

Quinn Building Products

Gortmullen
Derrylin
County Fermanagh BT92 9AU
Tel: 028 6774 8866 Fax: 028 6774 8800
e-mail: info@quinn-lite.com
website: www.quinn-group.com



Agrément Certificate
11/4869
Product Sheet 1

AIRCRETE BUILDING BLOCKS AND THIN-JOINT SYSTEM

QUINN-LITE B3

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Quinn-Lite B3, general-purpose aerated concrete (aircrete) building blocks with a gross dry density of $480 \text{ kg}\cdot\text{m}^{-3}$ and a mean compressive strength of $2.9 \text{ N}\cdot\text{mm}^{-2}$. They are for use in the construction of loadbearing and non-loadbearing solid internal and external walls, above and below the damp-proof course and the inner and outer leaves of cavity walls.

AGRÉMENT CERTIFICATION INCLUDES:

- factors relating to compliance with 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

Thermal insulation — the thermal conductivity (λ value) of the blocks should be taken as $0.12 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ for 'protected blockwork' (see section 5).

Sound insulation — the blocks may be used in flanking elements to separating walls and floors (see section 6).

Properties in relation to fire — the blocks are 'non-combustible' as defined in the national Building Regulations (see section 7).

Use below the damp-proof course — the blocks are suitable for use in situations up to and including MX3.2 as defined in BS EN 1996-2 : 2006, Annex A, Table A.1 and the UK National Annex or in situations up to and including A3 as defined in BS 5628-3 : 2005 and for use in classes DS1 and DS2 of soil and groundwater as defined in BRE Special Digest 1 : 2005 *Concrete in aggressive ground: Part C : Assessing the aggressive chemical environment* (see section 8 of this Certificate).

Structural aspects — the blocks are suitable for use in walls designed and constructed in accordance with BS 5628-3 : 2005, BS EN 1996-1-1 : 2005, BS EN 1996-1-2 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006 and their UK National Annexes and PD 6697 : 2010 (see section 11 of this Certificate).

Durability — autoclaved aerated concrete is a durable material, and walls will have a durability equivalent to that of traditional masonry (see section 14).

The BBA has awarded this Agrément Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 25 November 2011

Simon Wroe
Head of Approvals — Materials

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.

British Board of Agrément
Bucknalls Lane
Garston, Watford
Herts WD25 9BA

©2011

tel: 01923 665300
fax: 01923 665301
e-mail: mail@bba.star.co.uk
website: www.bbacerts.co.uk

Regulations

In the opinion of the BBA, Quinn-Lite B3, 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 2010 (England and Wales)

Requirement:	A1	Loading
Requirement:	A2	Ground movement
Comment:		Walls designed and constructed from the blocks can meet these Requirements. See sections 3.1 to 3.4, 11.1 to 11.3 and the <i>Installation</i> part of this Certificate.
Requirement:	B3(1)(2)(4)	Internal fire spread (structure)
Requirement:	B4(1)	External fire spread
Comment:		The blocks can contribute to a construction meeting these Requirements. See sections 7.1 to 7.4 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		Walls designed and constructed from the blocks, provided they are suitably finished, can contribute to meeting this Requirement. See sections 3.4, 9.1 and 9.2 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		Walls designed and constructed from the blocks will contribute to limiting the risk of condensation. See sections 10.1 and 10.2 of this Certificate.
Requirement:	E1	Protection against sound from other parts of the building and adjoining buildings
Requirement:	E2(a)	Protection against sound within a dwelling-house etc
Comment:		Walls designed and constructed from the blocks can meet these Requirements. See sections 6.1, 6.3 and 6.4 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		Walls designed and constructed from the blocks will contribute to limiting heat loss through walls. See sections 5.2 and 5.3 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The blocks are acceptable materials. They should be specified and installed in accordance with sections 3.1 to 3.4, 14 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		Walls designed and constructed from the blocks can contribute to a construction meeting this Regulation. See sections 11.1 to 11.3, 14 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards — construction
Standard:	1.1(a)(b)	Structure
Comment:		Walls designed and constructed from the blocks can satisfy this Standard, with reference to clauses 1.1.1 ⁽¹⁾⁽²⁾ to 1.1.3 ⁽¹⁾⁽²⁾ . See sections 3.1 to 3.4, 11.1 to 11.3 and the <i>Installation</i> part of this Certificate.
Standard:	2.1	Compartmentation
Standard:	2.2	Separation
Standard:	2.3	Structural protection
Standard:	2.4	Cavities
Standard:	2.6	Spread to neighbouring buildings
Comment:		The blocks can contribute to a construction satisfying these Standards, with reference to clauses 2.1.1 ⁽²⁾ , 2.1.4 ⁽²⁾ , 2.1.5 ⁽²⁾ , 2.1.8 ⁽²⁾ , 2.1.9 ⁽²⁾ , 2.1.10 ⁽²⁾ , 2.1.11 ⁽²⁾ , 2.1.12 ⁽²⁾ , 2.1.13 ⁽²⁾ , 2.1.15 ⁽²⁾ , 2.2.1 to 2.2.5 ⁽¹⁾⁽²⁾ , 2.2.6 ⁽¹⁾ , 2.2.7 ⁽¹⁾⁽²⁾ , 2.2.8 ⁽¹⁾ , 2.2.10 ⁽¹⁾ , 2.3.1 ⁽¹⁾⁽²⁾ to 2.3.5 ⁽¹⁾⁽²⁾ , 2.4.1 ⁽¹⁾⁽²⁾ , 2.4.2 ⁽¹⁾⁽²⁾ , 2.6.1 ⁽¹⁾⁽²⁾ , 2.6.5 ⁽¹⁾ , 2.6.6 ⁽¹⁾⁽²⁾ and 2.6.7 ⁽²⁾ respectively. See sections 7.1 to 7.4 of this Certificate.
Standard:	3.10	Precipitation
Comment:		Walls designed and constructed from the blocks, provided they are suitably finished, can contribute to satisfy this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ to 3.10.6 ⁽¹⁾⁽²⁾ . See sections 3.4, 9.1 and 9.2 of this Certificate.
Standard:	3.15	Condensation
Comment:		Walls designed and constructed from the blocks can contribute to limiting the risk of condensation, with reference to clauses 3.15.1 ⁽¹⁾⁽²⁾ , 3.15.4 ⁽¹⁾⁽²⁾ and 3.15.5 ⁽¹⁾⁽²⁾ when constructed in accordance with sections 10.1 and 10.2 of this Certificate.
Standard:	5.1	Noise separation
Comment:		Walls designed and constructed from the blocks can satisfy this Standard, with reference to clauses 5.1.1 ⁽¹⁾⁽²⁾ to 5.1.5 ⁽¹⁾⁽²⁾ . See sections 6.2 and 6.3 of this Certificate.
Standard:	5.2	Noise reduction between rooms
Comment:		Walls designed and constructed from blocks can satisfy this Standard, with reference to clauses 5.2.1 ⁽¹⁾⁽²⁾ and 5.2.2 ⁽¹⁾⁽²⁾ . See sections 6.2 and 6.3 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		Walls designed and constructed from the blocks can contribute to satisfying these Standards, with reference to clauses 6.1.1 ⁽¹⁾ , 6.1.2 ⁽¹⁾ , 6.1.4 ⁽²⁾ , 6.1.6 ⁽¹⁾ , 6.2.1 ⁽¹⁾⁽²⁾ , 6.2.3 ⁽¹⁾ , 6.2.4 ⁽²⁾ , 6.2.5 ⁽²⁾ , 6.2.6 ⁽¹⁾ , 6.2.7 ⁽¹⁾ , 6.2.8 ⁽¹⁾⁽²⁾ , 6.2.9 ⁽¹⁾ , 6.2.10 ⁽²⁾ , 6.2.11 ⁽¹⁾⁽²⁾ , 6.2.12 ⁽¹⁾ and 6.2.13 ⁽¹⁾⁽²⁾ respectively, provided construction is in accordance with a solution detailed in sections 5.2 and 5.3 of this Certificate.

Standard:	7.1(a)	Statement of sustainability
Comment:		Walls designed and constructed from the blocks can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	12	Building standards — conversions
Comment:		Comments made in relation to these blocks under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ . (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 blocks are acceptable. See sections 3.1 to 3.4 of this Certificate. See also sections 11.1 to 11.3, 14 and the <i>Installation</i> part of this Certificate.
Regulation:	C4(b)	Resistance to ground moisture and weather
Comment:		Walls designed and constructed from the blocks, provided they are suitably finished, can contribute to meeting this Regulation. See sections 3.4, 9.1 and 9.2 of this Certificate.
Regulation:	C5	Condensation
Comment:		Walls designed and constructed in accordance with sections 10.1 and 10.2 of this Certificate will contribute to limiting the risk of condensation.
Regulation:	D1(a)	Stability
Comment:		Walls designed and constructed from the blocks can meet this Requirement. See sections 3.1 to 3.4, 11.1 to 11.3 and the <i>Installation</i> part of this Certificate.
Regulation:	E4(1)(2)(4)	Internal fire spread – Structure
Regulation:	E5(a)	External fire spread
Comment:		The blocks can contribute to a construction meeting these Regulations. See sections 7.1 to 7.4 of this Certificate.
Regulation:	F2(a)(i)	Conservation measures
Comment:		Walls designed and constructed from the blocks will contribute to limiting heat loss through walls. See sections 5.2 and 5.3 of this Certificate.
Regulation:	F3(2)	Target carbon dioxide Emissions Rate
Comment:		Walls designed and constructed from the blocks can help to meet this Regulation. See sections 5.2 and 5.3 of this Certificate.
Regulation:	G2(1)	Separating walls and separating floors
Comment:		Walls designed and constructed from the blocks may be used to satisfy this Regulation. See sections 6.1 and 6.4 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 sections: 1 *Description* (1.3, Table 2 footnotes 1 and 2) and 2 *Delivery and site handling*, (2.1) of this Certificate.

Additional Information

NHBC Standards 2011

NHBC accepts the use of Quinn-Lite B3, when installed and used in accordance with this Certificate as meeting Technical Requirement R3, in relation to *NHBC Standards*, Chapters 6.1 *External masonry walls* and 6.3 *Internal walls*.

Technical Specification

1 Description

1.1 Quinn-Lite B3 blocks comprise cement, lime, sand and pulverized fuel ash, aluminium powder is used as an aerating agent. The blocks are wire-cut to the required dimensions and cured in high-pressure steam autoclaves to increase their physical and chemical stability.

1.2 The blocks are available as wall and foundation blocks supplied in the sizes detailed in Table 1.

Table 1 Block formats

	Wall blocks ⁽¹⁾
Face size (mm)	440 x 215
Thickness (mm)	100 to 350

(1) Also available as coursing units.

1.3 The dry density and compressive strength of the blocks when tested in accordance with BS EN 771-4 : 2003 are detailed in Table 2.

Table 2 Block density and compressive strength

	Quinn Lite B3 ⁽¹⁾
Gross dry density (kg·m ⁻³)	480
Dry density range (kg·m ⁻³)	430 to 530
Mean compressive strength (N·mm ⁻²)	2.9
Minimum individual block compressive strength (N·mm ⁻²)	2.4

(1) A typical block weight for a 440 mm x 215 mm x 100 mm block is 4.68 kg (including 3% moisture).

1.4 The blocks are manufactured to comply with the requirements of BS EN 771-4 : 2003.

2 Delivery and site handling

2.1 The blocks are supplied shrink-wrapped with a yellow banding suitable for off-loading with mechanical grabs. The colour of the banding indicates the strength of the blocks. Blocks may also be supplied on pallets for off-loading by fork-lift trucks.

2.2 The blocks must be stored clear of the ground on a firm, level surface and protected from rain and water from the ground. The shrink wrapping should be kept in place until the blocks are required for use.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Quinn-Lite B3.

Design Considerations

3 Use



3.1 Quinn-Lite B3 blocks are suitable for use in the construction of loadbearing and non-loadbearing solid internal and external walls, above and below the damp-proof course and the inner and outer leaves of cavity walls.

3.2 The blocks comply with the requirements of BS EN 771-4 : 2003.

3.3 The blocks should be specified in accordance with BS EN 771-4 : 2003 and BS 6073-2 : 2008.

3.4 Walls must be designed and constructed in accordance with BS 5250 : 2002, BS 5628-1 : 2005, BS 5628-3 : 2005 BS EN 1996-1-1 : 2005, BS EN 1996-1-2 : 2005, BS EN 1996-2 : 2006, BS EN 1996-3 : 2006 and their UK National Annexes and PD 6697 : 2010.

4 Practicability of installation

The blocks are designed to be installed by blocklayers experienced with laying this type of product.

5 Thermal insulation

5.1 Thermal transmittance (U value) calculations of walls should be carried out in accordance with BS EN ISO 6946 : 2007 and BRE Report (BR 443) *Conventions for U-value calculations*, using the properties shown in Table 3.

Table 3 External wall thermal properties

Property	
Quinn-Lite B3 block thermal conductivity (W·m ⁻¹ ·K ⁻¹)	0.12 ⁽¹⁾
Mortar % (thin-joint 2 mm joint)	2.3 ⁽²⁾
Mortar % (standard 10 mm joint)	6.6 ⁽²⁾

(1) The conductivity of the block should be taken as 0.12 W·m⁻¹·K⁻¹, for 'protected blockwork', 0.13 W·m⁻¹·K⁻¹ for 'exposed blockwork, ie below dpc but above ground level' and 0.19 W·m⁻¹·K⁻¹ 'blockwork below ground level'.

(2) Mortar conductivity to be taken as 0.88 W·m⁻¹·K⁻¹.



5.2 External cavity walls incorporating the blocks and brick outer leaf will need to incorporate thermal insulation as necessary to achieve, or improve on, the following 'mean' design U values specified in:

England and Wales — 0.26 to 0.35 W·m⁻²·K⁻¹

Scotland — 0.19 to 0.30 W·m⁻²·K⁻¹

Northern Ireland — 0.30 to 0.35 W·m⁻²·K⁻¹.

5.3 The blocks can contribute to maintaining continuity of thermal insulation at junctions between elements and around openings. Guidance limiting heat loss by air infiltration, can be found in:

England and Wales — Accredited Construction Details (version 1.0)

Scotland — Accredited Construction Details (Scotland)

Northern Ireland — Accredited Construction Details (version 1.0).

6 Sound insulation

Walls flanking a separating wall or floor



6.1 The blocks can form the inner leaf of an external masonry cavity wall described in the following documents where any leaf surface mass excluding finishes is acceptable, for example where there is no separating floor, as described in the following documents:

England and Wales — Approved Document E, Sections 2 and 3

Northern Ireland — Technical Booklet G, Sections 1.5 to 1.10.



6.2 The blocks can form the inner leaf of an external masonry cavity wall flanking a type 2 separating wall where there is no separating floor and the minimum block density is $450 \text{ kg}\cdot\text{m}^{-3}$ as described in the Building Standards Division Publication *Example constructions and generic internal constructions*, section *Generic Internal Constructions* referred to in clause 5.1.3 of the Technical Handbooks.

Internal walls — new buildings and conversions



6.3 Internal walls between a bedroom or a room containing a water closet and other rooms (in England and Wales) or an internal wall between an apartment in a dwelling and a room in a residential building which is capable of being used for sleeping (in Scotland), are acceptable as follows:

England and Wales — wall type D described in paragraph 5.20 of Approved Document E and a wall meeting the minimum sound insulation values in Table 0.2 of Approved Document E

Scotland — wall type 4 and 4A described in the *Generic Internal Constructions* referred to in clause 5.2.2 of the Technical Handbooks and wall meeting the minimum sound insulation values in clause 5.2.1 of the Technical Handbooks.



6.4 The blocks can form an internal partition abutting a type 1, 2 or 4 separating wall or a type 1 or 2 separating floor if the minimum surface mass excluding finishes of the partition is not less than $120 \text{ kg}\cdot\text{m}^{-2}$. Guidance on circumstances (for example where there is no separating floor) where any surface mass can be acceptable can be found in the following documents:

England and Wales — Approved Document E, Sections 2 and 3

Northern Ireland — Technical Booklet G, Sections 1.5 to 1.10.

7 Properties in relation to fire



7.1 The fire resistance of walls constructed with autoclaved aerated concrete masonry can be determined by reference to:

- BRE report (BR 128 : 1988) *Guidelines for the construction of fire-resisting structural elements*
- BS EN 1996-1-2 : 2005, Annex B, Tables NB 4.6 and the UK National Annex, Tables NA 3.10 to NA 3.12.

7.2 The blocks are classified as non-combustible as defined in the national Building Regulations.

7.3 Constructions incorporating thin-joint mortar should be subjected to testing or assessment.

7.4 With regard to the placing of cavity barriers, the surface of the Quinn-Lite B3 block, may be taken as Class 0.

7.5 The fire performance and suitability of wall ties and anchors for a specific construction should be confirmed with the supplier of these products.

8 Use below the damp-proof course

8.1 The blocks are resistant to freeze/thaw conditions likely to occur below the dpc and are therefore suitable for use in situations up to and including MX3.2 as defined in BS EN 1996-2 : 2006, Annex A, Table A1 and A3 as defined in BS 5628-3 : 2005, Table 12, (ie where there is a high risk of saturation with freezing).

8.2 The blocks are suitable for use in classes DS1 and DS2 of soil or groundwater as defined in BRE Special Digest 1 : 2005.

8.3 In unusual soil and/or groundwater conditions, eg soils contaminated by industrial waste or highly acid soils, expert advice should be obtained.

9 Resistance to moisture



9.1 Walls built from the blocks should be designed and constructed in accordance with:

England and Wales — Approved Document C

Scotland — Mandatory Standard 3.10, clauses 3.10.1 to 3.10.4 and 3.10.6

Northern Ireland — Technical Booklet C.

9.2 For single leaf constructions, the minimum block thicknesses to be used in solid rendered external walls are given in Table 4.

Table 4 Minimum block thicknesses⁽¹⁾

Exposure ⁽²⁾	Severe	Moderate	Sheltered
Minimum block thickness (mm)	215	190	90

(1) Increased thicknesses may be necessary to meet other requirements such as structural stability, see sections 3.4, 5 and 6).

(2) The exposure is defined in BS 5628-3 : 2005 and PD 6697 : 2010.

10 Condensation risk



10.1 Walls will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed $0.7 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ ($1.2 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ in Scotland) at any point and, the junctions with floors, roof and openings comply with section 5.3.

10.2 Walls will adequately limit the risk of interstitial condensation when they are constructed in accordance with BS 5250 : 2002 (Section 8 and Annex D). For the purpose of calculations, the block's water vapour resistance factor (μ) may be taken as 10 (a resistivity of $50 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1}\cdot\text{m}^{-1}$), as given in BS EN ISO 10456 : 2007, Table 4.

10.3 Additional guidance can be found in BRE report (BR 262 : 2002) *Thermal insulation : avoiding risks*.

11 Structural aspects

General



11.1 Design and construction should be in accordance with BS 5628-3 : 2005, BS EN 1996-1-1 : 2005, BS EN 1996-1-2 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006 and their UK National Annexes and PD 6697 : 2010.

11.2 Coursing should be carried out such that bearings are not less than 100 mm in length or the length required by the design calculation, whichever is the greater. Where possible the masonry should be set out to provide a full block under a bearing. Pressed steel lintels should have a bearing of not less than 150 mm.

Concentrated loads

11.3 Increased local stresses may be permitted in the Quinn-Lite B3 masonry provided the member applying the load is sensibly rigid and of appropriate bearing area or a suitable spreader is introduced. Design should be in accordance with BS 5628-1 : 2005, Clause 30 or BS EN 1996-1-1 : 2005, Clause 6.1.3 and its UK National Annex.

11.4 Joist hangers may be used provided that:

- when designing in accordance with BS 5628-1 : 2005 or BS EN 1996-1-1 : 2005 and its UK National Annex and PD 6697 : 2010, the full effect of the maximum eccentric load at the joist hanger detail should be taken into account. It should be assumed that joist hangers are not effectively rigid when calculating the local bearing stress under single hangers, the effective load applied via the hanger should be determined by an acceptable elastic theory
- they are compatible with aircrete blocks with mean compressive strengths of $2.9 \text{ N}\cdot\text{mm}^{-2}$, or above. The dimensions used in the design and the manufacture from appropriate materials is set out in BS 5628-1 : 2005, Table 1, BS EN 845-1 : 2003 and BS EN 1996-2 : 2006, Annex C, Table C1 and the UK National Annex
- supervision and workmanship⁽¹⁾ are adequate to ensure that:
 - installation is in accordance with the hanger manufacturer's instructions
 - the Quinn-Lite course to carry the hangers is level and at the correct height, any adjustments being made before the course is laid
 - the hanger bears directly on a complete block with the back plate flat against the block
 - the gap between the joist and the back plate does not exceed 6 mm
 - construction complies with the conditions used in the design and restraint type hangers are used when specified
 - the blockwork above the hanger is completed and matured before any load is applied to the hanger.

(1) Further guidance may be obtained from BRE Defect Action Sheet 58 : 1984 *Suspended timber floors : joist hangers in masonry walls* — installation.

12 Movement

12.1 The moisture movement of the blocks may be taken as a nominal value of $0.9 \text{ mm} \cdot \text{m}^{-1}$.

12.2 Movement may be accommodated using movement joints or bed joint reinforcement, or a combination of the two. When bed joint reinforcement is designed to contribute towards accommodation of movement, it should be designed and installed strictly in accordance with the Certificate holder's instructions.

12.3 Movement joints must be provided in accordance with BS 5628-3 : 2005, BS EN 1996-2 : 2006, Clause 2.3.4, the UK National Annex, Clause NA.2.1, Table NA.1, PD 6697 : 2010, and the Certificate holder's instructions.

12.4 In external walls containing openings, movement joints may need to be provided at more frequent intervals, or the masonry above and below the opening may need to be reinforced to restrain movement. Particular attention should be paid to long, low, horizontal panels of masonry, eg those under windows.

13 Maintenance

As the blocks are concealed and have suitable durability (see section 14), maintenance is not normally required.

14 Durability



Autoclaved aerated concrete (Aircrete) is a durable material. Walls constructed from the blocks will have durability equivalent to that of traditional masonry.

Installation

15 General

15.1 Installation of Quinn-Lite B3 should be carried out strictly in accordance with BS 8000-3 : 2001, the Certificate holder's instructions and this Certificate.

15.2 Mortar should not be stronger than the blocks; using the definitions in either:

- BS 5628-3 : 2005, Table 13 and 15, mortar designation (iii) or (iv) should be used in A1 conditions, while mortar designation (iii) may be used in A2 or A3 conditions, or
- BS EN 1996 1-1 : 2006 and the UK National Annex, Table NA.2. Mortar designation (iii) or (iv) should be used in MX1 conditions, while mortar designation (iii) may be used in MX2 or MX3 conditions.

16 Chasing

16.1 The maximum depth of horizontal and vertical chases allowed without calculation are given in BS EN 1996-1-1 : 2005, Clauses 8.6.1 to 8.6.3 and the UK National Annex, Table NA.11 and NA.12.

16.2 In accordance with BS 5628-3 : 2005, vertical chases in the Quinn-Lite B3 masonry should not exceed one-third of the thickness of the leaf, and horizontal chases should not exceed one-sixth of the thickness of the leaf at any point.

17 Rendering and plastering

Rendering and plastering must be carried out in accordance with BS EN 13914-1 : 2005 and BS EN 13914-2 : 2005 respectively. The Certificate holder should be consulted regarding suitable finishes and low water vapour permeability renders. The moisture condition of the blocks should be considered before the finishes are applied.

18 Fixings

18.1 Cut nails or proprietary nails may be used for lightweight fixtures. For heavier fixtures, screws and plugs, nailable expansion fixings or helical fixings should be used. All fixings must penetrate a minimum of 50 mm into the blocks.

18.2 Fixings must be selected and installed in accordance with the fixing manufacturer's instructions, paying particular attention to drilling depth, drill diameter, minimum spacings and minimum edge distance.

18.3 Mean pull-out loads for certain proprietary fixings used with the blocks can be obtained from the Certificate holder. In each case a safety factor of 4 is recommended to establish a safe working load.

18.4 Guidance on some typical loads applied by relevant components (eg for services and finishing) can be obtained from BS 648 : 1964 and by common fixtures of BS 8200 : 1985, Table 5.

19 Tests

19.1 An assessment of Quinn-Lite B3's durability was made, based on data resulting in the issue of previous Agrément Certificate 98/3477.

19.2 Tests were carried out in accordance with BS 6073-1 : 1981 and BS 6073-2 : 2008, relating to:

- dimensional accuracy
- dry density
- compressive strength.

19.3 Tests for thermal conductivity were carried out and the results assessed.

20 Investigations

20.1 The manufacturing process was evaluated, including the methods adopted for quality control and details were obtained of the quality and composition of the materials used.

20.2 An evaluation was made of existing test data relating to:

- drying shrinkage
- behaviour in fire
- acoustic performance
- risk of pattern staining.

20.3 Visits to existing sites and a user survey were conducted to evaluate the performance in use.

Bibliography

- BS 648 : 1964 *Schedule of weights of building materials*
- BS 5250 : 2002 *Code of practice for control of condensation in buildings*
- BS 5628-1 : 2005 *Code of practice for the use of masonry — Structural use of unreinforced masonry*
- BS 5628-3 : 2005 *Code of practice for the use of masonry — Materials and components, design and workmanship*
- BS 6073-1 : 1981 *Precast concrete masonry units — Specification for precast concrete masonry units*
- BS 6073-2 : 2008 *Precast concrete masonry units — Guide for specifying precast concrete masonry units*
- BS 8000-3 : 2001 *Workmanship on building sites — Code of practice for masonry*
- BS 8200 : 1985 *Code of practice for design of non-loadbearing external vertical enclosures of buildings*
- BS EN 771-4 : 2003 *Specification for masonry units — Autoclaved aerated concrete masonry blocks*
- BS EN 1996-1-1 : 2005 *Eurocode 6 : Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
- NA to BS EN 1996-1-1 : 2005 *UK National Annex to Eurocode 6 : Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
- BS EN 1996-1-2 : 2005 *Eurocode 6 : Design of masonry structures — General rules — Structural fire design*
- NA to BS EN 1996-1-2 : 2005 *UK National Annex to Eurocode 6 : Design of masonry structures — General rules — Structural fire design*
- BS EN 1996-2 : 2006 *Eurocode 6 : Design of masonry structures — Design considerations, selection of materials and execution of masonry*
- NA to BS EN 1996-2 : 2006 *UK National Annex to Eurocode 6 : Design of masonry structures — Design considerations, selection of materials and execution of masonry*
- BS EN 1996-3 : 2006 *Eurocode 6 : Design of masonry structures : Simplified calculation methods for unreinforced masonry structures*
- NA to BS EN 1996-3 : 2006 *UK National Annex to Eurocode 6 : Design of masonry structures : Simplified calculation methods for unreinforced masonry structures*
- BS EN 13914-1 : 2005 *Design, preparation and application of external rendering and internal plastering — External rendering*
- BS EN 13914-2 : 2005 *Design, preparation and application of external rendering and internal plastering — Design considerations and essential principles for internal plastering*
- BS EN ISO 6946 : 2007 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*
- BS EN ISO 10456 : 2007 *Building materials and products — Hygrothermal properties — Tabulated design values and procedures for determining declared and design thermal values*
- BS EN 845-1 : 2003 *Specification for ancillary components for masonry — Ties, tension straps, hangers and brackets*
- PD 6697 : 2010 *Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2*

21 Conditions

21.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page — no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- 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.

21.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

21.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and 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.

21.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

21.5 In issuing this Certificate, the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- 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 their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal.

21.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal 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, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue 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.