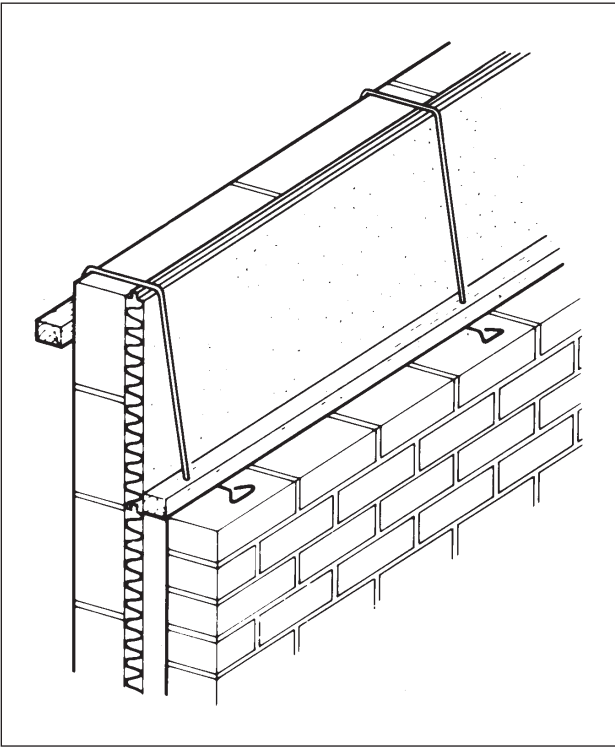
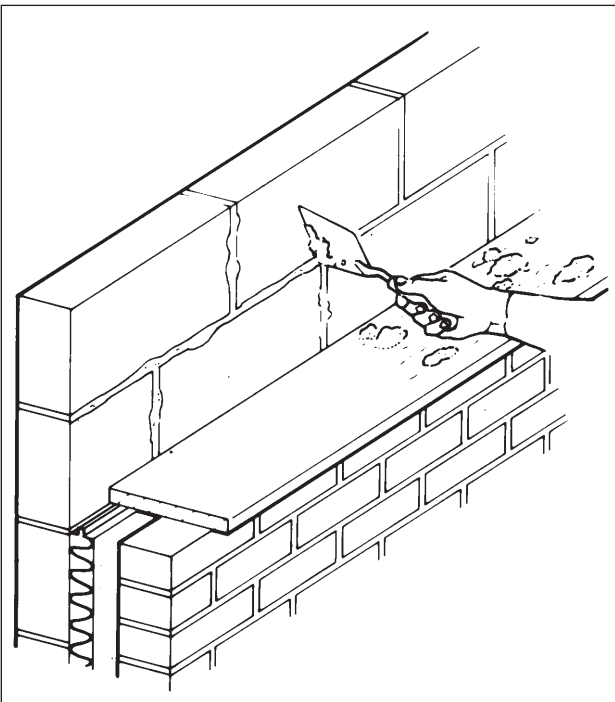


Figure 4 Use of cavity board



Technical Investigations

The following is a summary of the technical investigations carried out on Ballytherm BTCW Tongue-and-Groove Cavity Wall Insulation.

16 Investigations

16.1 The technical data in the Agrément issued by the Irish Agrément Board were evaluated in the context of UK practice, conditions and building regulations.

16.2 An examination was made of test data to EN 13165 : 2001 relating to:

- dimensions
- squareness
- density
- flatness under one-sided wetting
- thermal resistance
- λ value
- compressive strength at 10% compression
- dimensional stability at specified temperature and humidity
- behaviour in relation to fire
- deformation under specified compressive load and temperature conditions
- diffusion tight property of foil facing.

16.3 A condensation risk analysis was performed.

Bibliography

BS 476-7 : 1997 *Fire tests on building materials and structures — Method of test to determine the classification of the surface spread of flame of products*

BS 5250 : 2002 *Code of practice for control of condensation in buildings*

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

BS 5628-3 : 2005 *Code of practice for use of masonry — Materials and components, design and workmanship*

BS 8000-3 : 2001 *Workmanship on building sites — Code of practice for masonry*

BS DD 140-2 : 1987 *Wall ties — Recommendations for design of wall ties*

BS EN 845-1 : 2003 *Specification for ancillary components for masonry — Ties, tension strips, hangers and brackets*

BS EN 13914-1 : 2005 *Design, preparation and application of external rendering and internal plastering — External rendering*

BS EN ISO 6946 : 1997 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*

EN 13165 : 2001 *Thermal insulation products for buildings — Factory made rigid polyurethane foam (PUR) products — Specification*

Conditions of Certification

17 Conditions

17.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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.

17.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

17.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- remain covered by a valid Irish Agrément; and
- are reviewed by the BBA as and when it considers appropriate.

17.4 In granting this Certificate, the BBA is not responsible for:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

17.5 Any information relating to the manufacture, supply, installation, use and maintenance of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date 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. 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 manufacture, supply, installation, use and maintenance of this product/system.



In the opinion of the British Board of Agrément, Ballytherm BTCW Tongue-and-Groove Cavity Wall Insulation is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 07/4422 is accordingly awarded to Ballytherm Ltd.

On behalf of the British Board of Agrément

Date of issue: 16th March 2007

A handwritten signature in black ink, appearing to read 'G. A. Cooper'.

Chief Executive