

Soprema UK Ltd

Unit 4
Lancaster Way
Earls Colne Business Park
Colchester
Essex CO6 2NS
Tel: 0845 194 8727 Fax: 0845 194 8728
e-mail: info@soprema.co.uk
website: www.soprema.co.uk



Agrément Certificate
13/4971
Product Sheet 1

ALSAN LIQUID-APPLIED ROOF WATERPROOFING SYSTEMS

ALSAN 500

This Agrément Certificate Product Sheet⁽¹⁾ relates to Alsan 500, a polyurethane, liquid-applied roof waterproofing for use on flat and pitched roofs with limited and pedestrian access.

(1) Hereinafter referred to as 'Certificate'.

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 will resist the passage of moisture into a building (see section 6).

Properties in relation to fire — the system will enable a roof to be unrestricted under the Building Regulations (see section 7).

Resistance to wind uplift — the system will resist the effects of any likely wind suction acting on the roof (see section 8).

Resistance to foot traffic — the system will accept, without damage, the limited foot traffic and loads associated with installation, maintenance and pedestrian traffic (on defined walkways, verandas and terraces) (see section 9).

Durability — under normal service conditions the system will provide a durable roof waterproofing with a service life in excess of 10 years (see section 11).

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

Simon Wroe
Head of Approvals — Materials

Greg Cooper
Chief Executive

Date of First issue: 28 March 2013

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
Watford
Herts WD25 9BA

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

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Regulations

In the opinion of the BBA, Alsan 500, if installed, used and maintained in accordance with this Certificate, will meet or contribute to meeting 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:	B4(2)	External fire spread
Comment:		On suitable substructures the use of the system will enable a roof to be unrestricted under this Requirement. See section 7 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The system, including joints, will enable a roof to meet this Requirement. See section 6.1 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The system is acceptable. See section 11 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 use of the system satisfies the requirements of this Regulation. See sections 10 and 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.8	Spread from neighbouring buildings
Comment:		The system, when applied to a suitable substructure, is regarded as having low vulnerability under clause 2.8.1 ⁽¹⁾⁽²⁾ of this Standard. See section 7 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system, including joints, 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 6.1 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The system 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 applicable to conversions
Comment:		Comments made in relation to the system 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) 2012

Regulation:	23	Fitness of materials and workmanship
Comment:		The system is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	28(b)	Resistance to ground moisture and weather
Comment:		The system, including joints, will enable a roof to satisfy the requirements of this Regulation. See section 6.1 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		On suitable substructures the use of the system will be unrestricted by the requirements of this Regulation. See section 7 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: 3 *Delivery and site handling* (3.1 and 3.3 to 3.5) and 13 *Precautions* of this Certificate.

Additional Information

NHBC Standards 2013

NHBC accepts the use of Alsan 500, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards, Part 7 Roofs, Chapters 7.1 Flat roofs and balconies* and *Chapter 7.2 Pitched roofs*.

CE marking

The Certificate holder has taken the responsibility of CE marking the system in accordance with European Technical Approval ETA-05/015, issued by the Centre Scientifique et Technique du Bâtiment (CSTB). An asterisk (*) appearing in this Certificate indicates that data shown is given in the manufacturer's Declaration of Performance.

1 Description

1.1 Alsan 500 is a cold-applied, liquid-applied roof waterproofing system comprising:

- Alsan H80 — a one-component polyurethane primer
- Alsan 500 — a polyurethane-based, cold-applied, liquid-applied roof waterproofing resin
- Alsan 500 F — a one-component, coloured polyurethane finish (top coat)
- Alsan 500 FT — a one-component, transparent polyurethane top coat.

The coloured finish is available in beige, ivory, pebble grey or window grey as standard. Other colours are available on request.

1.2 The system can be finished with a sprinkling of fine silica to provide a non-slip finish (see section 14.4).

2 Manufacture

2.1 The system components are manufactured by blending together raw materials.

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.

2.3 The system components are manufactured by Soprema SAS, Usine de Strasbourg, 14 rue de Saint Nazaire, BP 60121, F-67025 Strasbourg Cedex 1 and marketed/distributed in the UK by the Certificate holder.

2.4 The management system of Soprema SAS has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by BSI (Certificate FM 513481).

3 Delivery and site handling

3.1 The components of the system are delivered to site in 5 or 25 kg containers. The Alsan H80 primer is available in 5 or 20 kg containers.

3.2 Each container carries a label bearing the Certificate holder's name, logo, product name, batch number, health and safety data and the BBA identification mark incorporating the number of this Certificate. The product packaging includes the CE mark as described in the *Additional Information* section of this Certificate.

3.3 The system components are classified under the *Chemicals (Hazard Information and Packaging for Supply) Regulations 2009* (CHIP 4)/*the Classification, Labelling and Packaging of Substances and Mixtures (CLP Regulations) 2009* (see Table 1) and all containers bear the appropriate hazard warning label.

Table 1 Flashpoints and hazard classifications

Component	Flashpoint(°C)	Classification
Alsan H80	-4°C	Highly flammable, harmful
Alsan 500	<20°C	Highly flammable, harmful
Alsan 500 F	>20°C	Highly flammable, harmful
Alsan 500 FT	>20°C	Highly flammable, harmful

3.4 The components of the system are highly flammable and any containers, empty or full, must be kept at least 10 m away from any heat source or naked flame.

3.5 The system products contain isocyanates and must only be used in well-ventilated areas. Inhalation, ingestion or skin contact should be avoided.

3.6 Resins should be stored upside down in their original, unopened containers in dry, unventilated conditions, away from heat and oxidising agents and out of direct sunlight. Storage temperatures should be in the range 5°C to 35°C.

3.7 When correctly stored in accordance with the Certificate holder's instructions, the components of the system will have a storage life of approximately 9 months. The Certificate holder's product data sheets should be consulted for further details.

The following is a summary of the assessment and technical investigations carried out on Alsan 500.

Design Considerations

4 Use

4.1 Alsan 500 is satisfactory for use as a roof waterproofing system on flat and pitched roofs with limited and pedestrian access.

4.2 In accordance with ETAG 005 : 2005 the level of use categories for Alsan 500 are:

- categorisation by working life — W2 (10 years)*
- categorisation by climatic zone — M (moderate) and S (severe)*
- categorisation by imposed load — P3*
- categorisation of roof slope — S1 to S4 (<5% to >30% slope)*
- categorisation by surface temperature — lowest TL4 (-30°C)*
— highest TH3 (+80°C)*
- statement of dangerous substances — none contained*.

4.3 The system is suitable for use on concrete or bituminous substrates. The advice of the Certificate holder must be sought for use of the system on other substrates.

4.4 Limited access roofs are defined for the purpose of this Certificate as those subjected only to pedestrian traffic for maintenance of the roof covering and cleaning of gutters etc. Where traffic in excess of this is envisaged, additional protection to the membrane must be provided.

4.5 Pitched roofs are defined for the purpose of this Certificate as those having a fall greater than 1:6. Flat roofs are defined for the purpose of this Certificate as those having a minimum finished fall of 1:80. For design purposes, 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. Completely flat roofs are defined for the purpose of this Certificate as those having a finished fall of less than 1:80.

4.6 Structural decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2003, BS 8217 : 2005 and, where appropriate, *NHBC Standards 2013*, Chapters 7.1 *Flat roofs and balconies* and 7.2 *Pitched roofs*.

4.7 Imposed loads, dead loads and wind loading are calculated in accordance with BS EN 1991-1-1 : 2002, BS EN 1991-1-3 : 2003, BS EN 1991-1-4 : 2005 and their respective National Annexes.

4.8 Insulation materials used in conjunction with the membranes must be in accordance with the Certificate holder's instructions and be either:

- as described in the relevant clauses of BS 8217 : 2005, or
- the subject of a current BBA Certificate and be used in accordance with, and within the scope of, that Certificate.

5 Practicability of installation

The system must only be installed by installers trained and approved by the Certificate holder.

6 Weathertightness



6.1 The system will adequately resist the passage of moisture into a building and enable a structure to comply with the 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 and 3.10.7

Northern Ireland — Regulation 28(b).

6.2 The system is impervious to water and will achieve a weathertight roof capable of accepting minor structural movement.

7 Properties in relation to fire



7.1 When tested in accordance with EN 1187 : 2002 test 4, a system comprising calcium silicate board, primed with H80 primer and coated with Alsan 500, was classified as B_{roof} (t4) in accordance with Table 1 of EN 13501-5 : 2005 + A1 : 2009.

7.2 The designation of other specifications 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.

8 Resistance to wind uplift

The adhesion of the system to concrete, mastic asphalt and suitably adhered mineral bituminous felts is sufficient to resist the effects of wind suction, thermal cycling or other minor structural movements likely to occur in service.

9 Resistance to foot traffic

9.1 Results of tests indicate that the system can accept, without damage, the limited foot and light concentrated loads associated with installation and maintenance operations. However, reasonable care must be taken to avoid puncture by sharp objects or concentrated loads.

9.2 Where traffic in excess of this is envisaged, such as maintenance of lift equipment, additional protection to the membrane in accordance with the Certificate holder's instructions must be provided.

10 Maintenance



10.1 The system must be the subject of annual inspections and maintenance to ensure continued performance.

10.2 Where damage has occurred it must be swiftly repaired in accordance with section 1.5 and the Certificate holder's instructions.

11 Durability



Results of accelerated weathering tests confirm that satisfactory retention of properties is achieved. All available evidence indicates that the system should achieve an initial life expectancy of at least 10 years.

Installation

12 General

12.1 Substrates to which the Alsan 500 system is to be applied must be sound, dry, clean and free from sharp projections such as nail heads and concrete nibs. Rough substrates must be made good using the appropriate levelling compound in accordance with the Certificate holder's instructions.

12.2 Installation must not be carried out during inclement weather (eg rain, fog or snow). When the temperature is below 5°C, suitable precautions against surface condensation on the substrate must be taken. The substrate and ambient air temperature for the application of the system must be between 0°C and 35°C.

12.3 Detailing (eg around upstands) must be carried out in accordance with the Certificate holder's instructions.

12.4 Expansion or construction joints must be additionally reinforced prior to the application of the main waterproofing layer in accordance with the Certificate holder's instructions.

13 Precautions

13.1 Vapours from the system may cause sensitisation and irritation to the respiratory system, eyes and skin. The system must only be used in areas with sufficient ventilation to prevent the build-up of vapours. Contact with the skin, eyes and clothing must be avoided. The Certificate holder's instructions and the relevant safety regulations for working procedures must be adhered to at all times.

13.2 Components of the system must not be allowed to enter the waste drainage system. Care must also be taken, eg by closing doors and windows, to prevent vapours entering the inside of the building.

14 Application

14.1 Where necessary, substrate priming is carried out in accordance with the Certificate holder's instructions.

14.2 Once the substrate has been primed and joint treatments have cured, the Alsan 500 is applied either in two layers at 750 g·m⁻² (normal traffic) or three layers at 600 g·m⁻² (intensive traffic).

14.3 The system is finished with either a layer of Alsan 500 F or Alsan 500 FT, applied at a rate of approximately $300 \text{ g}\cdot\text{m}^{-2}$.

14.4 A non-slip surface can be achieved by sprinkling a thin layer of fine silica over a fresh layer of Alsan 500 or Alsan 500 F and then rolling to provide an even finish. Alternatively an extra layer of Alsan F is applied, sprinkled with an excess of fine silica and left to dry for 24 hours before sweeping the excess silica away.

15 Repair

Minor damage to the system is rectified by cleaning back to the unweathered material and re-applying the system to the damaged area at the total application rate stated in section 14.

Technical Investigations

16 Tests

Tests were carried out in accordance with ETAG 005 : 2005, Parts 1 and 4, leading to the issue of European Technical Approval ETA 05/0151. The results were assessed by the BBA to determine:

- tensile strength and elongation
- water vapour diffusion resistance coefficient μ
- watertightness
- tensile bond strength on concrete and bitumen sheet
- dynamic indentation
- static indentation
- resistance to fatigue cycling
- resistance to low temperatures
- resistance to high temperatures
- heat ageing at 80°C for 200 days
- resistance to UV ageing at $400 \text{ MJ}\cdot\text{m}^{-2}$
- resistance to water exposure at 60°C for 30 days
- effect of application temperatures
- effect of day joints.

17 Investigations

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

17.2 Data on fire performance to EN 1187 : 2002 test 4 were assessed.

Bibliography

BS 6229 : 2003 *Flat roofs with continuously supported coverings — Code of practice*

BS 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*

BS EN 1991-1-2 : 2002 *Eurocode 1 — Actions on structures — General actions — Actions on structures exposed to fire*

NA to BS EN 1991-1-2 : 2002 *UK National Annex to Eurocode 1 — Actions on structures — General actions — Actions on structures exposed to fire*

BS EN 1991-1-3 : 2003 *Eurocode 1 — Actions on structures — General actions — Snow loads*

NA to BS EN 1991-1-3 : 2003 *UK National Annex to Eurocode 1 — Actions on structures — General actions — Snow loads*

BS EN 1991-1-4 : 2005 + Amendment 1 : 2010 *Eurocode 1 — Actions on structures — General actions — Wind actions*

NA to BS EN 1991-1-4 : 2005 + Amendment 1 : 2010 *UK National Annex to Eurocode 1 — Actions on structures — General actions — Wind actions*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

DD ENV 1187 : 2002 *Test methods for external fire exposure to roofs*

ETAG 005 : 2000 *Guideline for European Technical Approval of Liquid Applied Roof Waterproofing Kits — Part 1 : General*

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.