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Agrément Certificate
19/5692
Product Sheet 1

BAILEY SURE-COAT LIQUID WATERPROOFING SYSTEMS

BAILEY SURE-COAT QC COLD APPLIED LIQUID WATERPROOFING SYSTEMS

This Agrément Certificate Product Sheet(1) relates to Bailey Sure-Coat Cold-Applied Liquid Waterproofing Systems, a liquid-applied polyurethane membrane for use as a waterproofing layer on new or existing flat or pitched roofs with limited access and for waterproofing balconies, terraces and podiums.

(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 systems will resist the passage of moisture into the interior of a building (see section 6).
Properties in relation to fire — the systems can enable a roof to be unrestricted under the national Building Regulations (see section 7).
Adhesion — the systems will resist the effects of any likely wind suction acting on the roof (see section 8).
Resistance to mechanical damage — the systems will accept the limited foot traffic and loads associated with installation and maintenance (see section 9).
Durability — under normal service conditions, the systems will provide a durable roof waterproofing with a service life in excess of 25 years (see section 11).

The BBA has awarded this Certificate to the company named above for the systems described herein. These systems have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 1 October 2019

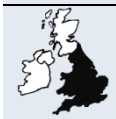
John Albon
Chief Scientific Officer

Claire Curtis-Thomas
Chief Executive

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

Regulations

In the opinion of the BBA, Bailey Sure-Coat Cold-Applied Liquid Waterproofing Systems, 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(2)**	**External fire spread**
Comment:		On a suitable substructure, the systems can enable a roof to be unrestricted under this Requirement. See section 7 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The systems will enable a roof to satisfy this Requirement. See section 6.1 of this Certificate.
Regulation:	**7**	**Materials and workmanship (applicable to Wales only)**
Regulation:	**7(1)**	**Materials and workmanship (applicable to England only)**
Comment:		The systems are acceptable. See section 11 and the *Installation* 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 the systems satisfies the requirements of this Regulation. See sections 10.1 and 11 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	2.8	Spread from neighbouring buildings
Comment:		The systems, when applied to a suitable substructure, are regarded as having a low vulnerability and will enable a roof to be 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 systems 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)(b)	Statement of sustainability
Comment:		The systems 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 in relation to the systems 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)**	**Fitness of materials and workmanship**
Comment:	**(iii)(b)(i)**	The systems are acceptable. See section 11 and the *Installation* part of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The systems 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 systems can enable a roof to be unrestricted under the requirements of this Regulation. See section 7 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 2019

In the opinion of the BBA, Bailey Sure-Coat Cold-Applied Liquid Waterproofing Systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 7.1 *Flat Roofs and balconies*.

Technical Specification

1 Description

1.1 Bailey Sure-Coat Cold-Applied Liquid Waterproofing Systems are built-up by applying the following components on site:

- Bailey Sure-Coat Standard — a one-component, polyurethane, liquid-applied waterproofing membrane available in black, light grey (similar to RAL 7001), dark grey (similar to RAL 7011), dark red and tile red
- Bailey Sure-Coat QC — a one-component, polyurethane, liquid-applied 'Quick Cure' variant of Bailey Sure-Coat Standard waterproofing membrane, available in black, light grey (similar to RAL 7001), dark grey (similar to RAL 7011), dark red and tile red, and with a typical curing time of 2.5 hours at 14°C >85% RH and 4 hours at 7°C >50% RH
- Bailey Sure-Coat PUR Catalyst Additive — a catalyst for mixing into Bailey Sure-Coat Standard or Bailey Sure-Coat QC to reduce the curing time. The catalyst must not be used at temperatures above 20˚C
- Bailey Sure-Coat Geotextile Reinforcement — a 80 $g \cdot m^{-2}$ polyester reinforcement fabric for embedding into Bailey Sure-Coat Standard or Bailey Sure-Coat QC over existing cracks, at upstands and other changes of plane in the unreinforced system
- Bailey Sure-Coat Glass Fibre Reinforcement — a 150 $g \cdot m^{-2}$ glass-fibre mat, for use in the fully reinforced system
- Bailey Sure-Coat Humidity Primer — a two-component primer for use on concrete surfaces where the moisture content of the concrete is greater than 4%
- Bailey Sure-Coat Thixotropy Additive — an additive mixed into Bailey Sure-Coat Standard or Bailey Sure-Coat QC when used at upstands.

1.2 Other materials available for use with the systems, but outside the scope of this Certificate, are:

- Bailey Sure-Coat Solvent — a general-purpose cleaning solvent and diluent viscosity modifier. When blended at a maximum addition rate of 10% with Bailey Sure-Coat Standard or Bailey Sure-Coat QC, the mixture may be used as a sealer/primer on porous substrates
- Bailey Sure-Coat Porous Deck Primer — a single-component primer for use over porous and dry substrates
- Bailey Sure-Coat PU Primer — a one-component, non-film forming primer for use on a range of non-porous substrates including glass and steel
- Bailey Sure-Coat Transparent Top Coat (pigmented) — a single-component, soft, flexible, UV-resistant decorative and protective aliphatic polyurethane coating for application over Bailey Sure-Coat Standard or Bailey Sure-Coat QC
- Bailey Sure-Coat UV Cover Coat (pigmented) — a single-component, firm, flexible, UV-resistant decorative and protective aliphatic polyurethane coating for application over Bailey Sure-Coat Standard or Bailey Sure-Coat QC
- Bailey Sure-Coat Super-Accelerant PU — a curing agent mixed into Bailey Sure-Coat Standard for use when a fast 'cure-through' is required.

2 Manufacture

2.1 The systems components 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 systems are delivered to site in sealed containers with labels bearing the Certificate holder's name, product description and the appropriate hazard and risk labels (see section 3.3). They have a storage life of 12 months and are available in the pack sizes detailed in Table 1.

Table 1 Pack sizes

Component	Pack sizes (kg)
Bailey Sure-Coat Standard	5, 10, 19.5 and 25
Bailey Sure-Coat QC	5, 10, 19.5 and 25
Bailey Sure-Coat PUR Catalyst Additive	1
Bailey Sure-Coat Humidity Primer (Parts A + B)	5 and 18
Bailey Sure-Coat Thixotropy Additive	1
Bailey Sure-Coat Solvent	4, 9 and 20
Bailey Sure-Coat PU Primer	4, 9 and 20
Bailey Sure-Coat Porous Deck Primer	4 and 20
Bailey Sure-Coat Transparent Top Coat	4 and 20
Bailey Sure-Coat UV Cover Coat	4 and 20
Bailey Sure-Coat Super-Accelerant PU	1.5
Bailey Sure-Coat Geotextile Reinforcement 80 g·m^2 (0.3 x 100 m)	2.4
Bailey Sure-Coat Geotextile Reinforcement 80 g·m^2 (1.0 x 150 m)	8
Bailey Sure-Coat Glass Fibre Reinforcement 150 g·m^2 (1.0 x 150 m)	12

3.2 All containers must be stored under cover in a cool, dry, ventilated location away from other chemicals and any source of ignition. Storage temperatures should preferably be below 20˚C with all materials protected from sub-zero temperatures and direct sunlight. Each container carries a label bearing the manufacturer's name, product name and health and safety information. Rolls of reinforcement fabric should be stored flat in a dry, clean environment and protected from moisture. The Certificate holder's product data sheets should be consulted for details.

3.3 The Certificate holder has taken the responsibility of classifying and labelling the systems 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 Bailey Sure-Coat Cold-Applied Liquid Waterproofing Systems.

Design Considerations

4 General

4.1 Bailey Sure-Coat Cold-Applied Liquid Waterproofing Systems are satisfactory for use as a fully-adhered, exposed waterproofing layer on new and existing flat and pitched roofs with limited access and, when fully protected, on pedestrian access roofs.

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

4.3 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. Where traffic in excess of this is envisaged, additional protection to the membrane must be provided (see section 13.8).

4.4 Pedestrian access roofs are defined for the purpose of this Certificate as those suitable for foot traffic only, eg terraces, balconies and podium decks. Special precautions must be taken to protect the membrane when used in these areas (see section 13.8).

4.5 Decks to which the systems are to be applied must comply with the relevant requirements of BS 6229 : 2018 and, where appropriate, *NHBC Standards* 2019, Chapter 7.1.

4.6 The adhesion of the systems has been assessed as suitable on concrete, including damp concrete(1), substrates. Acceptable adhesion of the systems to other substrates should be confirmed by test.

(1) Concrete with a humidity level ≥4% must be primed with Bailey Sure-Coat Humidity Primer.

5 Practicability of installation

Installation of the systems must only be carried out by installers who have been trained and approved by the Certificate holder.

6 Weathertightness

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

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

7 Properties in relation to fire

7.1 When classified in accordance with BS EN 13501-5 : 2005, a flat roof system comprising a 18 mm WBP plywood substrate and two coats of Bailey Sure-Coat Standard, each applied at a coverage rate of 1 kg·m^{-2} is designated B_{ROOF}(t4).

7.2 The designation of other specifications should be confirmed by reference to the requirements of the documents supporting the national Building Regulations.

8 Adhesion

The adhesion of the systems to concrete is sufficient to resist the effects of wind suction, thermal cycling or other minor structural movement likely to occur in service. Acceptable adhesion to other substrates should be confirmed by test.

9 Resistance to mechanical damage

9.1 The systems can accept the limited foot traffic and light concentrated loads associated with installation and maintenance. Where traffic in excess of this is envisaged, such as for maintenance of lift equipment, a walkway should be provided, for example, using concrete slabs supported on bearing pads. Reasonable care should be taken to avoid puncture by sharp objects or concentrated loads.

Table 2 Imposed load categories(1)

Temperature for static loading test (°C)	Unreinforced system	Reinforced system
60	P3	P4
80	P3	P4
90	P2	P3

(1) The imposed load category is derived from results of static loading and dynamic impact testing. The imposed load categories are defined in ETAG 005, Part 1, Chapter 4, Section 4.7.3.3.

9.2 When used on pedestrian access roofs, the systems must be fully protected (see section 13.8).

10 Maintenance

10.1 Installations must be the subject of twice yearly inspections and maintenance to ensure continued performance.

10.2 Maintenance should include checks and operations to ensure that the membrane and drainage outlets are free from the build-up of silt and other debris, and that protection layers, eg walkways, are in good condition.

10.3 In the event of the systems being contaminated by oil, grease or other chemicals, the advice of the Certificate holder must be sought.

10.4 Damage to the systems must be repaired as soon as possible (see section 14).

11 Durability

With adequate maintenance and repair, the systems will have an expected service life in excess of 25 years.

Installation

12 General

12.1 Installation of Bailey Sure-Coat Cold-Applied Liquid Waterproofing Systems must be in accordance with the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989, BS 6229 : 2003, the Certificate holder's instructions and this Certificate.

12.2 Installation should not be carried out during inclement weather, eg rain, fog or snow, and the ambient temperature at the time of laying must be between 5°C and 35°C. Surfaces to be coated must be at least 3°C above the dew-point.

12.3 Substrates to which the systems are to be applied must be sound, dry, clean and free from sharp projections such as nail heads and concrete nibs. The Certificate holder's advice should be sought for suitable cleaning procedures and the use of a proprietary surface cleaner/HSE approved fungicidal wash.

12.4 Previously-coated areas must be checked for integrity and adequate adhesion to the substrate. Defects such as cracks and blisters must be repaired prior to application of the systems in accordance with the Certificate holder's instructions.

12.5 Defects in the substrate (eg cracks) must be repaired, prior to application, in accordance with the Certificate holder's instructions. Cracks are treated with a reinforced Bailey Sure-Coat Standard coating layer consisting of a 300 mm strip of reinforcement fabric embedded in Bailey Sure-Coat Standard or Bailey Sure-Coat QC prior to the application of the main waterproofing layer.

12.6 Active joints must also be treated with a reinforced Bailey Sure-Coat Standard or Bailey Sure-Coat QC coating layer, prior to the application of the main waterproofing layer, to ensure that the designed movement accommodation is maintained. The Certificate holder's advice should be sought for suitable specifications.

12.7 Substrates must be prepared and primed in accordance with the Certificate holder's instructions. Adhesion checks should be carried out to ensure that the systems are fully compatible with the existing surfaces and to determine the necessity for a primer (see section 4.6).

12.8 The Certificate holder should be consulted on specifications for detailing around drains and other penetrations.

12.9 After use, all equipment must be cleaned with Bailey Sure-Coat Solvent. The Certificate holder's advice can be sought on the use of other cleaning products.

13 Procedure

13.1 Bailey Sure-Coat Standard or Bailey Sure-Coat QC mixed for at least two minutes using a slow-speed drill fitted with a suitable paddle stirrer, taking care to avoid excessive air entrainment and ensuring that any settlement occurring during storage is re-dispersed and the product is homogeneous.

13.2 Cracks and upstands must be treated with a reinforced Bailey Sure-Coat Standard or Bailey Sure-Coat QC coating layer in accordance with the Certificate holder's instructions.

13.3 Where application to upstands or other steep slopes is required, Bailey Sure-Coat Thixotropy Additive is mixed into Bailey Sure-Coat Standard or Bailey Sure-Coat QC at a rate of 1 kg of additive to 25 kg of coating.

13.4 Bailey Sure-Coat Standard or Bailey Sure-Coat QC is applied by roller, squeegee or suitable airless spray machine in two coats each at a rate of 1 $kg \cdot m^{-2}$ to achieve a minimum total application rate of 2 $kg \cdot m^{-2}$ and a minimum total coating thickness of 1.6 mm. For the reinforced system, Bailey Sure-Coat Glass Fibre Reinforced 150 $g \cdot m^2$ is embedded in the wet base coat. At least 24 hours should be allowed between coats of Bailey Sure-Coat Standard, and 1 to 4 hours between coats of Bailey Sure-Coat Standard.

13.5 When applied by roller, it is recommended that the membrane application is carried out in two or three coats to achieve the required application rate.

13.6 Following application, a spiked roller is used to eliminate air bubbles that form in the wet membrane.

13.7 A check must be made on the cured membrane for the presence of pinholes and missed areas. These are rectified by applying additional coats of membrane as necessary.

13.8 Where protection is required, eg when used on public access roofs, the fully cured system must be covered with a protective membrane prior to bedding suitable paving or tiles on a sand or mortar bed. The Certificate holder must be consulted for details.

14 Repair

14.1 Damage to systems must be repaired as soon as possible to ensure that the waterproofing integrity is maintained.

14.2 The systems can be repaired by cutting back the damaged or de-bonded coating to sound, well-bonded material and reinstating it to the original specification ensuring an overlap of at least 30 mm onto the existing coating.

14.3 Areas of existing coating to be overlapped must be cleaned, dried and primed with Bailey Sure-Coat PU Primer and allowed to fully dry for at least one hour prior to overcoating in accordance with the Certificate holder's instructions.

14.4 If repairs to the substrate are required, the Certificate holder's advice must be sought for suitable repair materials.

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

Technical Investigations

15 Tests

15.1 Tests on Bailey Sure-Coat Cold-Applied Liquid Waterproofing Systems were carried out and the results assessed to determine:

- tensile strength and elongation
- water vapour resistance
- water absorption
- watertightness
- tensile bond strength on concrete, ceramic, polyurethane foam and day joints
- dynamic indentation
- static indentation
- resistance to fatigue cycling
- resistance to crack-bridging
- resistance to low temperatures
- resistance to high temperatures
- heat ageing at 80˚C for 200 days
- resistance to UV ageing
- resistance to water exposure
- the effect of application temperatures
- wind uplift resistance before and after thermal shock.

15.2 Additional characterisation tests were carried out on the systems components.

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 An assessment was made of fire data.

16.3 Visits were made to existing sites in Spain to assess the in-service performance of the systems.

Bibliography

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

BS 8000-0 : 2014 *Workmanship on construction sites — Introduction and general principles*
BS 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*

BS EN 13501-5 : 2005 + A1 : 2009 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*

ETAG 005 : 2000, Rev 2004 Part 1 *Guideline for European Technical Approval of Liquid Applied Roof Waterproofing Kits – General*

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.

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