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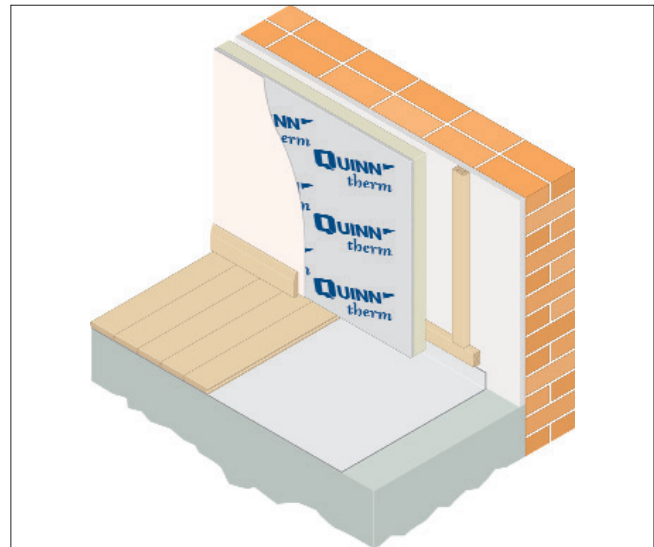
website: www.quinn-group.com

Agrément Certificate
No 07/4444**PRODUCT SHEET 1 – QUINN THERM QL****PRODUCT SCOPE AND SUMMARY OF CERTIFICATE**

This Certificate relates to Quinn Therm QL, a plasterboard laminated to a rigid polyisocyanurate modified polyurethane foam board with a composite kraft paper facing on both sides.

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**

Thermal performance — the manufacturer's declared thermal conductivity ($\lambda_{90/90}$ value) of the insulation component of the product as declared by the Certificate holder is $0.023 \text{ Wm}^{-1}\text{K}^{-1}$ (see section 4).

Condensation — the insulation component of the board has a minimum water vapour resistivity of 400 MNsgm^{-1} and will therefore, provide a significant resistance to water vapour transmission (see section 5).

Behaviour in relation to fire — when properly installed, the insulation component will be contained between the wall and the plasterboard component of the product (see section 7).

Durability — under normal conditions, the board is rot-proof, dimensionally stable and durable (see section 11).

The BBA has awarded this Agrément Certificate for Quinn Therm QL to Quinn Therm 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: 1 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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Regulations

In the opinion of the BBA, Quinn Therm QL, 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:	B2	Internal fire spread (linings)
Comment:		The product can meet this Requirement. See section 7.1 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		Walls incorporating the product can meet this Requirement. See sections 5.1 and 5.3 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The product can meet or contribute to meeting its Target Emission Rate. See sections 4.2 to 4.5 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is acceptable. See section 11 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

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 satisfying this Regulation. See section 11 of this Certificate.
Regulation:	9	Building standards — construction
Standard:	2.4	Cavities
Comment:		Cavities incorporating the product must comply with this Standard, with reference to clauses 2.4.1 ⁽¹⁾⁽²⁾ , 2.4.2 ⁽¹⁾⁽²⁾ , 2.4.7 ⁽¹⁾ and 2.4.9 ⁽²⁾ to this Standard. See section 7.3 of this Certificate.
Standard:	2.5	Internal linings
Comment:		The product will satisfy this Standard, with reference to clause 2.5.1 ⁽¹⁾⁽²⁾ . See section 7.1 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product can satisfy or contribute to satisfying this Standard, with reference to clauses 3.15.1 ⁽¹⁾ , 3.15.4 ⁽¹⁾ and 3.15.5 ⁽¹⁾ . See sections 5.1 and 5.4 of this Certificate.
Standard:	6.1(a)(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying clauses or parts of 6.1.1 ⁽¹⁾ , 6.1.2 ⁽¹⁾ , 6.1.3 ⁽¹⁾⁽²⁾ , 6.1.5 ⁽²⁾ , 6.1.6 ⁽¹⁾ , 6.2.1 ⁽¹⁾⁽²⁾ , 6.2.3 ⁽¹⁾ , 6.2.4 ⁽¹⁾⁽²⁾ , 6.2.5 ⁽²⁾ , 6.2.9 ⁽¹⁾ , 6.2.10 ⁽²⁾ , 6.2.11 ⁽¹⁾ and 6.2.12 ⁽²⁾ of these Standards. See sections 4.2 to 4.5 of this Certificate.
Regulation:	12	Building standards — conversions
Comment:		All comments given for the product under Regulation 9, 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 product is acceptable. See section 11 of this Certificate.
Regulation:	C5	Condensation
Comment:		The product is acceptable. See section 5.1 of this Certificate.
Regulation:	E2	Internal fire spread — Linings
Comment:		Walls incorporating the product can satisfy this Regulation. See section 7.1 of this Certificate.
Regulation:	F2(a)(i)	Conservation measures
Comment:		See sections 4.2 to 4.5 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, storage and site handling (2.4).

Non-regulatory Information

NHBC Standards 2007

NHBC accepts the use of Quinn Therm QL, when installed and used in accordance with this Certificate, in relation to NHBC Standards, Chapter 8.2 *Wall and ceiling finishes*.

Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Quinn Therm QL, when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual*, Section 5 *Internal/external works, services & finishes*.

General

Quinn Therm QL is for use as an insulating dry lining system to improve the thermal insulation of existing and new, solid or cavity masonry walls of dwelling or buildings of similar occupancy, type and conditions.

The product may also be used in locations where the insulated surface is inaccessible, eg existing ceilings of flat roofs.

Technical Specification

1 Description

1.1 Quinn Therm QL consists of plasterboard⁽¹⁾ laminated to various thicknesses of polyisocyanurate insulation⁽²⁾ with a composite kraft paper finish on both sides.

(1) The plasterboard component is manufactured in accordance with BS EN 520 : 2004. Thickness 9.5 mm and 12.5 mm.

(2) Manufactured in accordance with BS EN 13165 : 2001.

1.2 The board is available with nominal characteristics of :

length (mm)	2400, 2438
width (mm)	1200
thickness (mm)	20 to 200
density (kgm ³)	30 to 34
edge profile	plain

2 Delivery and site handling

2.1 The product is delivered to site shrink-wrapped in polyethylene on pallets. Each board has the manufacturer's name printed on the surface and each pack carries a label with the product description, and characteristics, manufacturer's name, and the BBA identification mark incorporating the number of this Certificate.

2.2 The pallets should be mechanically unloaded and each board can be removed individually.

2.3 It is essential that the board should be stored inside on a flat, dry, level surface in a well-ventilated area. If the product is left outside at any stage it should be raised off the ground, be kept level and protected from rain and snow. The board must be protected from prolonged exposure to sunlight and should be stored under cover or protected with tarpaulins.

2.4 The board must not be exposed to a naked flame or other ignition sources.

2.5 The board can easily be trimmed on site using a fine-toothed saw or a builder's knife.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Quinn Therm QL.

Design Considerations

3 Use

3.1 Quinn Therm QL is for use as an insulated dry lining board for solid or cavity masonry walls of building or dwellings of similar occupancy type and conditions, and in non-loadbearing partitions.

3.2 Quinn Therm QL is satisfactory for use as an insulating dry lining system for new and existing dwellings or buildings with similar environmental conditions. It should be installed in accordance with the Certificate holder's instructions.

3.3 The product may be incorporated in masonry construction including clay and calcium silicate bricks, concrete blocks, and natural and reconstituted stone blocks. Masonry walls of new buildings should be designed and constructed in accordance with BS 5628-3 : 2005 and BS 8000-3 : 2001. It is essential that such walls are constructed having regard to the local wind-driven rain index. Where reinforced masonry is involved, the design should be in accordance with BS 5628-2 : 2005.

3.4 Since insulating dry linings are not intended to offer resistance to rain penetration, walls to be insulated with dry lining must be already rain resistant and show no signs of rain penetration.

3.5 The board, if properly installed with the jointing and finishing systems available, is capable of providing a satisfactory surface for direct decoration without plastering.

3.6 With dry lining installations that form a void of 20 mm or more (ie timber batten systems), services can be incorporated behind the dry lining, making the chasing of the wall unnecessary. Where the services have a greater depth than the void, the wall should be chased rather than the insulation. It is recommended that services which penetrate the dry lining, eg, light switches, power outlets, are kept to a minimum to limit damage to vapour checks.

3.7 The installation of insulating dry lining systems requires careful detailing around doors and windows to achieve a satisfactory surface for finishing. In addition, every attempt should be made to minimise the risk of thermal bridging at reveals and where heavy separating walls are attached to the external wall. New work must be designed to accommodate the thickness of the dry lining, particularly at reveals, heads, sills and in relation to ceiling height. Where the dimensions of fixtures are critical (eg bathrooms) these should be checked before installation.

3.8 If present, mould or fungal growth should be treated prior to the application of the product.

4 Thermal performance

4.1 Calculations of the thermal transmittance (U value) of a specific construction using insulated dry lining 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 $0.023 \text{ Wm}^{-1}\text{K}^{-1}$ for the insulation component of the dry lining, and a design value of $0.21 \text{ Wm}^{-1}\text{K}^{-1}$ for the plasterboard⁽¹⁾. The U value of a typical wall construction will depend on the insulation value of the wall and its finish. Example U values are given in Table 1.

(1) BRE 443 : 2006.

Table 1 Example U values ($\text{Wm}^{-2}\text{K}^{-1}$)

Insulation thickness (mm)	215 mm brickwork ($\lambda = 0.84 \text{ Wm}^{-1}\text{K}^{-1}$) $d = 1700 \text{ kgm}^{-3}$	215 mm dense concrete block ($\lambda = 1.21 \text{ Wm}^{-1}\text{K}^{-1}$) $d = 1800 \text{ kgm}^{-3}$
100	0.20	0.20
75	0.25	0.26
45	0.38	0.39

Note:

- Timber battens, softwood, thickness 22 mm ($\lambda 0.13 \text{ Wm}^{-1}\text{K}^{-1}$), CIBSE Guide A, Table 3.39.
- Gypsum plasterboard, thickness 12.5 mm ($\lambda 0.21 \text{ Wm}^{-1}\text{K}^{-1}$), BRE 443 : 2006.



4.2 Subject to the selection of an appropriate insulation thickness and construction, the product can contribute to a wall construction achieve the following design U values:

England and Wales and Northern Ireland

- $0.30 \text{ Wm}^{-2}\text{K}^{-1}$ standard for new thermal elements such as those constructed as part of an extension specified in Approved Documents; L1B (Table 4), L2B (Table 6), Technical Booklets F1 (Table 3.2) and F2 (Table 3.3)
- $0.35 \text{ Wm}^{-2}\text{K}^{-1}$ thermal elements constructed as replacements for existing elements as specified in Approved Documents; L1B (Table 4), L2B (Table 6), Technical Booklets F1 (Table 3.2) and F2 (Table 3.3)
- $0.35 \text{ Wm}^{-2}\text{K}^{-1}$ required for 'notional' dwellings in SAP 2005 and buildings other than dwellings in SBEM
- $0.35 \text{ Wm}^{-2}\text{K}^{-1}$ limit average U value specified in Approved Documents; L1A (Table 2), L2A (Table 4), Technical Booklets F1 (Table 2.2) and F2 (Table 2.4)
- $0.70 \text{ Wm}^{-2}\text{K}^{-1}$ limit U value for an individual element specified in Approved Document L1A (Table 2), L2A (Table 4), Technical Booklets F1 (Table 2.2) and F2 (Table 2.4).

Scotland

- $0.20 \text{ Wm}^{-2}\text{K}^{-1}$ U value required for the 'simplified approach — solid fuel package 6' 'notional' dwelling in Mandatory Standard 6.1, clause 6.1.6⁽¹⁾
- $0.25 \text{ Wm}^{-2}\text{K}^{-1}$ required for 'notional' dwellings in SAP 2005 (for Scotland) and the 'simplified approach — packages 1 to 5' in Mandatory Standard 6.1, clause 6.1.6⁽¹⁾
- $0.27 \text{ Wm}^{-2}\text{K}^{-1}$ maximum U value for building elements of the insulation envelope for extensions or reconstruction of elements, in Mandatory Standard 6.2, clauses 6.2.9⁽¹⁾, 6.2.10⁽²⁾, 6.2.11⁽¹⁾ and 6.2.12⁽²⁾
- $0.30 \text{ Wm}^{-2}\text{K}^{-1}$ limit average specified in Mandatory Standard 6.2, clause 6.2.1⁽¹⁾⁽²⁾
- $0.70 \text{ Wm}^{-2}\text{K}^{-1}$ limit for an individual element specified in Mandatory Standard 6.2, clauses 6.2.1⁽¹⁾⁽²⁾, 6.2.9⁽¹⁾ and 6.2.10⁽²⁾.

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

4.3 Where a proposed wall U value is greater than, the 'notional' value specified in section 4.2 additional energy saving measures will be required in the building envelope and/or services to achieve the required overall carbon dioxide emission rate reduction of about 20% in dwellings (18% to 25% in Scotland) and 23% to 28% in buildings other than dwellings.

4.4 Compliance with the guidance referred in section 4.5 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)⁽¹⁾.

(1) Use 'simplified approach' for Scotland.



4.5 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.

Scotland — Accredited Construction Details (Scotland)

Northern Ireland — Accredited Construction Details (version 1.0).

5 Condensation

Interstitial condensation



5.1 Walls and ceilings incorporating the product will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2002, Section 8 and Appendix D.

5.2 The insulation component of the boards have a nominal water vapour resistivity exceeding 400 MNsgm^{-1} and provided all joints between boards are sealed in accordance with the Certificate holder's literature can offer a significant resistance to water vapour transmission.

Surface condensation



5.3 Walls and ceilings will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed $0.7 \text{ Wm}^{-2}\text{K}^{-1}$ and $0.35 \text{ Wm}^{-2}\text{K}^{-1}$ respectively at any point and the junctions with other elements are designed in accordance with the relevant requirements of TSO publication *Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings* TSO 2002 or BRE Information Paper IP 01/06.



5.4 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) *Thermal insulation: avoiding risks*.

5.5 As with other types of insulation applied to the inside of a wall, there may be a risk of cold bridging from the floors or ceilings, particularly in concrete slab construction. It has been demonstrated that use of coving at the wall ceiling joint will significantly reduce this risk.

5.6 Dry lining has been used successfully in the rehabilitation of buildings suffering from surface condensation of walls where the dampness has been caused by the lack of thermal insulation.

6 Infestation

The use of the system does not in itself promote infestation. The creation of voids within the structure, ie gaps between the wall lining and the boards, may provide habitation for insects or vermin in areas already infested. Care should be taken to ensure, wherever possible, that all voids are sealed, as any infestation may be difficult to eradicate. There is no food value in the materials used.

7 Behaviour in relation to fire



7.1 The plasterboard component is Class 0 or 'low risk' in accordance with BS 476-6 : 1989 and BS 476-7 : 1997.

7.2 When properly installed, the insulation will be contained between the wall and internal lining board until one is destroyed. Therefore, the insulation will not contribute to the development of a fire or present a smoke or toxic hazard as the fire develops.

7.3 Any cavities formed by the system (such as those formed between the thermal liner and the substrate wall) must have appropriate fire stopping in accordance with the relevant Approved Document, Mandatory Standard or Technical Booklet.

7.4 Recessed lighting must not be used in ceilings with this form of insulation.

8 Proximity of flues and appliances

When the system is installed in close proximity to certain flue pipes and or heat producing appliances, the relevant provisions of the national Building Regulations should be met:

England and Wales — Approved Document J

Scotland — Mandatory Standard 3.19

Northern Ireland — Technical Booklet L.

9 Materials in contact — wiring installations


9.1 Electrical cables that are likely to come into contact with the insulation component of the thermal liner must be protected by a suitable conduit or PVC-U trunking.

9.2 As with any other form of insulation, de-rating of electrical cables should be considered where the insulation restricts the air cooling of cables.

10 Wall-mounted fittings

The recommendations of the Certificate holder should be followed. Any object fixed to the wall, other than lightweight items, eg framed pictures, should be fixed through the lining board into the wall behind, using recommended proprietary fixings.

11 Durability

 The durability of the materials is satisfactory. Provided the product is fixed to satisfactory stable and durable backgrounds by fully-trained site personnel, the board should have a life equal to the building in which it is installed. Under normal conditions of occupancy it is unlikely to suffer damage, but if damage does occur repairs are easily carried out.

Installation

12 General

12.1 It is recommended that Quinn Therm QL is installed by trained dry lining operatives.

12.2 The board is for installation on internal walls and ceilings. A typical method is shown in Figure 1.

12.3 Installation should be in accordance with good dry lining practice and the relevant parts of the Certificate holder's literature.

12.4 The board can be cut using a sharp knife or fine-toothed saw, to fit around windows, doors, air bricks. It is essential that cut pieces completely fill the spaces for which they are intended and are adequately secured.

12.5 All installations of insulated dry lining require careful planning and setting out.

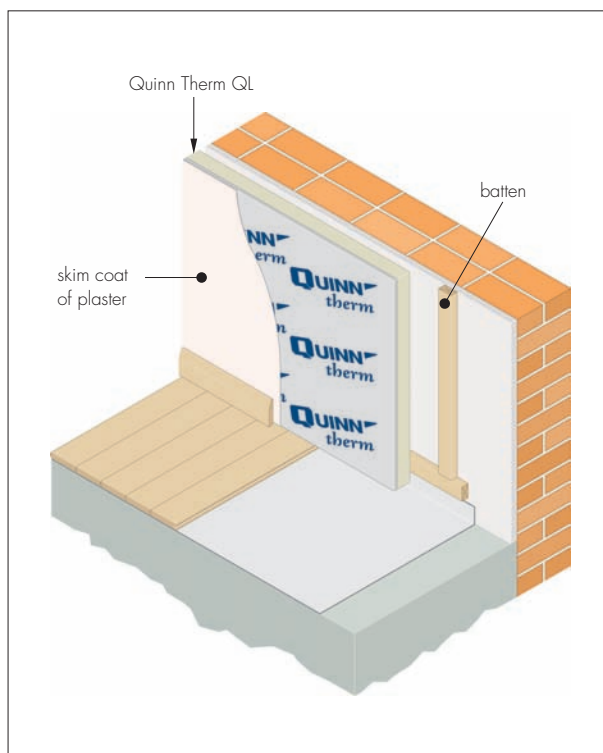
12.6 Before fixing the product, sufficient time must be allowed for damp-proofing treatments, where applied, to dry out (see also, BS 6576 : 2005 for dry lining in conjunction with a chemical dpc application).

13 Procedure

13.1 The wall is surveyed to establish its flatness and suitability for receiving the system. This system may be used on any stable, dry walls capable of taking the fixings for the timber battens.

13.2 In existing walls, the wall surface is prepared to a smooth finish. Wallpaper, skirting, picture rails, gloss paint and projecting window boards are all removed.

Figure 1 Typical installation



13.3 Pre-treated timber battens are mechanically fixed to the wall substrate. The battens must be of sufficient thickness (25 mm or greater) and spacing (up to 600 mm) to provide adequate support to which the board can be mechanically fixed, and provide for any services that are to be incorporated into the void behind the dry lining. Vertical battens are then fitted. Additional battens can be used around openings and to support heavy horizontal items.

13.4 The board is cut to size and placed against the battens. To avoid thermal bridging, the board should be used to line window reveals and around the perimeter of separating floors.

13.5 Jointing and finishing of the plasterboard lining is carried out in the appropriate manner applying plasterer's scrim to all joints and a thin coat of plaster. Timber skirting can be fixed into the horizontal batten at floor level.

Technical Investigations

14 Tests

Tests were carried out to determine:

- interlaminar bond strength
- impact testing on laminated board in accordance with MOAT No 43 : 1987.

15 Investigations

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

- squareness
- density
- dimensions
- dimensional stability at specific temperatures and humidity.
- vapour resistance
- flatness
- λ value

16 Other investigations

A theoretical analysis of the hygrothermal behaviour of various installations was carried out.

Bibliography

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

BS 5628-2 : 2005 *Code of practice for the use of masonry — Structural use of reinforced and prestressed masonry*

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

BS 6576 : 2005 *Code of practice for diagnosis of rising damp in walls of buildings and installation of chemical damp-proof courses*

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

BS EN 520 : 2004 *Gypsum plasterboards — Definitions, requirements and test methods*

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

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

MOAT No 43 : 1987 *UEAtc Directives for Impact Testing Opaque Vertical Building Components*

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
- 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.

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.