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Agrément Certificate
No 04/4154

PRODUCT SHEET 1 — SURECAV CAVITY WALL SPACER SYSTEM

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to the SureCav Cavity Wall Spacer System, a moulded HDPE panel with spacer protrusions and joining strips.

THIS CERTIFICATE INCLUDES:

- factors relating to compliance with UK Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



KEY FACTORS ASSESSED

Behaviour in relation to fire — the use of the product does not prejudice the fire-resistance properties of the wall (see section 4).

Dampness and liquid water penetration — when the system is used in situations where it bridges the dpc in walls, dampness from the ground will not pass through to the inner leaf and the wall will resist the passage of precipitation to the inner leaf, provided it is designed and detailed (see section 6).

Condensation risk — the risk of interstitial condensation occurring within a wall will depend on the thermal properties and vapour resistance of the other materials used in the construction and the internal and external conditions (see section 7).

Durability — the system is durable and will remain effective for the life of the building in which it is installed (see section 8).

The BBA has awarded this Agrément Certificate for the SureCav Cavity Wall Spacer System to SureCav Ltd as fit for its intended use provided it is installed, used and maintained as set out in this Agrément Certificate.

On behalf of the British Board of Agrément

Date of First issue: 18 November 2004

Date of Second issue: 12 November 2007

Greg Cooper: Chief Executive

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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In the opinion of the BBA, the SureCav Cavity Wall Spacer System, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2000 (as amended) (England and Wales)

Requirement:	B3	Internal fire spread (structure)
Comment:		Walls incorporating the system can meet this Requirement. See sections 4.2 to 4.4 of this Certificate.
Requirement:	C2(a)(b)(c)	Resistance to moisture
Comment:		Tests for water resistance indicate that walls incorporating the system can meet this Requirement, provided they comply with the conditions set out in sections 3.4, 6.1, 6.2, 7.1 and 7.2 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		Compliance with this Requirement will depend on the construction of the wall. See sections 7.1 and 7.2 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The system is acceptable. See section 8 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8	Fitness and durability of materials and workmanship
Regulation:	8	Fitness and durability of materials and workmanship
Comment:		The system can contribute to a construction meeting this Regulation. See section 8 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	2.4	Cavities
Standard:	2.6	Spread to neighbouring buildings
Comment:		Walls incorporating the system must satisfy these Standards, with reference to clauses 2.4.1 ⁽¹⁾⁽²⁾ , 2.4.2 ⁽¹⁾⁽²⁾ , 2.4.7 ⁽¹⁾ , 2.4.9 ⁽²⁾ , 2.6.5 ⁽¹⁾ and 2.6.6 ⁽²⁾ . See section 4.4 of this Certificate.
Standard:	3.4	Moisture from the ground
Comment:		The system can satisfy this Standard, with reference to clauses 3.4.1 ⁽¹⁾⁽²⁾ and 3.4.5 ⁽¹⁾⁽²⁾ . See section 6.1 of this Certificate.
Standard:	3.10	Precipitation
Comment:		Tests for water resistance indicate that walls incorporating the system can satisfy this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ , 3.10.3 ⁽¹⁾⁽²⁾ , 3.10.5 ⁽¹⁾⁽²⁾ and 3.10.6 ⁽¹⁾⁽²⁾ , provided they comply with the conditions set out in sections 3.4, 6.1 and 6.2 of this Certificate.
Standard:	3.15	Condensation
Comment:		The system may contribute to satisfying this Standard, with reference to clauses 3.15.1 ⁽¹⁾ , 3.15.3 ⁽¹⁾ and 3.15.4 ⁽¹⁾ . See sections 7.1 and 7.2 of this Certificate. (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



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

Regulation:	B2	Fitness of materials and workmanship
Comment:		The system is acceptable. See section 8 of this Certificate.
Regulation:	C4	Resistance to ground moisture and weather
Comment:		Tests for water resistance indicate that walls incorporating the system can satisfy this Regulation, provided they comply with the conditions set out in sections 3.4, 6.1 and 6.2 of this Certificate.
Regulation:	C5	Condensation
Comment:		Walls incorporating the system can contribute to satisfying this Regulation. See sections 7.1 and 7.2 of this Certificate.
Regulation:	E3	Internal fire spread – Linings
Comment:		Walls incorporating the system can satisfy this Regulation. See sections 4.2 to 4.4 of this Certificate.

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: *2 Delivery and site handling* (2.3 and 2.4)

Non-regulatory Information

NHBC Standards 2007

NHBC accepts the use of the SureCav Cavity Wall Spacer System, when installed and used in accordance with this Certificate, in relation to NHBC Standards, Chapter 6.1 *External masonry walls* or Chapter 6.2 *External timber-framed walls*.

Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, the SureCav Cavity Wall Spacer System, when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *External walls*.

General

The SureCav Cavity Wall Spacer System is installed during construction and acts as a spacer to ensure a minimum cavity width in external masonry or timber-frame cavity walls, with stone outer leafs.

The system may also be used in conjunction with conventional brick out leafs and with cavity wall insulation board or batts in masonry constructions.

Technical Specification

1 Description

1.1 The SureCav Cavity Wall Spacer System is a black, extruded and vacuum formed, high-density polyethylene (HDPE) sheet, with raised spacer protrusions at 260 mm centres (see Figure 1). The sheets interlock via plastic joining H-section profile strips at all edges and corners when installed.

1.2 The system has characteristics of:

Panel

length (mm)	1200
width (mm)	450
total thickness (mm)	50
sheet thickness (mm)	2
spacer height (mm)	48

Joining strips

horizontal strips length (mm)	900
vertical face strips length (mm)	390
vertical corner strips length (mm)	390

1.3 Ancillary items used with the panel include proprietary steel wire wall ties and clips.

1.4 Additional vertical twist ties in accordance with BS DD 140-2 : 1987 or BS EN 845-1 : 2003 may be required for structural stability in accordance with BS 5628-3 : 2005, where the overall cavity width exceeds 75 mm (see section 10).

2 Delivery and site handling

2.1 The panels are delivered to site in packs of 10, wrapped in polyethylene. A label bears the product and manufacturer's name, and the BBA identification mark incorporating the number of this Certificate.

2.2 Joining strips are packed in bundles of 20 and wrapped in polyethylene.

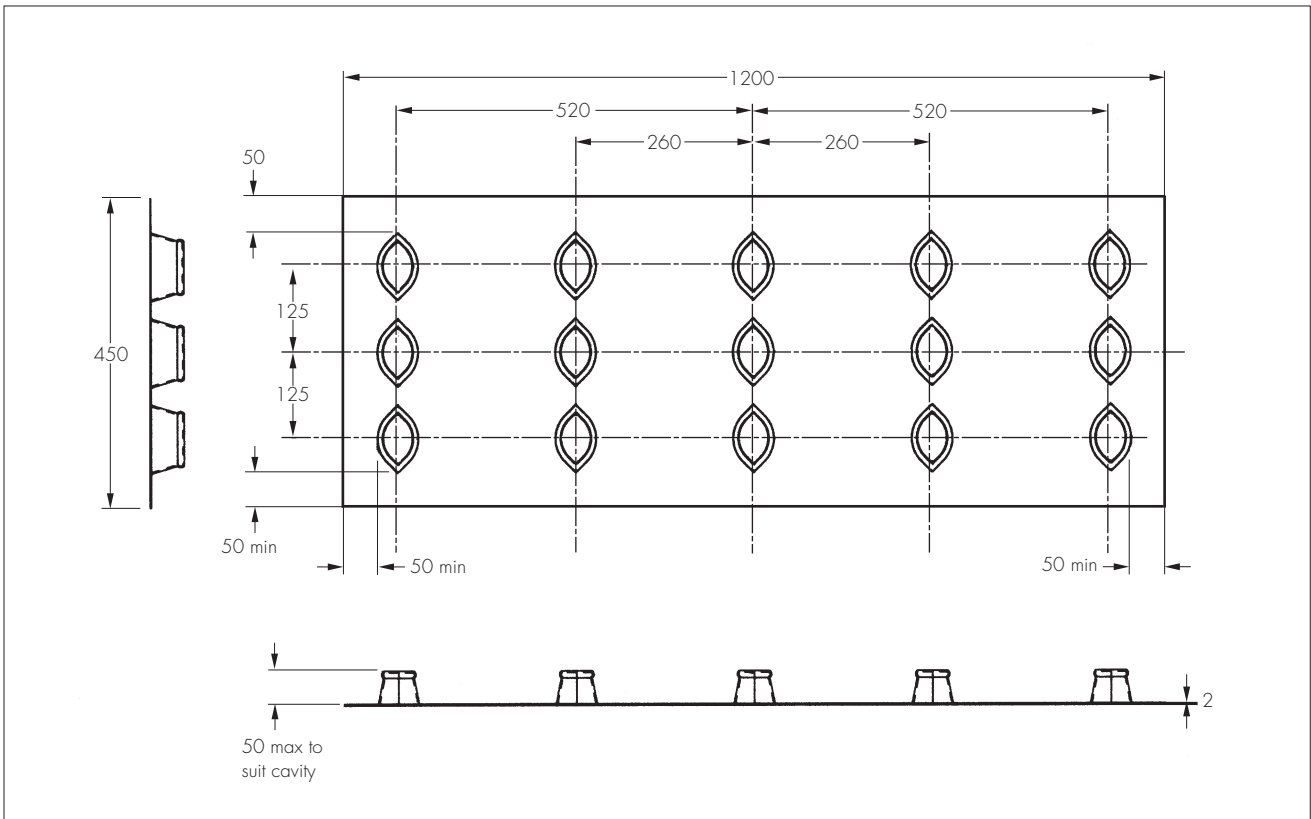
2.3 Panels should be stored flat, under cover and protected from sunlight and high temperatures.

2.4 The panels must not be exposed to open flame on site.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the SureCav Cavity Wall Spacer System.

Figure 1 Panel detail (all dimensions in mm)



Design Considerations

3 Use

3.1 The SureCav Cavity Wall Spacer System is satisfactory for use in new, external cavity wall constructions. The system ensures a minimum cavity width of 50 mm when using natural or reconstituted stone outer leaves in conjunction with:

- conventional masonry inner leaves, with or without partial fill cavity wall insulation (masonry includes clay, calcium silicate, concrete and stone units)
- timber-frame inner leaf.

3.2 The system may also be used with conventional clay and calcium silicate brick and concrete block outer leaves.

3.3 It is effective in maintaining a residual cavity width in new external cavity walls. However, it is essential that such walls are designed and constructed to incorporate the normal precautions to prevent moisture penetration.

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

- BS 5628-3 : 2005. In particular clause 5.5.2 of the Code of Practice *Rain penetration* 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 8000-3 : 2001.

3.5 Other buildings not subject to these Regulations should also be built in accordance with the Standards given in section 3.1.

3.6 As with all cavity walls, 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*.

3.7 The system can be used in any exposure zone in buildings up to 12 m high. However, the use of the system 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.

4 Behaviour in relation to fire

4.1 The use of the panels does not prejudice the fire resistance properties of the wall.



4.2 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, Volume 1, Diagram 13 and Volume 2, Diagram 34

Northern Ireland — Technical Booklet E, Diagram 3.5.

4.3 A summary of these provisions is given here:

England and Wales and Northern Ireland

- the wall must consist of masonry inner and outer leaves, each at least 75 mm thick.
- the cavity must not be more than 300 mm wide (in Northern Ireland only).
- the cavity must be closed at the top of the wall and at the top of any opening.
- in addition to the panels, only the following should be placed in, or exposed to, the cavity:
 - thermal insulation board or batts
 - 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.



4.4 For constructions not covered by sections 4.2 and 4.3 cavity barriers must be provided to comply with:

England and Wales — Approved Document B, Section 6, Volume 1 and Section 9, Volume 2

Scotland — Mandatory Standards 2.4 and 2.6, clauses 2.4.1⁽¹⁾⁽²⁾, 2.4.2⁽¹⁾⁽²⁾, 2.4.7⁽¹⁾, 2.4.9⁽²⁾, 2.6.5⁽¹⁾ and 2.6.6⁽²⁾

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

Northern Ireland — Technical Booklet E, Paragraphs 3.35 to 3.38.

5 Proximity of flues and appliances

When installing the system 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.

6 Dampness and liquid water penetration



6.1 When the system 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 wall is detailed in accordance with the requirements and provisions of the national Building Regulations:

England and Wales — Approved Document C, Section C2(a)

Scotland — Mandatory Standard 3.4, clauses 3.4.1⁽¹⁾⁽²⁾ and 3.4.5⁽¹⁾⁽²⁾

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

Northern Ireland — Technical Booklet C, Section 1.6.

6.2 Constructions incorporating the system 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 C, Section C2(b)

Scotland — Mandatory Standard, 3.10 clauses 3.10.1⁽¹⁾⁽²⁾, 3.10.3⁽¹⁾⁽²⁾, 3.10.5⁽¹⁾⁽²⁾ and 3.10.6⁽¹⁾⁽²⁾

(1) Technical Handbook (Domestic).

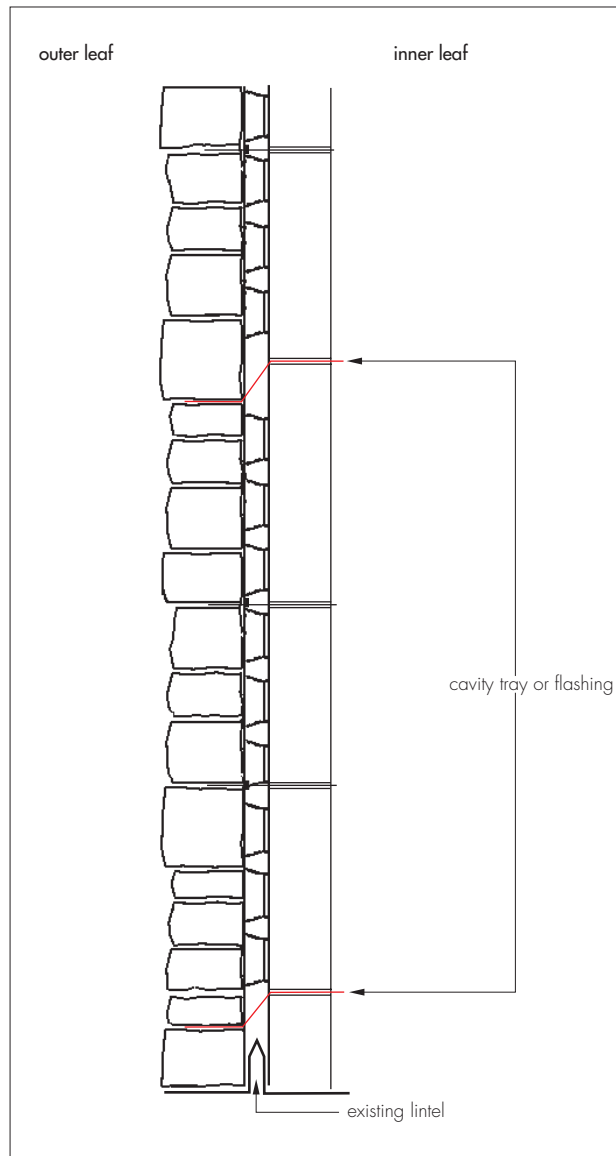
(2) Technical Handbook (Non-Domestic).

Northern Ireland — Regulation C4.

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

- wall ties and fixings are installed correctly and are clean
- excess mortar is cleaned from the cavity face of the leading leaf and debris removed from the cavity
- installation is carried out to the highest level on each wall or the top edge of the panel is protected by a cavity tray
- at lintel level, a cavity tray, stopends and weepholes, must be provided (see Figure 2). The cavity tray is fitted with stop ends, to prevent water being discharged into the cavity.

Figure 2 Cavity tray detail



7 Condensation risk



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

7.2 The cavity behind the panel should be vented to the outside with openings equivalent to an open brick perpend every 1.5 m. These openings should preferably be at high level, but care should be taken to minimise the risk of rain ingress. For timber-frame walls, the openings can be below the lowest timber. Alternatively, ventilation via a low-level air brick per metre run should be used (see also section 10.14).

7.3 If the system is to be used in the external walls of rooms expected to have high humidities, care must be taken to ensure adequate ventilation provision is available to avoid possible problems from the formation of interstitial condensation in the internal wall leaf.

8 Durability



The panel is durable and will remain effective for the life of the building in which it is installed.

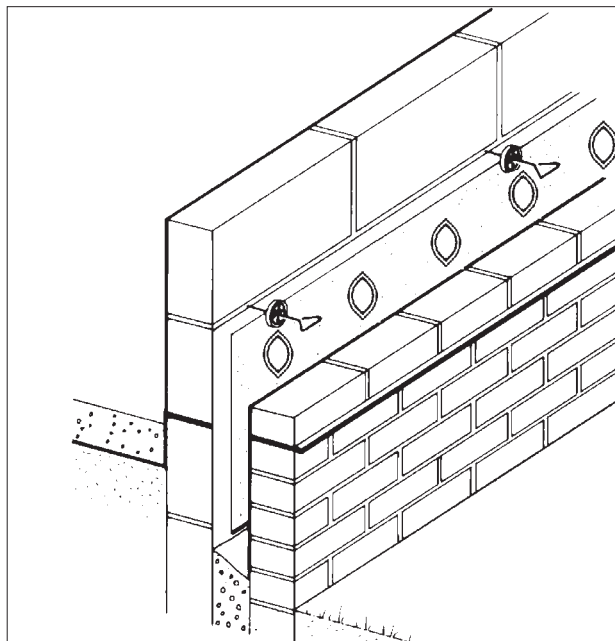
9 General

- 9.1 The walls are constructed with the SureCav Cavity Wall Spacer panel fixed to the cavity face of the inner leaf in accordance with the Certificate holder's instructions.
- 9.2 The panel should always be placed lengthways with the flat face outermost and the protrusions in contact with the inner leaf.
- 9.3 The panels are joined together horizontally and vertically with joining strips between all edges and corners.
- 9.4 It is essential that the spacing of the wall ties/clips allows the long edge of each panel to be secured at a minimum of two points.
- 9.5 The panels can be sawn to fit around openings and corners.

10 Procedure

- 10.1 A section of the inner leaf is built with the first row of wall ties, at approximately 900 mm horizontal spacing, where the panel is to begin. It is recommended that the wall ties are not placed directly on the damp-proof course. The first run of panels may commence below damp-proof course level (see Figure 3).

Figure 3 First run of panels



- 10.2 The inner leading leaf is built up to the required height, with the second row of wall ties placed at a vertical spacing of 450 mm, ensuring the drip of the tie is located halfway across the residual cavity width.
- 10.3 Excess mortar is cleaned from the cavity face of the leading leaf, and the panels are placed between the wall ties, behind the retaining clips. Vertical joining strips lock the panels together.
- 10.4 It is essential that all wall ties slope downwards towards the outer leaf and do not cut through protrusions.
- 10.5 The horizontal spacing of wall ties should be 900 mm or 600 mm depending on the thickness of the thinner leaf. Additional ties may be required to satisfy the structural requirements of BS 5628-3 : 2005 and/or to ensure adequate retention of the panels.
- 10.6 The outer leaf is then built up to the level of the top of the panels.
- 10.7 The inner leaf is built up and the second row of panels interlocked via joining strips with the panels below. It is important to ensure that horizontal joining strips fit between ties leaving the diameter of the tie the only space in the horizontal joint.
- 10.8 All panels 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 Figures 4 and 5).
- 10.9 If a wall tie coincides with a column of protrusions, the point of penetration around the wall tie must be sealed, eg with duct tape or silicone sealant.
- 10.10 The panels can be cut to size and joined with vertical corner strips.
- 10.11 The outer leaf is completed by building against the panels up to the level required (see Figure 6).

Figure 4 Typical details of block and natural stone outer leaf wall with partial fill insulation

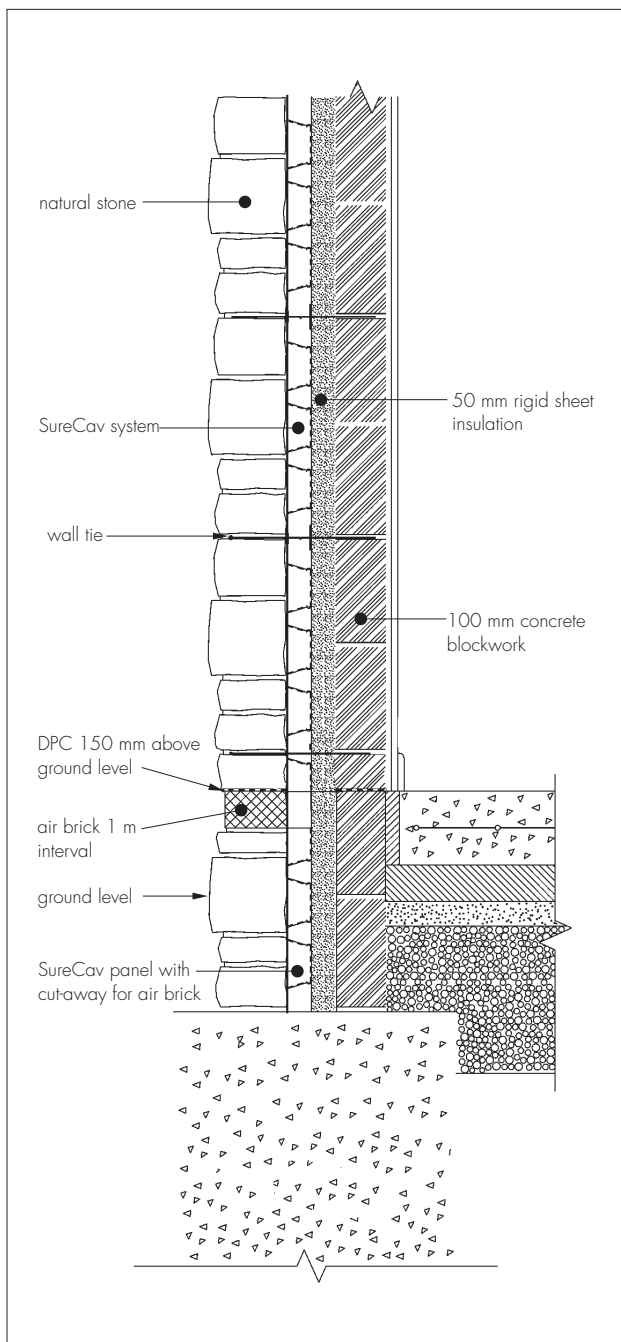
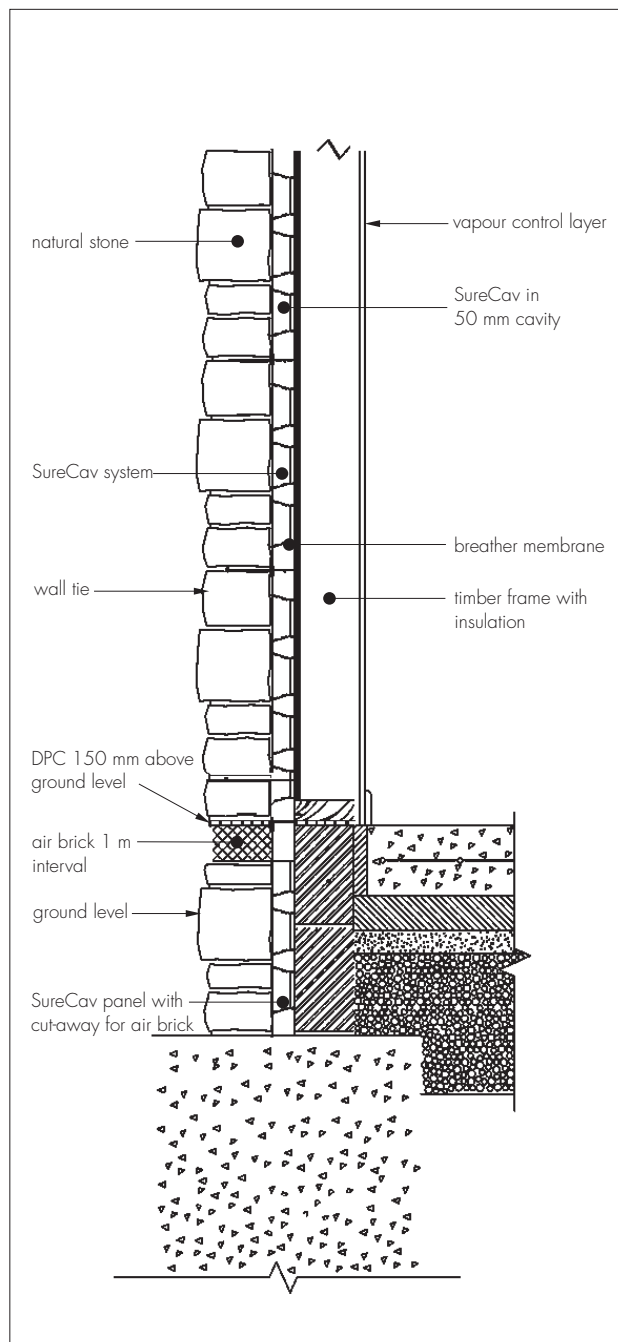


Figure 5 Typical detail of timber frame with brick or stone outer leaf wall



Wall openings

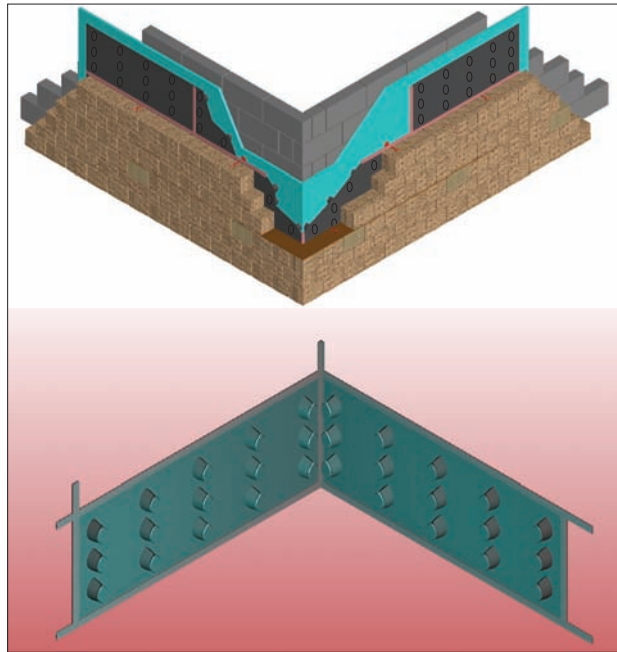
10.12 Where openings such as doors and windows are in close proximity, it is recommended that a continuous lintel or cavity tray is used. Individual lintels or cavity trays should have stop ends and be adequately drained.

10.13 At the vertical edges of openings and at vertical unreturned or unbonded edges, additional ties should be used at a rate of one tie per 300 mm height or equivalent and placed not more than 225 mm from the edge. Slots are cut into the panels at every 230 mm and the ties inserted.

Timber-frame walls

10.14 The installation procedure is as described in sections 10.1 to 10.12 except that the panels are cut and air bricks inserted every metre run below the dpc before building the outer leaf (see Figure 5).

Figure 6 Installed panel and strips



Technical Investigations

11 Tests

Tests were carried out on the SureCav Wall Spacer System to determine:

- durability
- flexibility
- weathertightness.

12 Investigations

Investigations were carried out on:

- assessing the practicability of installation in respect of fixing of panels
- condensation risk.

Bibliography

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

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*

13 Conditions

13.1 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.

13.2 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.

13.3 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
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

13.4 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.

13.5 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.

