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Agrément Certificate
14/5140
Product Sheet 1

HYDROSTOPEU LIQUID APPLIED ROOF WATERPROOFING SYSTEMS

AH – 25 LIQUID WATERPROOFING SYSTEM

This Agrément Certificate Product Sheet⁽¹⁾ relates to the AH – 25 Liquid Waterproofing System, a one-component, liquid-applied silane terminated polyether membrane with a polyester fleece reinforcement, for use on flat and pitched roofs with limited access, including green roof and roof garden specifications.

(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 — use of the system will enable a roof to be unrestricted under the Building Regulations (see section 7).

Adhesion — 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 foot traffic and loads associated with installation and maintenance (see section 9).

Resistance to penetration by roots — the system will resist penetration by plant roots and rhizomes (see section 10).

Durability — under normal service conditions the system will provide a durable roof waterproofing with a service life in excess of 10 years (see section 12).

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

Claire Curtis-Thomas
Chief Executive

Date of First issue: 20 August 2014

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, AH – 25 Liquid Waterproofing System, 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 a suitable substructure on flat roofs, the system can contribute to a roof being unrestricted under this Requirement. See section 7 of this Certificate.
Requirement: C2(b)	Resistance to moisture
Comment:	The system will enable a roof to meet this Requirement. See section 6.1 of this Certificate.
Regulation: 7	Materials and workmanship
Comment:	The system is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation: 8(1)(2)	Durability, workmanship and fitness of materials
Comment:	The system comprises acceptable materials and satisfies the requirements of this Regulation. See sections 11 and 12 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 on flat roofs, is regarded as having a low vulnerability and can contribute to a roof being unrestricted under this Standard, with reference to clause 2.8.1 ⁽¹⁾⁽²⁾ . See section 7 of this Certificate.
Standard: 3.10	Precipitation
Comment:	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 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:	All comments given for this 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(a)(b)(i)	Fitness of materials and workmanship
Comment:	The system comprises acceptable materials and satisfies the requirements of this Regulation. See section 12 and the <i>Installation</i> part of this Certificate.
Regulation: 28(b)	Resistance to moisture and weather
Comment:	The system will enable a roof to meet the requirements of this Regulation. See section 6.1 of this Certificate.
Regulation: 36(b)	External fire spread
Comment:	On a suitable substructure on flat roofs, the system can contribute to a roof being unrestricted under the requirements of this Regulation. On sloping roofs, boundary restrictions will apply. 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* of this Certificate.

Additional Information

NHBC Standards 2014

NHBC accepts the use of the AH – 25 Liquid Waterproofing System, 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 7.2 Pitched roofs.*

CE marking

The Certificate holder has taken the responsibility of CE marking the system, in accordance with ETA-13/0654 and ETAG 005 : 2004, Parts 1 and 6. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 The AH – 25 Liquid Waterproofing System comprises a one-component, liquid-applied, silane terminated polyether solvent-free membrane, reinforced with a 110 g·m⁻² polyester fleece to provide a seamless waterproofing layer.

1.2 The membrane is available in a range of colours.

1.3 The membrane is applied by rolling or brushing in multiple layers to provide a waterproofing membrane with a minimum dry film thickness of 2.5 mm. Other thicknesses are available, but are outside the scope of this Certificate. Further information is available from the Certificate holder.

1.4 The system is the subject of ETA-13/0654 issued by the DIBt in accordance with ETAG 005 : 2004. The level of use categories* are:

working life	W2 (10 years)
climatic zones	M (moderate) and S (severe)
user load	P1 to P3 (less compressible substrate, eg concrete/steel/coniferous timber)
roof slope	S1 to S4 (<5% to > 30%)
low temperature	TL3 (-10°C)
high temperature	TH3 (80°C)
reaction to fire	EN 13501-1 Class E

1.5 Also necessary for installation of the system, and within the scope of this Certificate, is HydroStopEU 70 g·m⁻² reinforcement polyester fleece with a nominal mass per unit of 70 g·m⁻², to be used on joint detail.

1.6 Other items or components which may be used with the system, but which are outside the scope of this Certificate, include:

- primers and pre-treatments for open textured and porous cementitious substrates, glass, metals, render, insulation, hot melt membranes, solar reflective coatings, coated metals, plastics and timber/ply
- primers and pre-treatments for single ply membranes based on PVC, PVC-P, FPO, TPE, CPE, EPDM, PIB, VET, EVA and rubber
- primers and pre-treatments for membranes and coatings based on polyurethane, polymethylmethacrylate, unsaturated polyester, epoxy and acrylic
- anti-corrosion and etch primers for metals
- compounds for small- and large-scale filling, levelling and repair
- fibre-reinforced detailing resin for complex, less critical and difficult-to-access details
- coloured, smooth and anti-skid finishes.

Details of suitable products and specifications may be obtained from the Certificate holder.

2 Manufacture

2.1 The system components are manufactured by batch blending processes.

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 components of the system are delivered to site in 15.0 litre (20.3 kg) plastic buckets, bearing a label that includes the component's name, health and safety information and batch number.

3.2 HydroStopEU reinforcing fabric is delivered to site in rolls with the dimensions and weights shown in Table 1.

Table 1 HydroStopEU reinforcing fabric — dimensions and roll weights

Reinforcing fabric type	Roll width (m)	Roll length (m)	Roll weight (kg)
110 g·m ⁻²	0.25	50	1.38
	0.50	50	2.75
	1.00	50	5.50
	1.00	100	11.00
70 g·m ⁻²	0.15	50	0.53

3.3 The HydroStopEU AH-25 components can be stored unopened at between 4°C and 32°C for up to 12 months.

3.4 The system components are not classified under *The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP4)/Classification, Labelling and Packaging of Substances and Mixtures (CLP Regulation) 2009*.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on AH – 25 Liquid Waterproofing System.

Design Considerations

4 Use

4.1 AH – 25 Liquid Waterproofing System is satisfactory for use as a fully-adhered waterproofing membrane on new and existing flat and pitched roofs with limited access.

4.2 Pedestrian access roofs are defined for the purpose of this Certificate as those not subject to vehicular traffic.

4.3 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. Pitched roofs are defined for the purpose of this Certificate as those having a fall greater than 1:6.

4.4 Decks to which the membranes are to be applied must comply with the relevant requirements of BS 6229 : 2003 and, where appropriate, *NHBC Standards 2014, Chapters 7.1 Flat roofs and balconies and 7.2 Pitched roofs*.

4.5 Insulation materials to be used in conjunction with the system must be in accordance with the Certificate holder's instructions and must be either:

- as described in the relevant clauses of BS 6229 : 2003, or
- the subject of a current BBA Certificate and used in accordance with that Certificate.

4.6 Structural decks to which the system is to be applied must be suitable to transmit the dead and imposed loads experienced in service. Imposed loads, dead loading and wind loads 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 UK National Annexes.

4.7 In inverted roof specifications, the ballast requirements must be calculated in accordance with the relevant parts of BS EN 1991-1-4 : 2005 and its UK National Annex. Additional guidance is given in BBA Information Bulletin No. 4 *Inverted Roofs – Drainage and U value corrections*.

4.8 Where applicable, the Certificate holder must be consulted for advice on suitable protection (eg pavers), depending on the use of the roof.

4.9 The system has been assessed for use on the following unprimed substrates:

- concrete
- EPS
- timber
- galvanised steel plate.

The adhesion to and compatibility with other substrates must be confirmed by test (see also section 12.4 of this Certificate).

5 Practicability of installation

The system should only be applied by installers who have been trained by the Certificate holder.


6 Weathertightness

6.1 The system will adequately resist the passage of moisture into a building and will enable a roof to comply with the requirements of the national Building Regulations.



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 1.2 litres per m² HydroStopEU AH – 25 (grey) with an embedded 110 g·m⁻² polyester reinforcing fabric and overcoated with 0.8 litres per m² HydroStopEU AH – 25 applied to a substrate of 12 mm Promotech HD calcium silicate board (unprimed), was classified as B_{ROOF} (t4) in accordance with Table 1 of EN 13501-5 : 2005.

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⁽¹⁾⁽²⁾

(1) Technical Handbook (Domestic)

(2) Technical Handbook (Non-Domestic)

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

8 Adhesion

The adhesion of the system to the substrates given in section 4.9 of this Certificate is sufficient to resist the effects of wind suction, thermal cycling or other minor structural movements likely to occur in service. Acceptable adhesion to other substrates must be confirmed by test.


9 Resistance to foot traffic

The system can accept the foot traffic and light concentrated loads associated with installation and maintenance. Reasonable care should be taken to avoid puncture by sharp objects or concentrated loads.

10 Resistance to penetration of roots

The system will resist penetration by plant roots and rhizomes and can be used as a waterproofing system in green roof and roof garden specifications.

11 Maintenance

 Roofs waterproofed with the system must be the subject of bi-annual inspections in autumn after leaf fall and in spring to ensure vegetation and other debris are cleared from the roof and to ensure drains remain clear and functional.

12 Durability

 The system will function effectively as a roof waterproofing membrane for a period in excess of 10 years.

Installation

13 General

13.1 Installation of the AH – 25 Liquid Waterproofing System must be in accordance with the relevant clauses of BS 8000-4 : 1989, BS 6229 : 2003, the Certificate holder's instructions and this Certificate.

13.2 Substrates to which the system is to be applied must be sound, clean, dry and free from sharp projections. The Certificate holder's advice must be sought in regard to the suitability of the substrate to receive the system, suitable cleaning procedures and the use of a proprietary surface cleaner/fungicidal wash where required.

13.3 Detailing, such as at upstands, penetrations and joints, must be carried out in accordance with the Certificate holder's instructions before proceeding with the main roof area.

13.4 Adhesion checks must be carried out to ensure that the system is compatible with the existing surfaces. The Certificate holder must be consulted for details of suitable test methods and requirements before use.

14 Procedure

14.1 The product must be stirred before use and applied undiluted with a roofing broom/brush or roller and spread evenly.

14.2 An initial base coat of AH – 25 is applied to the substrate at a coverage rate of 1.2 litres per m². The polyester reinforcing fabric is immediately embedded into this base coat ensuring that there are no air bubbles or wrinkles. A further overcoat of AH – 25 is applied at a rate of 0.8 litres per m². If necessary additional coats are applied to achieve the minimum dry film thickness of 2.5 mm.

14.3 The polyester fleece is rolled and embedded into the wet coating, ensuring that adjacent lengths of the reinforcement overlap by a minimum of 100 mm.

14.4 If work is interrupted for periods in excess of 16 hours, the surface of the cured membrane must be slightly roughened mechanically prior to overcoating. Alternatively, fine grained, fire-dried quartz sand (eg type F33) can be sprinkled into the surface of the uncured coating to act as a mechanical key for subsequent coating.

Technical Investigations

15 Tests

Tests were carried out by Materialprüfungsanstalt für das Bauwesen Braunschweig on behalf of the Deutsches Institut für Bautechnik (DIBt) on AH – 25 Liquid Waterproofing System, leading to the issue of European Technical Approval ETA-13/0654. Results of test data were assessed by the BBA to determine:

- water vapour diffusion resistance coefficient (μ)
- tensile strength and elongation
- watertightness
- tensile bond strength
- resistance to fatigue
- crack bridging capability
- resistance to dynamic indentation
- resistance to static indentation
- resistance to low temperatures
- resistance to high temperatures
- effect of heat ageing
- effect of exposure to surface water at 60°C
- UV aged for 1000 MJ·m⁻² at 60°C (severe conditions) heat aged 200 days at 80°C
- effect of day joints
- reaction to fire.
- resistance to penetration by roots/rhizomes.

16 Investigations

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

16.2 Data on fire performance to BS 476-3 : 2004 were assessed.

16.3 Visits were made to sites in progress to assess the methods of application.

Bibliography

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

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

BS 8000-4: 1989 *Workmanship on building sites — Code of practice for waterproofing*

BS EN 1991-1-1 : 2002 *Eurocode 1 : Actions on structures — General actions*

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

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

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

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

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

BS EN 13501-5 : 2005 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*

DD CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*

ETAG 005 : 2004 *Guideline for European Technical Approval of Liquid Applied Roof Waterproofing Kits*

17 Conditions

17.1 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.

17.2 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.

17.3 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.

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

17.5 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.

17.6 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.