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Agrément Certificate

13/4990

Product Sheet 2

LAPOLLA SPRAY APPLIED OPEN CELL INSULATION

FOAM-LOK FL 500 FOR EXTERNAL WALLS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Foam-Lok FL 500⁽²⁾, a spray-applied in-situ thermal insulation for external walls of new and existing dwellings or similar buildings. It can be installed between the inner leaf studs of conventional timber-frame cavity walls with a masonry outer skin, or applied to the internal surface of external solid masonry walls in combination with a dry-lining system.

(1) Hereinafter referred to as 'Certificate'.

(2) Also sold as ATOC.

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 performance — the product has a declared thermal conductivity (λ_D) of $0.039 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ (see section 6).

Condensation risk — the product has a water vapour resistance factor (μ) of 2.8. The risk of interstitial condensation will depend on the wall construction and should, therefore, be assessed for each project. A vapour control layer (VCL) should also be used (see section 7).

Durability — the product will have a life equivalent to that of the structure in which it is incorporated (see section 12).



The BBA has awarded this 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 Second issue: 31 October 2018

John Albon – Head of Approvals
Construction Products

Claire Curtis-Thomas
Chief Executive

Originally certificated on 27 May 2015

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, Foam-Lok FL 500, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	C2(c)	Resistance to moisture
Comment:		The product can contribute to satisfying this Requirement. See sections 7.1 and 7.4 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The product can contribute to satisfying this Requirement. See section 6 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The product is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.
Regulation:	26	CO₂ emission rates for new buildings
Regulation:	26A	Fabric energy efficiency rates for new dwellings (applicable to England only)
Regulation:	26A	Primary energy consumption rates for new buildings (applicable to Wales only)
Regulation:	26B	Fabric performance values for new dwellings (applicable to Wales only)
Comment:		The product can contribute to satisfying these Regulations. See section 6 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The product is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	3.15	Condensation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.15.1 ⁽¹⁾ , 3.15.3 ⁽¹⁾ , 3.15.4 ⁽¹⁾ , 3.15.5 ⁽¹⁾ and 3.15.7 ⁽¹⁾ . See sections 7.1 and 7.5 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Comment:		The product can contribute to satisfying this Standard, with reference to clauses, or parts of, 6.1.1 ⁽¹⁾ and 6.1.6 ⁽¹⁾ . See section 6 of this Certificate.
Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying this Standard, with reference to clauses, or parts of 6.2.1 ⁽¹⁾ , 6.2.3 ⁽¹⁾ , 6.2.4 ⁽¹⁾ , 6.2.6 ⁽¹⁾ , 6.2.7 ⁽¹⁾ , 6.2.9 ⁽¹⁾ , 6.2.10 ⁽¹⁾ , 6.2.11 ⁽¹⁾ and 6.2.13 ⁽¹⁾ . See section 6 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The product can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting at least a bronze level of sustainability as defined in this Standard. See section 6 of this Certificate.
Regulation:	12	Building standards applicable to conversions
Comment:		Comments in relation to <i>the product</i> under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾ and Schedule 6 ⁽¹⁾ .

(1) Technical Handbook (Domestic).



The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	23	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.
Regulation:	29	Condensation
Comment:		The product can contribute to satisfying this Regulation. See section 7.1 of this Certificate.
Regulation:	39(a)(i)	Conservation measures
Regulation:	40(2)	Target carbon dioxide emission rate
Comment:		The product can contribute to satisfying these Regulations. See section 6 of this Certificate.

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See sections: 3 *Delivery and site handling* and 14 *Precautions* of this Certificate.

Additional Information

NHBC Standards 2018

In the opinion of the BBA, Foam-Lok FL 500, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 6.1 *External masonry walls* and 6.2 *External timber framed walls*.

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 14315-1 : 2013. An asterisk (*) appearing in this Certificate indicates that data shown is given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 Foam-Lok FL 500 is an in-situ formed spray-applied open-cell, water-blown, low-density semi-rigid polyurethane foam insulation.

1.2 The product is prepared from two liquid components, isocyanate and resin, and is yellowish in colour.

1.3 The product is applied with a fixed ratio (1:1) volumetric displacement pump in layers, until the final design thickness (not exceeding 260 mm) is achieved.

1.4 Ancillary items used with this product, but outside the scope of this Certificate, include:

- vapour control layer (VCL)
- fire-resistant lining board
- timber studs
- spray equipment.

2 Manufacture

2.1 The isocyanate and resin components are manufactured in conventional batch-blending process, and mixed on site via a spray-gun.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

3 Delivery and site handling

3.1 The product should be stored at temperatures between 15 and 30°C and protected from possible sources of ignition.

3.2 The product must be stored in an area with positive ventilation.

3.3 The Certificate holder has taken the responsibility of classifying and labelling the product under the *CLP Regulation (EC) No 1272 / 2008 on the classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheets.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Foam-Lok FL 500.

Design Considerations

4 Use

4.1 Foam-Lok FL 500 is satisfactory for use in reducing the thermal transmittance (U value) of external walls of new and existing dwellings or similar buildings.

4.2 The product can be used as insulation:

- between the inner leaf studs of conventional timber-frame cavity walls with a clear cavity and a masonry outer skin, or
- applied to the internal surface of solid masonry walls in between timber battens, and finished with plasterboard, as a dry-lining system.

4.3 In all applications the product must be covered by a fire-resistant lining board manufactured in accordance with the requirements of BS EN 520 : 2004 (see section 8.3 and the *Installation* section of this Certificate).

4.4 Constructions must be designed in accordance with the relevant recommendations of:

- BS 5250 : 2011
- BS 8000-3 : 2001
- BS EN 351-1 : 2007
- BS EN 1995-1-1 : 2004 and its UK National Annex
- BS EN 1996-1-1 : 2005 and its UK National Annex
- BS EN 1996-1-2 : 2005 and its UK National Annex
- BS EN 1996-2 : 2006 and its UK National Annex
- BS EN 1996-3 : 2006 and its UK National Annex.

4.5 A pre-installation survey must be carried out to ensure that the construction is suitable for the application of the product.

4.6 It is essential that construction elements are designed and constructed to incorporate the normal precautions against moisture ingress before the application of the product.

4.7 Existing constructions must be in a good state of repair with no evidence of rain penetration or damp. Defects must be made good prior to installation.

4.8 In addition, if present, mould or fungal growth must be treated prior to the application of the product. The Certificate holder can advise on suitable treatments.

4.9 Installation into timber frame constructions must not be carried out until the moisture content of the timber frame is less than 20%.

4.10 The product must not come into direct contact with flue pipes, chimneys or other heat-producing appliances (see section 9).

4.11 The product must not come into contact with zinc or zinc-plated elements as, under certain environmental conditions, the foam will accelerate the corrosion of such elements. Zinc or zinc-plated elements are used as fixings for timber. In all situations when foam could come into contact with zinc, the zinc must be separated from the foam by covering the zinc plate with a suitable protective coating. The Certificate holder can advise on an appropriate coating for a particular application. The performance of such coatings is outside the scope of this Certificate.

4.12 The product forms a strong bond with clean, dry substrates. This should be taken into account when specifying the product or anticipating future alterations.

4.13 To satisfy the requirements of NHBC, a VCL of a type specified in the NHBC Standards must be applied behind the fire-resistant lining board in wall applications.

4.14 Services which penetrate the internal plasterboard lining (eg light switches, power outlets) should be kept to a minimum to limit damage to vapour checks. In addition, any penetrations should be enclosed in plasterboard, stone mineral wool or suitably tested proprietary fire-rated systems in order to preserve the fire resistance of the wall.

External solid masonry walls (insulated dry lining)

4.15 Insulated dry lining systems require careful detailing during installation 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 and sills, and in relation to ceiling height. Where the dimensions of fixtures are critical (eg bathrooms) these should be checked before installation.

5 Practicability of installation

The product should only be installed by installers who have been trained and approved by the Certificate holder (see section 13).

6 Thermal performance



6.1 Calculations of the thermal transmittance (U value) of a wall should be carried out in accordance with BS EN ISO 6946 : 2017 and BRE Report BR 443 : 2006 using the declared thermal conductivity (λ_D)* of $0.039 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$.

6.2 The U value of a completed wall will depend on the insulation thickness, the insulating value of the wall components and the internal finish. Example constructions are given in Tables 1 and 2. For improved energy or carbon savings, designers should consider appropriate fabric and/or services measures.

Table 1 U values — External masonry wall with timber frame inner skin

Design U value (W·m ⁻² ·K ⁻¹)	Foam-Lok FL500 thickness ⁽¹⁾ (mm)
0.18	140 mm between studs + 110 mm between battens
0.19	140 mm between studs + 95 mm between battens
0.25	140 mm between studs + 30 mm between battens
0.26	140 mm between studs + 25 mm between battens
0.27	140 mm between studs + 15 mm between battens
0.28	140 mm between studs + 10 mm between battens
0.30	130 mm between studs
0.31	105 mm between studs

(1) Wall construction — 102.5 mm thick external brickwork ($\lambda = 0.77 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$); 50 mm clear cavity; breather membrane; 11 mm OSB sheathing board ($\lambda = 0.13 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$); 140 mm thick timber frame bridging at 600 mm centres (15%) with variable thickness of insulation ($\lambda = 0.13 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$); additional 47 mm timber battens where required ($\lambda = 0.13 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ at 11.8 %, remaining thickness is air cavity); VCL; and 12.5 mm plasterboard ($\lambda = 0.25 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$).

Table 2 U values – External masonry wall with internal dry lining

Design U value (W·m ⁻² ·K ⁻¹)	Foam-Lok FL500 thickness ⁽¹⁾ (mm)
0.18	240 mm between studs
0.19	230 mm between studs
0.25	170 mm between studs
0.26	160 mm between studs
0.27	155 mm between studs
0.28	150 mm between studs
0.30	135 mm between studs
0.31	115 mm between studs

(1) Wall construction — 215 mm thick external brickwork ($\lambda = 0.77 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ at 82.7%), bridged with mortar ($\lambda = 0.94 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ at 17.3%); 13 mm dense plaster ($\lambda = 0.57 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$); spray foam between same size timber studs ($\lambda = 0.13 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ at 600 mm centres (11.8%); VCL; and 12.5 mm plasterboard ($\lambda = 0.25 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$).

Junctions



6.3 Care must be taken in the overall design and construction of junctions with other elements and openings to minimise thermal bridges and air infiltration. Detailed guidance can be found in the documents supporting the national Building Regulations.

7 Condensation risk

Interstitial condensation



7.1 Walls will limit the risk of interstitial condensation adequately when they are designed and constructed in accordance with the relevant parts of BS 5250 : 2011. Further guidance may be obtained from BRE Report BR 262 : 2002. A VCL must be used.

7.2 For the purposes of assessing the risk of interstitial condensation, the insulation vapour resistance factor (μ)* of 2.8 should be used for the product.

External solid masonry walls (insulated dry lining)

7.3 The risk of seasonal condensation on the VCL must be considered for solid masonry walls orientated from ESE through south to WSW, in accordance with section 3.10 of BRE Report BR 262 : 2002.

Surface condensation



7.4 Walls will limit the risk of surface condensation adequately where the thermal transmittance (U value) does not exceed $0.7 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ at any point and the junctions with other elements are designed in accordance with the guidance referred to in section 6.3 of this Certificate.



7.5 For buildings in Scotland, constructions will be acceptable where the thermal transmittance (U value) of the wall does not exceed $1.2 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ at any point, and the walls are designed and constructed in accordance with the relevant parts of BS 5250 : 2011, Annexes D and G. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 6.3 of this Certificate.

8 Behaviour in relation to fire

8.1 The product is classified* as Class E to BS EN 13501-1 : 2007.

8.2 The product is not classified as 'non-combustible' and must be protected from naked flames and other ignition sources during and after installation.

8.3 Once installed, the product must be contained by a fire-resistant lining board, manufactured in accordance with BS EN 520 : 2004, with all joints fully sealed and supported by timber studs or battens. Therefore, it will not contribute to the development stages of a fire.

8.4 Elements must incorporate cavity barriers at edges, around openings and at junctions with fire-resisting elements and in cavities in accordance with the relevant provisions of the national Building Regulations. The design and installation of cavity barriers must take into account any anticipated differential movement.

9 Proximity of flues and appliances

9.1 When installing the product in close proximity to certain flue pipes, chimneys and/or heat-producing appliances, the relevant provisions of the national Building Regulations are applicable.

England and Wales — Approved Document J

Scotland — Mandatory Standard 3.19⁽¹⁾

(1) Technical Handbook (Domestic).

Northern Ireland — Technical Booklet L.

9.2 The product must not be installed within 50 mm of heat-emitting devices, where the temperature is in excess of 93°C.

10 Materials in contact — wiring installations

10.1 The product is compatible with PVC materials in contact.

10.2 De-rating of electric cables should be considered in areas where the product restricts the flow of air. The use of suitable conduit or trunking is recommended.

10.3 Where recessed lighting is used, provision should be made to prevent the fitting overheating, or ventilated fittings must be used.

11 Maintenance

The product, once installed does not require any regular maintenance and has suitable durability (see section 12), provided the waterproof layers are maintained in a weathertight condition.

12 Durability



The product will have a life equivalent to that of the structure in which it is incorporated.

Installation

13 Approved installers

The Certificate holder operates an Approved Installer Scheme for this product, under which the installers are approved, registered and regularly reviewed by the Certificate holder to demonstrate that they are competent to carry out installation of the product in accordance with their instructions and this Certificate. Details of Approved Installers are available from the Certificate holder.

14 Precautions

14.1 To comply with the requirements of Section 4 of the *Health and Safety at Work Act 1974*, it is essential that there is an exchange of information between the client and the installer before spray operations commence on any site. Existing health hazards and those brought into the premises by the installer should be discussed, and measures agreed to deal with them effectively.

14.2 The process for the installation of the product may produce a build-up of harmful vapours. Installers must wear full personal protective equipment (PPE) when working with the product (see section 14.6), including full-face fresh-air supplied respirators, protective clothing and gloves. Other trades and personnel must be kept an appropriate distance away from the applicator while spraying is taking place. The requirements of the *Lapolla FL500 installation manual* and the product safety data sheets issued to Installers, must be followed at all times.

14.3 The building should be well ventilated during the spraying process as some vapours may sink to lower parts of the building.

14.4 If vapour levels need to be measured, methods should be those recommended by the Health and Safety Executive. Certain applications, eg confined spaces, require the use of extractor fans as recommended by the Certificate holder.

14.5 Whilst spraying, care should be taken to minimise the degree of 'overspray', a fine mist of particles that can travel considerable distances and adhere strongly to surfaces it lands on.

14.6 To minimise the hazards of overspray, the following points should be observed:

- the installer must wear appropriate protective gear, including a full-face NIOSH-approved fresh air respirator, protective overalls, gloves and boots
- other than the applicator, individuals must be kept away from the application area. No unprotected individuals should be in the structure where the application is being conducted
- the spray gun should never be left unattended
- the spray gun should only be pointed at the surface, or when not in use, at the floor
- the product should not be installed if wind is a concern – tarpaulins or other measures should be used to block it
- cleaning the spray gun requires use of a solvent to break down and/or remove the reacted components; therefore, to prevent exposure to the components and the solvent, proper protection should be worn.

15 Procedure

General

15.1 Building elements to be insulated must be assessed for suitability and any necessary repairs carried out. The positioning of, and access to, services should also be considered.

15.2 The product should be stored, handled and applied in accordance with the Certificate holder's instructions and this Certificate.

15.3 The product should be spray-applied to clean and dry substrates and built up in layers, up to a maximum thickness of 260 mm.

15.4 If required, once cured, the product is trimmed flat with care using a saw, and covered with lining board.

Timber frame walls

15.5 The product is sprayed into the cavity formed by the studs and the sheathing board. When cured, if the cavity is fully-filled, the excess foam is trimmed flush with the studs, with care, and the lining board installed with a VCL with lapped and sealed joints.

Masonry external walls

15.6 Installation should be in accordance with good dry lining practice and the Certificate holder's literature.

15.7 Before applying 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 damp proof course application).

15.8 This system may be used on any stable, dry wall capable of taking the fixings for the timber battens.

15.9 Wallpaper, skirting, picture rails, gloss paint and projecting window boards are removed.

15.10 Pre-treated horizontal timber battens of sufficient thickness are mechanically fixed to the wall substrate at maximum 600 mm centres. Vertical battens are then fitted, with additional battens used around openings and to support heavy horizontal items.

15.11 The product is sprayed into the cavity formed by the battens. When cured, if the cavity is fully-filled, the excess foam is trimmed flush with the battens, with care, and the lining board installed with a VCL with lapped and sealed joints.

Technical Investigations

16 Tests

Tests were carried out by the BBA, and the results assessed, to determine thermal conductivity.

17 Investigations

17.1 An assessment was made of independent data relating to:

- thermal conductivity
- density
- adhesion to timber, breathable roof tile underlay, brick and 1F felt substrates after heat ageing and water immersion
- reaction to fire and fire resistance
- water absorption
- water vapour permeability
- release of dangerous substances

- dimensional stability
- closed cell content.

17.2 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 5250 : 2011 + A1 : 2016 *Code of practice for control of condensation in buildings*

BS 6576 : 2005 + A1 : 2012 *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 351-1 : 2007 *Durability of wood and wood-based products — Preservative-treated solid wood — Classification of preservative penetration and retention*

BS EN 520 : 2004 + A1 : 2009 *Gypsum plasterboards — Definitions, requirements and test methods*

BS EN 1995-1-1 : 2004 + A2 : 2014 *Eurocode 5 : Design of timber structures — General — Common rules and rules for buildings*

NA to BS EN 1995-1-1 : 2004 + A1 : 2008 *UK National Annex to Eurocode 5 : Design of timber structures — General — Common rules and rules for buildings*

BS EN 1996-1-1 : 2005 + A1 : 2012 *Eurocode 6 : Design of masonry structures — General rules for reinforced and unreinforced masonry structures*

NA to BS EN 1996-1-1 : 2005 + A1 : 2012 *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 + A1 : 2014 *UK National Annex to Eurocode 6 : Design of masonry structures : Simplified calculation methods for unreinforced masonry structures*

BS EN 13501-1 : 2007 + A1 : 2009 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

BS EN 14315-1 : 2013 *Thermal insulating products for buildings — In-situ formed sprayed rigid polyurethane (PUR) and polyisocyanurate (PIR) foam products — Specification for the rigid foam spray system before installation*

BS EN ISO 6946 : 2017 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*

BRE Report (BR 262 : 2002) *Thermal insulation: avoiding risks*

BRE Report (BR 443 : 2006) *Conventions for U-value calculations*

18 Conditions

18.1 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.

18.2 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.

18.3 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.

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

18.5 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
- actual 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
- any claims by the manufacturer relating to CE marking.

18.6 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.