

Topseal Systems Limited

Unit 1
Hookstone Chase
Harrogate
North Yorkshire HG2 7HH
Tel: 01423 886495 Fax: 01423 889550
e-mail: enquiries@topseal.co.uk
website: www.topseal.co.uk



Agrément Certificate
93/2932
Product Sheet 1

TOPSEAL WATERPROOFING SYSTEMS

TOPSEAL ROOF WATERPROOFING SYSTEM

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to the Topseal Roof Waterproofing System, a cold-applied glassfibre reinforced polyester resin for use as a waterproofing system on flat or pitched roofs with limited access.

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

Weathertightness — the system resists the passage of moisture into the building (see section 5).

Properties in relation to fire — tests indicate that the system can enable a roof to be unrestricted under Building Regulations (see section 6).

Resistance to wind uplift — the system resists the effects of any wind suction likely to occur in practice (see section 7).

Resistance to foot traffic — the system can accept the limited foot traffic and loads associated with installation and maintenance of the system without damage (see section 8).

Durability — the system will have a durability in excess of 15 years. A GRP laminate formed under satisfactory conditions can maintain its integrity for 30 years (see section 10).

The BBA has awarded this Agrément Certificate to the company named above for the system described herein. The system 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

A handwritten signature in black ink, appearing to read 'Simon Wroe'.

Simon Wroe
Head of Approvals — Materials

A handwritten signature in black ink, appearing to read 'Greg Cooper'.

Greg Cooper
Chief Executive

Date of First issue: 24 September 2009

Originally certificated on 4 November 1992

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

©2009

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, the Topseal Roof Waterproofing 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: | B4(2) | External fire spread |
| Comment: | | Test data to BS 476-3 : 2004 indicate that on suitable substructures the use of the system will be unrestricted under this Requirement. See sections 6.1 to 6.3 of this Certificate. |
| Requirement: | C2(b) | Resistance to moisture |
| Comment: | | Tests for water resistance indicate that use of the system meets this Requirement. See section 5.2 of this Certificate. |
| Requirement: | Regulation 7 | Materials and workmanship |
| Comment: | | The system is acceptable. See sections 10.1 and 10.2 and the <i>Installation</i> part of this Certificate. |



The Building (Scotland) Regulations 2004 (as amended)

| | | |
|-------------|---------|--|
| Regulation: | 8(1)(2) | Fitness and durability of materials and workmanship |
| Comment: | | The system can contribute to a construction meeting this Standard. See sections 9, 10.1 and 10.2 and the <i>Installation</i> part of this Certificate. |
| Regulation: | 9 | Building standards — construction |
| Standard: | 2.8 | Spread from neighbouring buildings |
| Comment: | | Test data to BS 476-3 : 2004 indicate that the system when applied to a non-combustible substrate, can be regarded as having low vulnerability under clause 2.8.1 ⁽¹⁾⁽²⁾ of this Standard. See sections 6.1 to 6.3 of this Certificate. |
| Standard: | 3.10 | Precipitation |
| Comment: | | Tests for water resistance of the system indicate that the use of the system will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.7 ⁽¹⁾⁽²⁾ . See section 5.2 of this Certificate. |
| Regulation: | 12 | Building standards — conversions |
| Comment: | | All comments given for this system under Regulation 9 also apply to this Regulation, with reference to clause 0.12 ⁽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 system is acceptable. See sections 10.1 and 10.2 and the <i>Installation</i> part of this Certificate. |
| Regulation: | B3(2) | Suitability of certain materials |
| Comment: | | The system is acceptable. See section 9 of this Certificate. |
| Regulation: | C4(b) | Resistance to ground moisture and weather |
| Comment: | | Tests for water resistance indicate that use of the system will enable a roof to satisfy the requirements of this Regulation. See section 5.2 of this Certificate. |
| Regulation: | E5(b) | External fire spread |
| Comment: | | Data obtained from tests to BS 476-3 : 2004 indicate that on suitable substructures use of the system can enable a roof to be unrestricted under this Regulation. See sections 6.1 to 6.3 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: 2 *Delivery and site handling* (2.2 and 2.5 to 2.7) and 12 *Precautions* (12.1 and 12.2).

Non-regulatory Information

NHBC Standards 2008

NHBC accepts the use of the Topseal Roof Waterproofing System, when installed and used in accordance with this Certificate, as meeting Technical Requirement R3 in relation to *NHBC Standards Chapter 7.1 Flat roofs and balconies*.

Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, the Topseal Roof Waterproofing 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 Flat roofs*.

General

The system should only be installed by specialist roofing contractors who have been trained and approved/registered by the Certificate holder. The Registered Contractors' Scheme records will be audited by the BBA as part of its programme of surveillance of the Certificate.

Technical Specification

1 Description

1.1 The Topseal Roof Waterproofing System consists of a glassfibre reinforced polyester resin, cold-applied on site by the hand lay-up process. A non-slip grade incorporating a gritting agent in the topcoat is available to provide a non-slip surface. A Double-top system incorporating two layers of glassfibre reinforcement (900 gm^{-2}) is available for use in areas where heavy foot traffic is envisaged.

1.2 The system comprises:

- Topseal Base Resin — an unsaturated polyester resin in styrene monomer, modified to allow curing with either 50 FT powder catalyst or suitable liquid peroxides (eg methyl ethyl ketone peroxides), for use as the basecoat resin. A dye is included in the resin, which produces a colour change on curing with a peroxide. The basecoat contains additives to suppress the emission of styrene monomer and protect the basecoat from dirt, moisture and excessive monomer loss prior to the application of the topcoat
- Topseal Topcoat — an unsaturated polyester resin in styrene monomer, modified to allow curing with liquid peroxides (eg methyl ethyl ketone peroxides), for use as the topcoat resin. The coating is supplied either pre-pigmented grey or clear for use in conjunction with the pigmented paste
- glass mat — 600 gm^{-2} emulsion-bound, chopped strand glassfibre mat conforming to BS 3496 : 1989 for use as reinforcement for the basecoat
- glass mat⁽¹⁾ — 450 gm^{-2} emulsion-bound, chopped strand glassfibre mat conforming to BS 3496 : 1989 for use as reinforcement for the basecoat
- MEKP — liquid catalyst
- pigmented paste — thixotropic colouring paste for Topseal Topcoat
- Preformed details (a range available in sections)
- section A (deep drip fascia) — preformed GRP deep drip fascia
- section B (raised edge) deep fascia — preformed GRP edge detail
- section C (simulated lead wall cover flashing) — preformed GRP flashing detail
- section D (fillet) — preformed GRP fillet detail
- section E — expansion joint
- section F — flat flashing
- section G — gutter or gully trip.

(1) The 450 gm^{-2} mat can be used as additional reinforcement over areas of potential weakness with both the 450 gm^{-2} and 600 gm^{-2} glass mat reinforcement.

1.3 Quality control checks are carried out on raw materials.

2 Delivery and site handling

2.1 The components of the system are available to registered contractors only through nominated distributors, a list is available from the Certificate holder.

2.2 Topseal Base Resin and Topseal Topcoat are supplied in 20 kg batch coded drums, the catalyst in 5 kg plastic containers and the pigment in 1 kg or 2 kg metal containers.

2.3 Each container bears the manufacturer's name, product name and the BBA identification mark incorporating the number of this Certificate.

2.4 The glassfibre reinforcement is supplied polythene wrapped in cardboard boxes.

2.5 The catalyst and colouring paste should be stored in sealed containers, under dry conditions, in temperatures of between 5°C and 25°C and away from direct sunlight until ready for application.

2.6 The resins are flammable, with a flashpoint below 32°C , and are classified 'flammable' under *The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002* (CHIP3) and must be stored in accordance with the *Highly Flammable Liquids and Liquid Petroleum Gases Regulations 1972*. The shelf-life of the resins is three months.

2.7 The polyester resins and catalyst are classified 'harmful' and 'irritant', the catalyst is also an 'organic peroxide' under *The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002* (CHIP3). All registered contractors must make an assessment of the hazards faced by employees (or others) during application of these products. Hazchem information is available from the Certificate holder.

2.8 The glassfibre reinforcement mat is supplied in roll form and must be kept dry.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Topseal Roof Waterproofing System.

Design Considerations

3 Use

3.1 The Topseal Roof Waterproofing System is satisfactory for use as a waterproofing layer on flat or pitched limited access roofs.

3.2 Limited access roofs are defined for the purpose of this Certificate as those roofs subjected only to pedestrian traffic for maintenance of the roof covering and cleaning of gutters, etc. Where traffic in excess of this is envisaged, special precautions such as additional protection to Topseal must be taken or alternatively the Double-top system should be used.

3.3 Flat roofs are defined for the purpose of this Certificate as those roofs having a minimum finished fall of 1:80. Pitched roofs are defined as those having falls in excess of 1:6.

3.4 When designing flat roofs, twice the minimum finished fall should be assumed, unless a detailed analysis of the roof is available, including overall and local deflection, direction of falls, etc. When upgrading existing flat roofs, care should be taken to eliminate ponding water.

3.5 Topseal should only be applied to timber-based substrates, 18 mm thick, exterior plywood, oriented strand board (OSB) with tongue-and-groove edges, or 18 mm/22 mm P5 boards. It should be of the correct durability class for the situation of use, as described in BRE Digest 323 *Selecting wood-based panel products*, the relevant requirements of BS 6229 : 2003 or where appropriate, complying with *NHBC Standards 2008*, Chapter 7.1 or *Zurich Building Guarantee Technical Manual 2007*, Section 4 *Superstructure*, Sub-section *Flat roofs*, pages 268–270. Other substrates are outside the scope of this Certificate.

4 Practicability of installation

Installation of the system must be carried out only by specialist roofing contractors registered by the Certificate holder.

5 Weathertightness

5.1 To achieve weathertightness it is essential that the coating is correctly applied and the coverage rate used complies with that stated in the manufacturer's literature.



5.2 Results of test data confirm that the system can adequately resist the passage of moisture to the inside of the building and so meet or comply with the relevant requirements of the national Building Regulations:

England and Wales — Approved Document C, Requirement C2(b), Section 6

Scotland — Mandatory Standard 3.10, clauses 3.10.1⁽¹⁾(2) and 3.10.7

Northern Ireland — Regulation C4(b).

5.3 The system is impervious to water and will give a weathertight roof covering capable of accepting minor structural movements without damage (see section 16, Table 3 for *Physical properties*).

6 Properties in relation to fire



6.1 When tested in accordance with BS 476-3 : 2004, a system comprising Topseal applied to 18 mm thick P5 particle board achieved an EXT.F.AA. rating.

6.2 When tested to BS 476-3 : 2004, a system comprising Topseal Double-top applied to an 18 mm thick orientated strand board (OSB3) and attached to 25 mm batons, achieved an EXT.F.AA. rating.

6.3 The designation of other specifications, eg when used on combustible substrates, should be confirmed by:

England and Wales — Test or assessment in accordance with Approved Document B, Appendix A, Clause 1

Scotland — Test to conform to Mandatory Standard 2.8, clause 2.8.1

Northern Ireland — Test or assessment by a UKAS accredited laboratory, or an independent consultant with appropriate experience.

6.4 A system comprising Topseal laminate applied to 15 mm OSB/3 board, when tested to prEN1187 : 2001; tests 1, 2, and 3 achieved Classification $B_{ROOF}(t1)$, $B_{ROOF}(t2)$ and $B_{ROOF}(t3)$ respectively.

7 Resistance to wind uplift

The system has adequate resistance to the effects of wind suction likely to occur in practice, provided the timber-based substrate is adequately fixed to the roof structure.

8 Resistance to foot traffic

8.1 The system can accept, without damage, the limited foot traffic and light concentrated loads associated with installation and maintenance operations. However, reasonable care is required to avoid damage by sharp objects or concentrated loads. Extra care should be taken when walking across the roof if surface water is present.

8.2 The non-slip or Double-top system is available for use on verandas, terraces or walkways on flat roofs where heavy foot traffic is envisaged.

9 Maintenance



The system should be subjected to regular annual inspections and roof drains kept clear as is good practice with all roofing membranes.

10 Durability



10.1 A GRP laminate constructed in accordance with the installation guide and formed in satisfactory weather conditions can maintain its integrity for 30 years.

10.2 The results of accelerated ageing tests and the system's performance in use confirm that satisfactory retention of physical properties is achieved. All available evidence indicates that a Topseal Roof Waterproofing System when constructed in accordance with this Certificate will have a life expectancy in excess of 15 years, provided there is no abnormal movement of the structure and the roof is subject to normal regular inspections and maintenance.

Installation

11 General

11.1 Application of the Topseal Roof Waterproofing System is carried out only by specialist roofing contractors registered by the Certificate holder (see the *General* part of this Certificate). Application must be carried out in strict accordance with the relevant clauses of the Certificate holder's instructions and this Certificate.

11.2 The Certificate holder requires that on completion of every project, registered contractors complete and retain a Quality Statement confirming that materials and installation comply with the Certificate holder's specification. This contains site details, including weather conditions, humidity, shape and size of area to which the system is to be applied, resin batch numbers and specification details on the quality of the other components. These should be verified as far as possible by the contractor's client.

11.3 The timber-based substrate to which the product is to be applied must be properly prepared in accordance with Certificate holder's instructions, including taping of any joints in the substrate boards.

11.4 Adhesion to the timber-based substrate will depend on its condition and cleanliness. The board should be dry, sound, and free from loose material or contamination.

11.5 The Topseal Roof Waterproofing System is a two-coat application of a basecoat, in which is embedded a glassfibre mat, and a pigmented topcoat.

11.6 Catalyst and pigment are added on site to the resin as detailed in Table 1. The amount of catalyst may be reduced slightly when laying in higher than normal temperatures (see section 14.1).

Table 1 Catalyst and pigment proportions

| | Basecoat | Topcoat |
|----------|----------------|----------------|
| Catalyst | 1–4% by weight | 1–4% by weight |
| Pigment | — | 10% by volume |

11.7 All points of potential weakness, such as board joints, changes of direction, ie upstands, gutters, protrusions, should be reinforced using a 75 mm wide strip of glassfibre reinforcement (450 gm⁻² or 600 gm⁻²) and the basecoat.

11.8 Depending on the configuration, roofs above 50 m² must have provision for the expansion and contraction likely to be met in service. The Certificate holder's advice should be sought in these instances.

11.9 Where joints between new and old roofs exist, the Certificate holder's advice should be sought regarding provision of expansion/movement joints.

11.10 On completion of any project a copy of the Quality Statement must be passed to the client for retention. This document would be used as evidence of use of the correct materials and site procedures in the event of any future discussions, negotiations or complaints relating to the roof in question.

12 Precautions

12.1 Vapours from the individual components of the system, some of which contain styrene monomer, may cause sensitisation and irritation to the respiratory system, eyes and skin. The system should be used only in areas with sufficient ventilation to prevent the build-up of vapour. Contact with the skin, eyes and clothes must be avoided. The Certificate holder's instructions and the relevant safety regulations for working procedures must be adhered to at all times.

12.2 The individual components must not be allowed to enter the drainage system.

13 Procedure

13.1 The curing time of the resin is dependent upon temperature and may be modified by adjusting the quantity of catalyst. If the following conditions apply, application should not take place:

- the air or substrate temperature is outside the range of 5°C to 35°C
- conditions could cause surface condensation
- risk of rain, or
- during frost or,
- above the boiling point of styrene 42°C.

13.2 Topseal Basecoat is prepared on site by mixing Topseal Base Resin with the catalyst in the correct proportions immediately prior to application. On adequate mixing, the resin will be opaque throughout and will have a slight pink hue. The catalysed resin has a working time of approximately 15 minutes depending on temperature. The thoroughly mixed basecoat is applied to the prepared timber-based substrate at a coverage rate of 1.00 kgm⁻² using a synthetic lambswool roller to obtain a uniform coating sufficient to fully bond the glassfibre reinforcement to the substrate.

13.3 The glassfibre reinforcement is embedded into the freshly applied basecoat by rolling with a paddle wheel roller until the reinforcement is thoroughly soaked. More of the catalysed basecoat is applied with the synthetic lambswool roller, at a coverage rate of 0.50 kgm⁻².

13.4 During application the glassfibre should be lapped 50 mm along the length as well as along the width and applied feathered to cut edge to minimise lines within the finished laminate.

13.5 The roof is ready to accept the topcoat when it is sufficiently dry to walk on without disturbing the strands of glass. The tack-on cure is a key for the topcoat resin.

13.6 Prior to topcoating, the laminate should be checked to ensure uniformity of resin distribution and that no pin-holes exist. All irregularities, eg glass strands not lying flat, ends of trim jointing strips, must be removed with coarse sandpaper. Suspect areas in the laminate should receive a further coat of resin.

13.7 Topseal Topcoat is prepared on site by fully mixing in the correct proportion of the colour pigmented paste and, immediately prior to application, the required amount of catalyst (see Table 1). It must be ensured during mixing that the catalyst is uniformly distributed throughout the resin. The catalysed topcoat resin has a working time of 15 minutes depending on temperature. When thoroughly mixed, the topcoat is applied at a coverage rate of 0.50 kgm⁻² using a fresh synthetic lambswool roller giving a 0.5 mm thickness.

13.8 Topseal Topcoat should be checked for uniformity of colour and any signs of pin-holing. Sub-standard areas should receive a further thin application of Topseal Topcoat.

14 Repair

In the event of damage, repairs should be carried out in accordance with the Certificate holder's instructions. Repairs should be made by cutting out the damaged section and grinding the surrounding area to a roughened, feathered surface extending 100 mm in each direction from the damaged area. The area to be covered should be thoroughly cleaned with a stiff brush. Glass mat and Topseal Base Resin should be used to make good the repair, left to harden and, subsequently, colour-matched pigmented Topseal Topcoat applied. Care should be taken not to coat existing areas of Topcoat.

Technical Investigations

15 Tests

Typical test results are summarised in Tables 2 to 4

16 Investigations

16.1 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.

16.2 A visit was made to a site in progress to assess the practicability of the installation procedures.

16.3 Data on fire performance to BS 476-3 : 2004 were examined.

Table 2 Physical properties

| Test (units) | Mean results | | | | Method ⁽¹⁾ |
|---|--------------|----------|-------|-------|-----------------------|
| | Free film | Profiles | | | |
| | | B | C | D | |
| Density (gcm ⁻³) | 1.38 | 1.53 | 1.52 | 1.50 | ISO 1183 |
| Glass to resin ratio | 1:3.5 | 1:1.6 | 1:2.2 | 1:2.2 | BS 2782-10.1006 |
| Thickness (mm) | – | 1.29 | 1.05 | 1.04 | Direct measurement |
| Weight per unit area (gcm ⁻²) | – | 1.88 | 1.39 | 1.46 | Direct measurement |
| Hardness | 27 | 49 | – | – | BS 2782-10.1001 |
| Water vapour permeability (gm ⁻² day ⁻¹) | 1.56 | – | – | – | BS 3177 (25°C/75%RH) |
| Water vapour resistance (MNsg ⁻²) | 132 | – | – | – | BS 3177 (25°C/75%RH) |
| Tensile strength (Nmm ⁻²) | | | | | BS 2782-3.320E |
| unaged | 90.8 | 96.3 | – | – | |
| heat aged ⁽²⁾ | – | 85.0 | – | – | |
| Cross-breaking strength (Nmm ⁻²) | | | | | BS 2782-10.1005 |
| unaged | 149.8 | 400.0 | – | – | |
| 2 hours water boil | 117.9 | – | – | – | |
| 30 days water soak | 92.6 | – | – | – | |
| 7 days heat aged at 70°C | 161.6 | 392.6 | – | – | |
| 1000 hours UV ageing | – | 350.8 | – | – | |
| Resistance to water pressure | satisfactory | – | – | – | MOAT 27 : 5.1.4.2 |

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

(2) Heat aged at 80°C for 90 days.

– = not tested

Table 3 Physical properties of the Topseal system — general

| Test (units) | Mean results | | Method ⁽¹⁾ |
|-----------------------------|-----------------|----------------|------------------------------|
| | Plywood | Sterling Board | |
| Static indentation | L ₄ | L ₄ | MOAT 27 : 5.1.9 |
| Dynamic indentation | I ₄ | I ₄ | MOAT 27 : 5.1.10 |
| Tensile bond strength (N) | | | <i>ad hoc</i> ⁽²⁾ |
| unaged | 5985 | 6188 | |
| heat aged ⁽³⁾ | 5490 | – | |
| heat aged ⁽⁴⁾ | 5288 | – | |
| Resistance to thermal shock | satisfactory | – | MOAT 27 : 5.1.5 |
| Coefficient of friction | Dry | Wet | T1/10 |
| Non-slip finish | 0.89 | 0.74 | |
| Delamination strength (kPa) | P5 board 469 | | EOTA TR 004 |
| Maximum load (N) | 3.395 | | |

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

(2) 150 mm by 150 mm steel plates were bonded, using epoxy adhesive, to the samples. The plates were then pulled from the specimens using a universal testing machine with a cross-head speed of 2 mm min⁻¹.

(3) Heat aged at 70°C for 28 days.

(4) Heat aged at 70°C for 90 days.

– not tested

Table 4 Physical properties of the Double-top system — general

| Test (units) | Mean results | Method ⁽¹⁾ |
|--------------------|----------------|-----------------------|
| Static indentation | L ₄ | EOTA TR 007 |

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

Bibliography

BS 476-3 : 2004 *Fire tests on building materials and structures — Classification and method of test for external fire exposure to roofs*

BS 2782-3.320A to 320F : 1976 *Methods of testing plastics — Mechanical properties — Tensile strength, elongation and elastic modulus*

BS 2782-10.1001 : 1977 *Methods of testing plastics — Glass reinforced plastics — Measurement of hardness by means of a Barcol impressor*

BS 2782-10.1005 : 1977 *Methods of testing plastics — Glass reinforced plastics — Determination of flexural properties — Three point method*

BS 2782-10.1006 : 1978 *Methods of testing plastics — Glass reinforced plastics — Determination of volatile matter and resin content of synthetic resin impregnated textile glass fabric*

BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*

BS 3496 : 1989 *Specification for a glass fibre chopped strand mat for reinforcement of polyester and other liquid laminating systems*

ISO 1183 : 1987 *Plastics — Methods for determining the density and relative density of non-cellular plastics*

MOAT No 27 : 1983 *General Directive for the Assessment of Roof Waterproofing Systems*

EOTA Technical Report TR 004 (May 1999), *Liquid Applied Roof Waterproofing Kits (LARWK) — Determination of the resistance to delamination*

EOTA Technical Report TR 007 (May 1999), *Liquid Applied Roof Waterproofing Kits (LARWK) — Determination of the resistance to static indentation*

prEN 1187 : 2001 *Test methods for external fire exposure to roofs*

Conditions of Certification

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 Publications and documents referred to in this Certificate are those that the BBA deems to be relevant at the date of issue or re-issue of this Certificate and include any: Act of Parliament; Statutory Instrument; Directive; Regulation; British, European or International Standard; Code of Practice; manufacturers' instructions; or any other publication or document similar or related to the aforementioned.

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.