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Agrément Certificate

19/5652

Product Sheet 1

APERTURE SYSTEMS

APERTURE WEATHERING SYSTEM

This Agrément Certificate Product Sheet⁽¹⁾ relates to the Aperture Weathering System, a liquid-applied, reinforced polyurethane membrane for use in weatherproofing penetrations through roofs and walls, roof junction details and gutters on flat or pitched roofs with limited 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 the interior of a building (see section 6).

Properties in relation to fire — the system may enable a roof to be unrestricted under the national Building Regulations. Areas of walls on which the system has been applied should be considered as unprotected, and the use of the system is restricted in some cases (see section 7).

Adhesion — the adhesion of the system is sufficient to resist the effects of any likely wind suction and the effects of thermal or other minor movement likely to occur in practice (see section 8).

Resistance to mechanical damage — the system will accept, without damage, the limited foot traffic and loads associated with installation and maintenance (see section 9).

Durability — under normal service conditions, the system will provide a durable waterproof covering with a service life of up to 25 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

Date of Second issue: 7 July 2022

Originally certificated 17 May 2019

Hardy Giesler
Chief Executive Officer

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 MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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Regulations

In the opinion of the BBA, the Aperture Weathering System, 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:	B4(1)	External fire spread
Comment:		Areas of walls on which the system has been applied should be considered as unprotected and the system may be restricted under this Requirement in some circumstances. See section 7.3 of this Certificate.
Requirement:	B4(2)	External fire spread
Comment:		On suitable substructures, the use of the system may enable a roof to be unrestricted under this Requirement. See sections 7.1 and 7.2 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The system will enable a roof to satisfy this Requirement. See section 6 of this Certificate.
Regulation:	7(1)	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)	Durability, workmanship and fitness of materials
Comment:		The use of this system satisfies the requirements of this Regulation. See sections 10.1 and 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.6	Spread to neighbouring buildings
Standard:	2.7	Spread on external walls
Comment:		The system is restricted under clauses 2.6.2 ⁽¹⁾⁽²⁾ , 2.6.5 ⁽¹⁾ and 2.7.1 ⁽¹⁾⁽²⁾ of these Standards in some circumstances. See section 7.4 of this Certificate.
Standard:	2.8	Spread from neighbouring buildings
Comment:		When applied to a suitable substructure, the system may enable a roof to be unrestricted under clause 2.8.1 ⁽¹⁾⁽²⁾ . See sections 7.1 and 7.2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system will contribute to a structure satisfying the requirements of this Standard with reference to clause 3.10.1 ⁽¹⁾⁽²⁾ . See section 6 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The system can contribute to satisfying 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 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 (as amended)

Regulation:	23(a)(i)(ii)	Fitness of materials and workmanship
Comment:	(iii)(b)(i)	The system is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The use of the system will enable a roof to satisfy the requirements of this Regulation. See section 6 of this Certificate.
Regulation:	36	External fire spread
Standard:	36(a)	External walls
Comment:		Areas of walls on which the system is applied should be considered as unprotected under this Regulation. See section 7.3 of this Certificate.
Standard:	36(b)	Roofs
Comment:		On a suitable substructure, the use of the system may enable a roof to be unrestricted under this Regulation. See sections 7.1 and 7.2 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 section: *3 Delivery and site handling* of this Certificate.

Additional Information

NHBC Standards 2022

In the opinion of the BBA, the Aperture Weathering System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs, terraces and balconies*.

The NHBC Standards do not cover the use of the system in the refurbishment of existing roofs.

Technical Specification

1 Description

1.1 The Aperture Weathering System is a cold liquid-applied polyurethane membrane, reinforced with an embedded glass fibre matting.

1.2 The system is applied by brush or roller to weatherproof penetrations through roofs and walls, roof junction details and gutters.

1.3 The system is built up by applying the following components on site:

- Aperture MC Binder/Sealer — a two-component stabiliser and primer for use on concrete, mastic asphalt and bituminous felt substrates prior to the application of Aperture Weathering System
- Aperture Weathering System — a one-component, liquid-applied coating based on polyurethane technology that cures to form an elastomeric waterproofing and UV-resistant coating, available in Dove Grey and Slate Grey colours
- Aperture Regular Glassfibre Mat — a chopped strand glass mat with a nominal weight per unit area of 100 g·m⁻², for embedding into Aperture Weathering System for reinforcement
- Accelerator — an acid-based catalyst for accelerating the cure time for Aperture Weathering System.

1.4 The Certificate holder recommends the following ancillary items for use with the system, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- specialist primers — for use on various substrates
- HSE-approved fungicidal solution — used as a biocidal wash against mould, fungi and moss
- solvent — a blend of dimethyl adipate, dimethyl glutarate and dimethyl succinate for cleaning equipment and as a solvent wipe prior to repairs
- xylene/methyl propoxol acetate — for cleaning equipment and for use as a solvent wipe to reactivate existing coating during repairs
- fibre-reinforced coating — for use where additional reinforcement is required
- bond-breaking tape — for active cracks and joints.

2 Manufacture

2.1 The liquid components of the system are manufactured by a batch-blending process.

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 liquid components of the system are delivered to site in sealed containers labelled with the Certificate holder's name, product description and the appropriate hazard and risk labels. They are available in the pack sizes given in Table 1.

Table 1 Pack sizes and storage lives

Component	Pack size (litres)	Storage life (months)
Aperture MC Binder/Sealer	5	12
Aperture Weathering System	5	12
Accelerator	0.22	indefinite

3.2 All containers should be stored under cover in a cool, dry and ventilated place, away from other chemicals and protected from frost. Components kept in sealed unopened containers and stored in accordance with the manufacturer's instructions will have a shelf life as detailed in Table 1.

3.3 Aperture Regular Glassfibre Mat is delivered to site in rolls, with the following nominal dimensions and weight:

Length (m)	80
Width (cm)	125
Roll weight (kg)	10.

3.4 The Certificate holder has taken the responsibility of classifying and labelling the system components 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 Sheet(s).

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Aperture Weathering System.

4 Use

4.1 The Aperture Weathering System is satisfactory for use in weatherproofing penetrations and other details, eg pipes, rooflights, sunpipes, roof junction details and gutters, on flat or pitched roofs with limited access, and on walls.

4.2 The system must not be used in contact with hot pipes or flues.

4.3 The system can be used on the following substrates:

- concrete⁽¹⁾
- mastic asphalt (roofing grade)⁽¹⁾⁽²⁾
- reinforced bituminous membranes⁽¹⁾⁽²⁾

(1) Using Aperture MC Binder/Sealer as a primer.

(2) Owing to the variable nature of these materials, acceptable adhesion should be confirmed by test.

4.4 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2018, BS 8217 : 2005 and, where appropriate, *NHBC Standards 2022*, Chapter 7.1.

4.5 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 and direction of falls etc.

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

4.7 Limited access roofs are defined for the purpose of this Certificate as those subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters etc.

4.8 The NHBC requires that the waterproofing membranes, once installed, are inspected in accordance with *NHBC Standards 2022*, Chapter 7.1, Clause 7.1.11, and undergo an appropriate integrity test, where required. Any damage to the membrane is repaired in accordance with section 14 of this Certificate and reinspected.

5 Practicability of installation

The system should only be installed by installers who have been trained and approved by the Certificate holder. Details of these are available from the Certificate holder.

6 Weathertightness



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

7 Properties in relation to fire



7.1 When tested horizontally to BS 476-3 : 2004, a system comprising a 12 mm calcium silicate board, 0.6 mm thick foil-faced bitumen vapour control membrane, a coat of Aperture MC Binder/ Sealer applied at a rate of 0.1 litres per m², a coat of Aperture Weathering System applied at a rate of 1 litre per m² reinforced with 100 g·m⁻² of Aperture Regular Glassfibre Mat, and a top coat of Aperture Weathering System applied at 0.5 litres per m², achieved a fire rating of EXT.F.AA and so is unrestricted by the requirements of the national Building Regulations with respect to proximity to a boundary.

7.2 The designations and permissible areas of use of other specifications should be confirmed by reference to the requirements of the documents supporting the national Building Regulations.



7.3 The system may be used on buildings with no storey 18 m or more above the ground and more than 1 m from a boundary. With minor exceptions, the system should be included in calculations of unprotected area.



7.4 In Scotland, the system, when used in pitches greater than 70°, excluding upstands, should not be used on buildings that have a storey more than 11 m above ground level.

8 Adhesion

The adhesion of the system to the substrates listed under section 4.3 is sufficient to resist the effects of any wind suction, elevated temperature, thermal shock or structural movement likely to occur in practice.

9 Resistance to mechanical damage

9.1 The system must be used with additional protection during installation and maintenance. Reasonable care is required to avoid puncture by sharp objects.

9.2 Suitable footwear should be worn on the roof and any equipment carried onto the roof should be placed on suitable protection to prevent damage to the system.

9.3 The system will maintain its integrity as a watertight coating under normal conditions of exposure, and can accept, without damage, minor movements of the substrate.

10 Maintenance



10.1 The roof system must be the subject of six-monthly inspections and maintenance in accordance with the recommendations in BS 6229 : 2018, Chapter 7 and the manufacturer's own maintenance requirements, where relevant, to ensure continued satisfactory performance.

10.2 Washing of the system may be carried out using mild detergent, water and soft brush. Strong alkali solutions, eg caustic soda or bleach, must not be used.

10.3 In the event of contamination of the system by chemicals, oils and greases, the advice of the Certificate holder should be sought.

10.4 Where damage has occurred, it should be repaired in accordance with section 14 and the Certificate holder's instructions.

11 Durability



Under normal service conditions, the system will have a service life of up to 25 years.

Installation

12 General

12.1 The Aperture Weathering System must be applied in accordance with the relevant clauses of Liquid Roofing and Waterproofing Association (LRWA) Note 7 - *Specifier Guidance for Flat Roof Falls*, the Certificate holder's instructions and the provisions of this Certificate. Work must not be carried out if rain is imminent, and the ambient temperature at the time of laying should lie between 5 and 30°C.

12.2 Substrates to which the system is to be applied must be dry, clean and free from loose particles, fungal growth, paint, grease, oil or other contaminants which may affect the adhesion. The Certificate holder's advice should be sought for suitable cleaning procedures and the selection and use of an HSE-approved fungicidal solution, where required.

12.3 Previously coated areas must be checked for integrity and adequate adhesion to the substrate.

12.4 Defects in the substrate, eg cracks, must be suitably repaired prior to application, in accordance with the Certificate holder's instructions.

12.5 A bond-breaking tape of suitable material should be used either side of active cracks or joints. The Certificate holder should be consulted for suitable products.

12.6 The substrate should be prepared and primed with Aperture MC Binder/Sealer in accordance with the Certificate holder's instructions. Where necessary, adhesion checks should be carried out to ensure that the system is fully compatible with the existing surfaces and to determine the necessity for a primer.

12.7 Where additional reinforcement is required at vulnerable details, a coat of a compatible fibre-reinforced coating should be used in accordance with the Certificate holder's instructions.

12.8 All equipment should be cleaned after use with a proprietary solvent. The Certificate holder's advice should be sought on a suitable cleaning product.

13 Procedure

13.1 One coat of Aperture Weathering System is applied by brush, roller or airless spray to the clean prepared substrate, at a minimum application rate of 1 litre per m².

13.2 Aperture Regular Glassfibre Mat is laid and embedded into the wet coating using a brush or roller until fully saturated, allowing at least a 50 mm overlap over adjacent areas and ensuring that sufficient embedment material is applied to these areas.

13.3 At this point, a check should be made to ensure that sufficient embedment material has been applied by noting areas of exposed matting or pinholing. If necessary, additional coating material may be applied to correct any visible faults and to ensure that there are no 'tented' areas.

13.4 When the coating is dry, a check should be made for any upstanding glass fibre strands. These should be cut flush with the surface using a sharp knife, overcoated with Aperture Weathering System and allowed to dry.

13.5 The overcoat of Aperture Weathering System is applied by brush, roller or airless spray, at a minimum application rate of 0.5 litres per m².

13.6 A check should be made for the presence of pinholes and missed areas. These should be rectified by applying additional coating as necessary.

13.7 If additional slip resistance is required, an extra coat of Aperture Weathering System should be applied at a minimum application rate of 0.25 litres per m² and, while wet, broadcast with a suitable anti-slip grit. The Certificate holder should be consulted for suitable grit and broadcast rates.

14 Repair

14.1 Any damage to the system must be repaired as soon as possible to ensure that the waterproofing integrity of the system is maintained.

14.2 The system can be repaired by cutting back the damaged or debonded coating to sound, well-bonded material and reinstating it to the original specification, ensuring an overlap of at least 50 mm onto the existing coating.

14.3 Overlapped areas on the existing coating must be cleaned using a suitable solvent, prior to overcoating.

14.4 If repairs to the substrate are required, the Certificate holder's advice should be sought for suitable methods.

14.5 On completion, and when the coating has fully cured, the repair should be inspected to ensure that it is sound and well bonded to the existing coating.

Technical Investigations

15 Tests

15.1 Tests were conducted on samples of the system and the results assessed to determine:

- watertightness
- water vapour transmission
- tensile properties
- delamination strength on concrete, mastic asphalt and bitumen felt on concrete
- dynamic indentation
- static indentation
- fatigue cycling
- UV ageing
- extremes of installation temperature (tensile strength and dynamic indentation repeated)
- heat ageing (tensile strength, dynamic indentation and fatigue cycling repeated)
- water exposure (delamination strength and static indentation repeated).

15.2 Infra-red characterisation was carried out for reference purposes.

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 were evaluated.

16.3 An assessment was made of the practicability of installation of the system.

Bibliography

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

BS 6229 : 2018 *Flat roofs with continuously supported coverings — Code of practice*

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

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.