



Springvale EPS Ltd

75 Springvale Road
Doagh
Ballyclare
Co Antrim BT39 OSS
Tel: 028 9334 0203 Fax: 028 9334 1159
e-mail: sales@springvale.com

CI/SfB

(21.9) Km1 (M2)

**Agrément
Certificate
No 95/3160**

Second issue*

Designated by Government
to issue
European Technical
Approvals

SPRINGVALE FULFIL AND SPRINGVALE FULFIL PLATINUM CAVITY WALL BOARD

Isolation de murs à double paroi
Kerndämmung

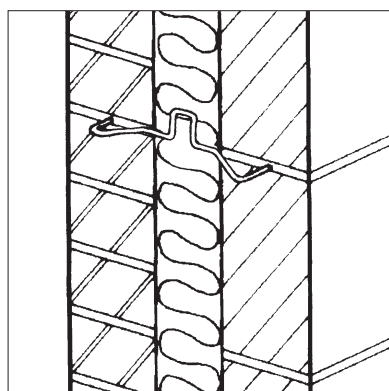
Product

• THIS CERTIFICATE RELATES TO SPRINGVALE FULFIL AND SPRINGVALE FULFIL PLATINUM CAVITY WALL BOARD, RIGID EXPANDED POLYSTYRENE INSULATION BOARD WITH TONGUE-AND-GROOVE EDGE ON ALL SIDES.

• The product is for use in new buildings up to and including 12 metres in height.


• The product is installed during construction and is for use as a full 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.




Regulations

1 The Building Regulations 2000 (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, Springvale Fulfil and Springvale Fulfil Platinum Cavity Wall Board, 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:	C4	Resistance to weather and ground moisture
Comment:		Walls incorporating the product can meet this Requirement. See sections 7.2, 7.4, 7.6, 7.7 and 10.2 of this Certificate. In addition the product may be used in situations where it bridges the dpc. See section 10.1 of this Certificate.
Requirement:	L1	Conservation of fuel and power
Comment:		The product can meet or contribute to meeting this Requirement. See sections 12.2 and 12.3 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is acceptable. See section 13 of this Certificate.

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

 In the opinion of the BBA, Springvale Fulfil and Springvale Fulfil Platinum Cavity Wall Board, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and related 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. See section 13 of this Certificate.
Regulation:	12	Structural fire precautions
Standard:	D2.2	Non-combustibility
Comment:		The product is combustible and its use is restricted by this Standard. See sections 8.4 and 8.5 of this Certificate.
Standard:	D4.1	Concealed spaces (cavities)
Comment:		Walls incorporating the product must comply with this Standard. See section 8.4 of this Certificate.
Regulation:	17	Resistance to moisture
Standard:	G2.6	Resistance to moisture from the ground
Comment:		The product can satisfy this Standard. See section 10.1 of this Certificate.
Standard:	G3.1	Resistance to precipitation
Comment:		Walls incorporating the product can satisfy this Standard. See sections 7.2, 7.4, 7.6 and 7.7 of this Certificate. See also section 10.2 of this Certificate.
Regulation:	22	Conservation of fuel and power
Standard:	J2.1	Standards for buildings in purpose group 1
Standard:	J3.1	Standards for buildings in purpose groups 2 to 7
Comment:		The product can satisfy or contribute to satisfying these Standards. See sections 12.2 and 12.3 of this Certificate.

3 The Building Regulations (Northern Ireland) 2000



In the opinion of the BBA, Springvale Fulfil and Springvale Fulfil Platinum Cavity Wall Board, 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 1.3 of this Certificate.
Regulation:	C4	Resistance to ground moisture and weather
Comment:		Walls incorporating the product can satisfy this Regulation. See sections 7.2, 7.4, 7.6, 7.7 and 10.2 of this Certificate. In addition the product may be used where it bridges the dpc. See section 10.1 of this Certificate.
Regulation:	E4	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	Building fabric
Comment:		The product can satisfy or contribute to satisfying this Regulation. See sections 12.2 and 12.3 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.*

Technical Specification

5 Description

5.1 Springvale Fulfil and Springvale Fulfil Platinum Cavity Wall Board is individually moulded from expandable polystyrene bead without the use of CFC or HCFCs. Each board incorporates a tongue-and-groove edge on all sides. In addition, the boards are faced on one side with tapered protrusions, designed to shed water away from the internal leaf and act as a guide to the construction of the outer leaf (see Figure 1). Each board is marked identifying the correct orientation for the installation.

5.2 The boards are available in SD⁽¹⁾ and Platinum grades and are 1200 mm wide by 447 mm high, supplied in overall thicknesses of 75 mm or 100 mm. The 5 mm thick tapered protrusions are included within the board thickness.

(1) Manufactured to BS 3837-1 : 1986(1996).

6 Delivery and site handling

6.1 The boards are delivered to site in polythene-wrapped packs. Each pack contains a label bearing the manufacturer's trade name and the BBA logo incorporating the Certificate number.

6.2 The product must be protected from prolonged exposure to sunlight and should be stored either under cover or protected with light-coloured, opaque polythene sheets. Where possible, packs should be stored inside. If stored outside, the products should be out of contact with ground moisture and raised above ground level.

6.3 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. The boards must not be exposed to naked flame or other ignition sources.

Design Data

7 General

7.1 Springvale Fulfil and Springvale Fulfil Platinum Cavity Wall Board are 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.



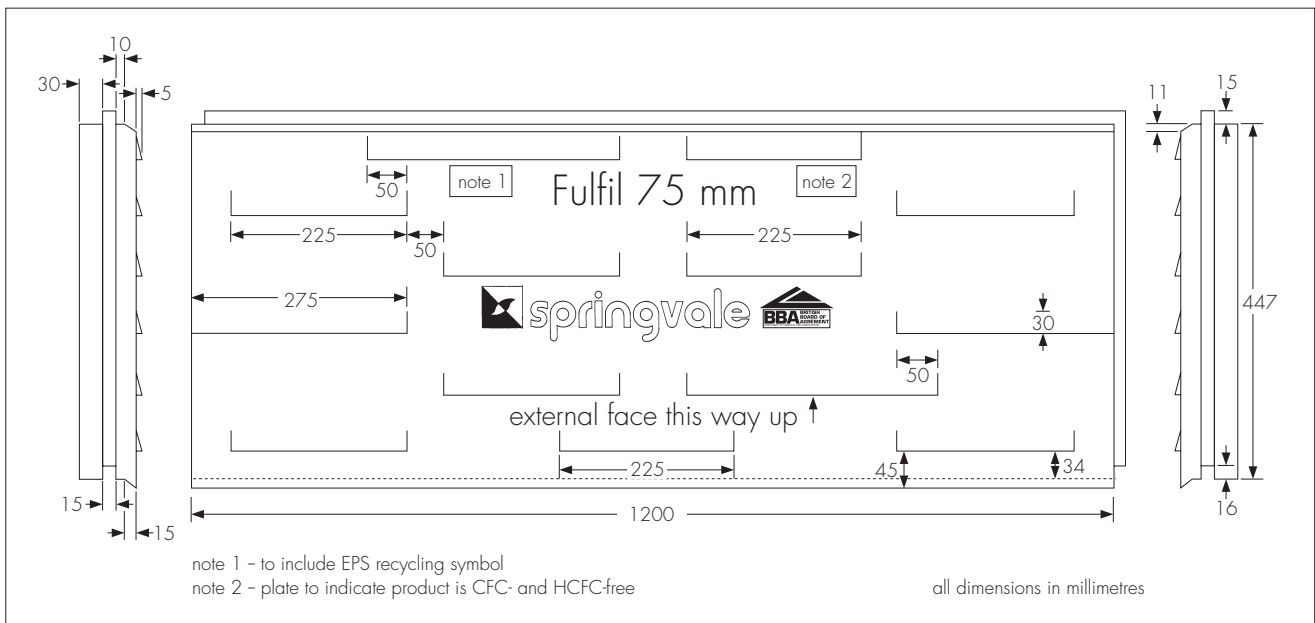
7.2 Buildings subject to national Building Regulations should be constructed in accordance with the relevant recommendations of:

BS 5628-3 : 1985. In particular, clause 21 of the Code of Practice *Exclusion of moisture* should be followed, in that the designer selects a construction appropriate to the local wind-driven rain index, paying due regard to the design detailing, workmanship and materials to be used.


BS 5390 : 1976(1984), Section 3 — where the walls incorporate stone or cast stone.

BS 8000-3 : 1989.


Figure 1 Fulfil panel



7.3 Other buildings not subject to these Regulations should also be built in accordance with BS 5628-3 : 1985, BS 5390 : 1976(1984) and BS 8000-3 : 1989.

 7.4 As with all cavity wall insulation, the construction and 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* (see section 10.3 of this Certificate). They are particularly important in areas subject to severe driving rain.

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

 7.6 To reduce the risk of water penetration, raked or recessed mortar joints should be avoided in high exposure areas.


7.7 The product can be used in any exposure zone in buildings up to and including 12 metres in height. 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.

7.8 At the design stage, the specifier shall request that the Certificate holder carries out a detailed assessment as to the use of this product in the walls of the project. As work progresses the Certificate holder shall be invited to advise on the quality of installation required for this product. Above average site supervision is recommended during installation.

7.9 The Certificate holder must give written approval for the installation to take place in the specified building.

8 Behaviour in relation to fire

8.1 The board 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 the 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 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:

- timber lintels, window or door frames, or end of timber joints
- 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 9

Scotland

Technical Standard D4.1

Northern Ireland

Technical Booklet E, paragraphs 3.27 to 3.30.



8.5 The product is combustible, but it may be used in a wall on or less than one metre from a relevant boundary in accordance with the exceptions permitted in Table D2.2 to Technical Standards to the Building Standards (Scotland) Regulations.

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

Technical Standards, Part F, *Provisions deemed to satisfy the Technical Standards*

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 C, Section 4

Scotland

Technical Standard G2.6. *Provisions deemed to satisfy the Technical Standards*

Northern Ireland

Technical Booklet C, Section 1.6.

10.2 Constructions incorporating the products and built in accordance with BS 5628-3 : 1985 will resist the transfer of precipitation to the inner leaf and satisfy the national Building Regulations:

England and Wales

Requirement C4

Scotland

Technical Standard G3.1

Northern Ireland

Regulation C4.

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

- (1) wall ties are installed correctly and are clean. Wall ties must slope downwards towards the external leaf
- (2) excess mortar is cleaned from the cavity face of the leading leaf and any debris removed from the cavity
- (3) mortar droppings are cleaned from the exposed edges of installed boards
- (4) boards are properly installed with tongues upwards and engaged
- (5) installation is carried out to the highest level on each wall or the top edge of the insulation is protected by a cavity tray
- (6) at lintel level, a cavity tray, stopends and weep holes must be provided
- (7) both external and internal corner details must incorporate a vertical dpc positioned between the fulfil board and the external leaf, returning along each direction a minimum of 150 mm.

11 Water vapour penetration

11.1 The boards have a minimum water vapour resistivity value of $145 \text{ MNsg}^{-1}\text{m}^{-1}$ for SD grade and $200 \text{ MNsg}^{-1}\text{m}^{-1}$ for Platinum grade and will therefore provide significant resistance to water vapour transmission. Joints between boards will facilitate the passage of water vapour under normal conditions of temperature and humidity.

11.2 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.

12 Thermal insulation

12.1 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 insulation board may be taken as $0.038 \text{ Wm}^{-1}\text{K}^{-1}$ for SD grade and $0.031 \text{ Wm}^{-1}\text{K}^{-1}$ for Platinum grade. Thermal calculations should not include the 5 mm thickness provided by the tapered protrusions.



12.2 The requirement for limiting heat loss through the building fabric can be satisfied if the U values of the building elements, including thermal bridging, do not exceed the maximum values in the relevant Elemental Methods given in the national Building Regulations:

England and Wales

Approved Document L

Scotland

Technical Standards, Part J

Northern Ireland

Technical Booklet F.

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

13 Durability



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

Installation

14 General

14.1 The inner leaf is constructed ahead of the outer leaf prior to the installation of Springvale Fulfil and Springvale Fulfil Platinum Cavity Wall Board.

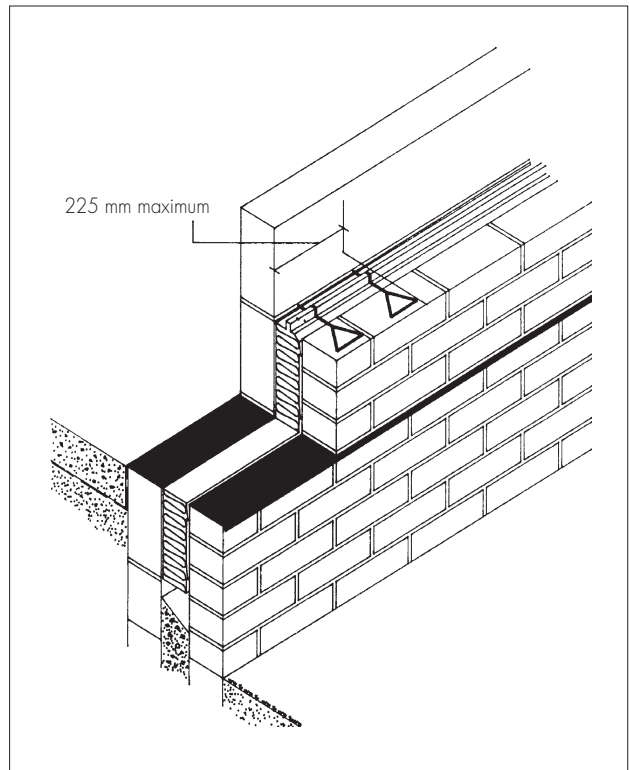
14.2 Double-triangle wall ties, without drips, but otherwise conforming to BS 1243 : 1978 are suitable for use with this product. Other ties approved by the Certificate holder may also be suitable.

14.3 Additional wall ties at 300 mm vertical centres within 225 mm of all openings are recommended in BS 5628-3 : 1985. However, for this product, this would involve piercing the boards and may introduce an unacceptable risk of water penetration. Therefore, it is recommended that an additional wall tie is included within 225 mm of the opening on each board course level to satisfy the structural requirements of the wall (see Figure 2).

14.4 The boards should always be installed to the highest level of each wall.

14.5 Adequate supervision of the installation should be maintained and the Certificate holder's specialists should have right of access to site to provide demonstrations and ensure correct installation.

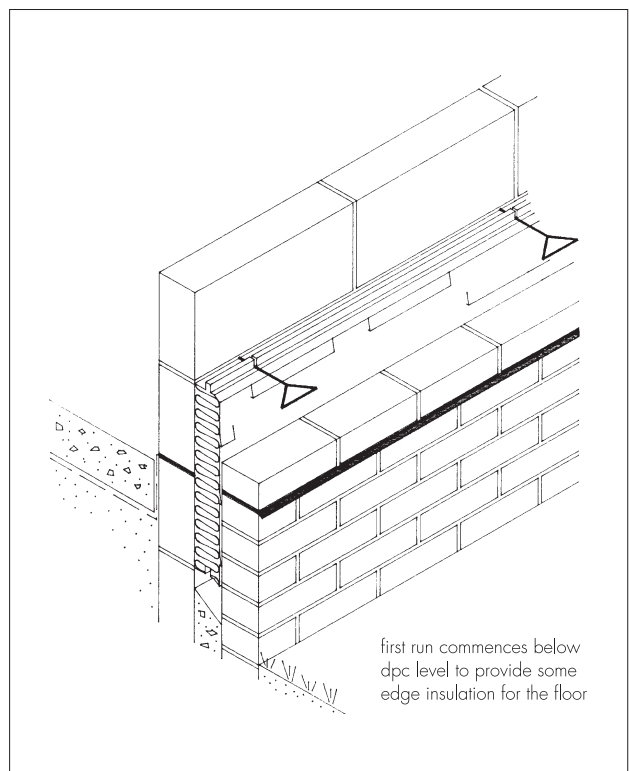
Figure 2 Reveal detail with double wall ties



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 the damp-proof course level to provide some edge insulation for the floor (see Figure 3).

Figure 3 Building in the first row of boards



15.2 A section of the leading leaf is built up to a course above the next row of wall ties which are placed at a vertical spacing of 450 mm and not more than 900 mm horizontally (see Table 9 of BS 5628-3 : 1985).

15.3 After cleaning excess mortar from the cavity face of the inner leaf, it is essential that the boards are placed between the upper and lower wall ties as follows:

- board horizontal with tongue uppermost
- board tapered protrusions facing the outer leaf
- vertical board joints closely butted
- all wall ties sloping downwards towards the outer leaf.

15.4 The tongue is notched with a sharp knife or fine-tooth saw to allow insertion of the double-triangle wall ties. Care must be taken to ensure that only minimal damage is incurred during this process. Additional vertical twist ties to BS 1243 : 1978 may be required to satisfy the structural requirements of BS 5628-3 : 1985, where the overall cavity width exceeds 75 mm and/or to ensure adequate retention of boards or cut pieces.

15.5 The other leaf is built up to the level of the top of the boards, with its inner face in contact with the boards.

15.6 Successive sections of wall, incorporating wall ties, are constructed and the boards are installed as work proceeds up to the highest level of each wall. All boards should be tightly interlocked with vertical joints staggered.

15.7 After each section of the leading leaf is built, mortar droppings should be 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 the installed board edges and make cleaning easier (see Figure 4).

Cut pieces

15.8 Boards can be cut using a fine-toothed saw, to fit around windows, doors, air bricks. It is essential that cut pieces of board completely fill the spaces for which they are intended and that gaps are not left in the insulation.

Wall openings

15.9 Where openings such as doors and windows are in close proximity it is recommended that a continuous lintel or cavity tray is used. Damp-proofing at lintel level must be provided with stopends and weep holes.

15.10 Where required, door and window reveals should incorporate a cavity closure depending on the set-back of the frame (see Figure 5). It is recommended that BBA approved cavity closers are used.

Figure 4 Use of cavity board when cleaning off excess mortar

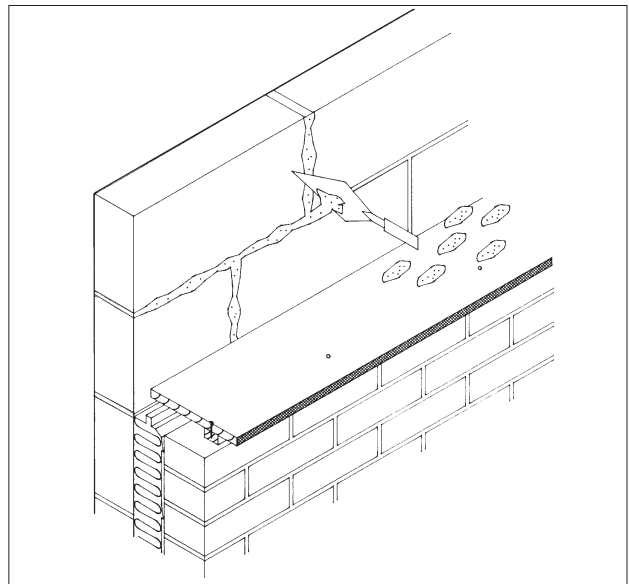
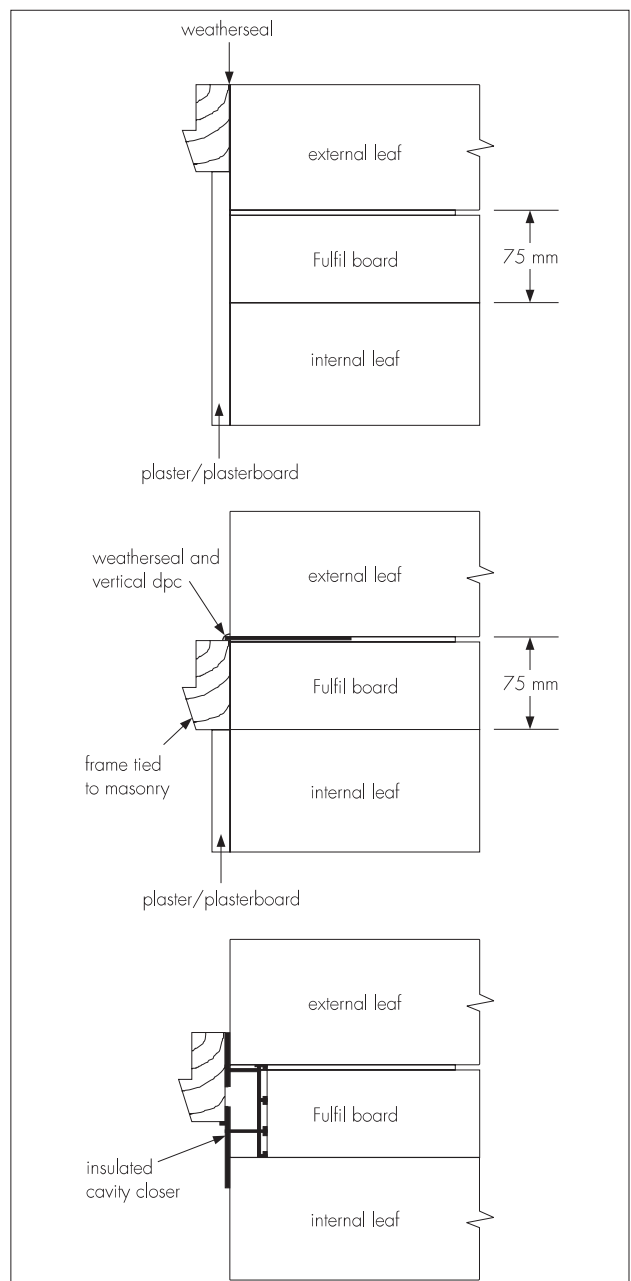


Figure 5 Reveal details



Corners

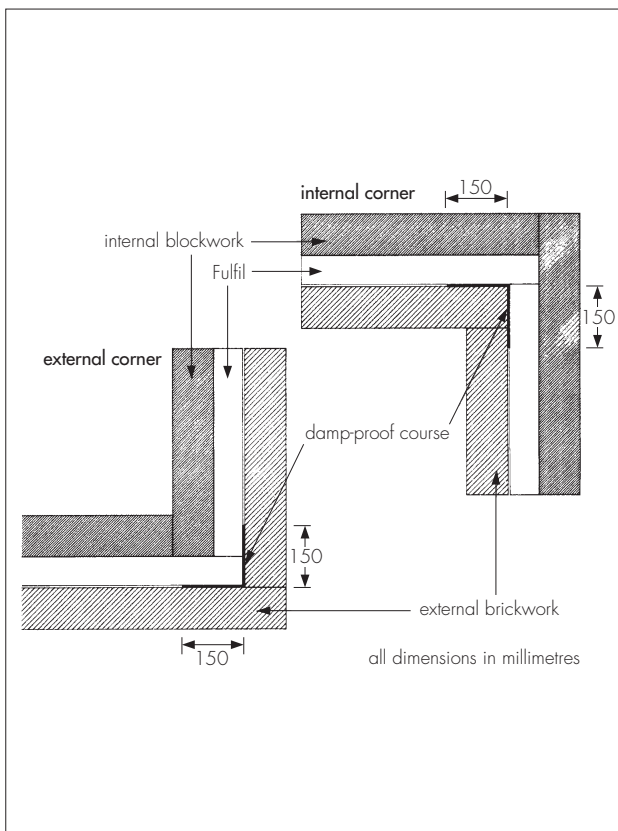
15.11 Corner details are formed by interlocking the boards. It is important that they are closely butt-jointed and therefore the tongue should be carefully removed where necessary so that all interfaces are uninterrupted. The tapered flutes are removed at internal corners only. All corner details incorporate a vertical dpc (see Figure 6).

15.12 If installation of boards is terminated at any other levels, the top edge of the insulation must be protected by a cavity tray and alternate perpendicular joints raked out to provide adequate drainage of water from this tray.

Protection

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

Figure 6 Corner detail



Technical Investigations

The following is a summary of the technical investigations carried out on Springvale Fulfil and Springvale Fulfil Platinum Cavity Wall Board.

16 Tests

As part of the assessment tests were carried out to determine:

density
dimensional accuracy.

17 Investigations

An examination was made of test data relating to:
water resistance of a cavity wall with the boards installed
thermal transmission properties
compressive strength (at 10% strain)
cross-breaking strength
dimensional stability
water absorption
water vapour permeability
behaviour in fire
condensation risk.

18 Other investigations

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.

Bibliography

- BS 1243 : 1978 *Specification for metal ties for cavity wall construction*
- BS 3837 *Expanded polystyrene boards*
- BS 3837-1 : 1986(1996) *Specification for boards manufactured from expandable beads*
- BS 5390 : 1976(1984) *Code of practice for stone masonry*
- BS 5628 *Code of practice for use of masonry*
- BS 5628-3 : 1985 *Materials and components, design and workmanship*
- BS 8000 *Workmanship on building sites*
- BS 8000-3 : 1989 *Code of practice for masonry*

Conditions of Certification

19 Conditions

19.1 This Certificate:

- (a) relates only to the product that is described, installed, used and maintained as set out in this Certificate;
- (b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;
- (c) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;
- (d) is copyright of the BBA.

19.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, shall be construed as references to such publication in the form in which it was current at the date of this Certificate.

19.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabricating process(es) thereof:

- (a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;

- (b) continue to be checked by the BBA or its agents; and

- (c) are reviewed by the BBA as and when it considers appropriate.

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

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

19.5 Any recommendations relating to the use or installation 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, common law or other duty which may 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, 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 installation and use of this product.



In the opinion of the British Board of Agrément, Springvale Fulfil and Springvale Fulfil Platinum Cavity Wall Board is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 95/3160 is accordingly awarded to Springvale EPS Ltd.

On behalf of the British Board of Agrément

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

Date of Second issue: 15th October 2001

Chief Executive

**Original Certificate issued 10th October 1995. This amended version includes additional grade of the product and reference to the revised Building Regulations, Standards, introduction of CDM Regulations and new Conditions of Certification.*