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Agrément Certificate
25/7333
Product Sheet 1 Issue 1

EAGLE WATERPROOFING ROOF WATERPROOFING SYSTEMS

ULTRAFLEX LIQUID WATERPROOFING SYSTEM

This Agrément Certificate Product Sheet(1) relates to the Ultraflex Liquid Waterproofing System, a single component, cold liquid-applied polyurethane roof waterproofing membrane, for use on pitched and flat roofs, including those with protected zero falls, and in roof garden and green roof specifications with limited access, on new or existing roofs.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:

- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review

KEY FACTORS ASSESSED

Section 1. Mechanical resistance and stability
Section 2. Safety in case of fire
Section 3. Hygiene, health and the environment
Section 4. Safety and accessibility in use
Section 5. Protection against noise
Section 6. Energy economy and heat retention
Section 7. Sustainable use of natural resources
Section 8. Durability

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 issue: 16 April 2025

Hardy Giesler
Chief Executive Officer

This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.

The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).

Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

The Certificate should be read in full as it may be misleading to read clauses in isolation.

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

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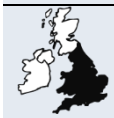
SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that the Ultraflex Liquid Waterproofing 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 Building Regulations 2010 (England and Wales) (as amended)

Requirement:	**B4(1)**	**External fire spread**
Comment:		The system is restricted by this Requirement in some circumstances. See section 2 of this Certificate.
Requirement:	**B4(2)**	**External fire spread**
Comment:		On a suitable substructure, the system may enable a roof to be unrestricted under this Requirement. See section 2 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The system will enable a roof to satisfy this Requirement. See section 3 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The system is acceptable. See sections 8 and 9 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 this Regulation. See sections 8 and 9 of this Certificate.
Regulation:	**9**	**Building standards – construction**
Standard:	2.8	Spread from neighbouring buildings
Comment:		The system, when applied to a suitable structure, may enable a roof to be unrestricted by this Standard, with reference to clause 2.8.1(1)(2). See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system will enable a roof to satisfy this Standard, with reference to clauses 3.10.1(1)(2) and 3.10.7(1)(2). See section 3 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 – conversion**
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(1)(a)(i)(ii) (iii)(iv)(b)(i)**	**Fitness of materials and workmanship**
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The system will enable a roof to satisfy this Regulation. See section 3 of this Certificate.
Regulation:	**36(a)**	**External fire spread**
Comment:		The system is restricted by this Regulation in some circumstances. See section 2 of this Certificate.
Regulation:	**36(b)**	**External fire spread**
Comment:		On a suitable substructure, the system may enable a roof to be unrestricted by this Regulation. See section 2 of this Certificate.

Additional Information

NHBC Standards 2025

In the opinion of the BBA, the Ultraflex Liquid Waterproofing 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 roof, terraces and balconies*.

In addition, in the opinion of the BBA, the system, when installed and used in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards for Conversions and Renovations*, taking account of other relevant guidance within the Chapter and the suitability of the substrate to receive the system.

The *NHBC Standards* do not cover the refurbishment of existing roofs.

Fulfilment of Requirements

The BBA has judged the Ultraflex Liquid Waterproofing System to be satisfactory for use as described in this Certificate. The system has been assessed as a cold liquid-applied waterproofing membrane for use on pitched and flat roofs, including those with protected zero falls, and in roof garden and green roof specifications with limited access, on new or existing roofs.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the system under assessment. The Ultraflex Liquid Waterproofing System consists of:

- Ultraflex PU Primer — a two-component, polyurethane-based primer for use over concrete substrates
- Ultraflex — a one-component waterproofing based on polyurethane resin
- Ultratop — a two-component polyurethane resin UV-protection finishing layer
- Ultraflex Grip — plastic beads mixed in to Ultratop to provide a rough surface.

The waterproofing components and primers have the nominal characteristics given in Tables 1 and 2 respectively.

Table 1 Nominal characteristics of the waterproofing components

Characteristic (unit)	Component	
	Ultraflex	Ultratop
Colour	dark grey	Component A and B: dark grey
Percentage solids (%)	90	70-75
Viscosity at 23°C (cps)	2500-4000	Component A: 4000 ± 1000 Component B: 275 ± 50
Specific gravity ($g \cdot cm^{-3}$)	1.4–1.5	1.20

Table 2 Nominal characteristics of the primers

Characteristic (unit)	Ultraflex PU Primer
Colour	Component A: brown Component B: yellow
Percentage solids (%)	Component A: 0 Component B: 0
Viscosity at 23°C (mPa·s)	Component A: 450 Component B: 900
Specific gravity ($g \cdot cm^{-3}$)	1.11

Applications

The system is satisfactory for use on pitched, flat and protected zero fall roofs with limited access on the following substrates:

- concrete
- PU insulation
- metal (steel).

When used over insulation, the system is only suitable for non-accessible areas.

The system is also satisfactory for use on protected zero-fall roofs with limited access, on concrete substrates.

Definitions for products and applications inspected

The following terms are defined for the purpose of this Certificate as:

- limited access roof — a roof subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc
- flat roof — a roof having a minimum finished fall of 1:80(1)
- zero fall roof — a roof having a finished fall which can vary between 0 and 1:80(1)
- pitched roof — a roof having a fall in excess of 1:6
- roof garden (intensive) — a roof with a substantial layer of growing medium with planting that can include shrubs and trees, generally accessible to pedestrians
- green roof (extensive) — a roof with a shallow layer of growing medium planted with low-maintenance plants such as mosses, sedums, grasses and some wildflower species
- invasive plant species — vegetation species having vigorous and/or invasive root systems likely to cause damage to components of the inverted roof insulation system and roof waterproofing.

(1) *NHBC Standards* 2025 require a minimum fall of 1:60 for green roofs and roof gardens.

Product assessment – key factors

The system was assessed for the following key factors, and the outcome of the assessments is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

1 Mechanical resistance and stability

Not applicable

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 External fire spread

2.1.1 Result of External fore spread tests are given in Table 3.

Table 3 External fire spread results

Product assessed	Assessment method	Requirement	Result
12 mm calcium silicate board(1) 2 mm Ultraflex 250 g·m^{-2} Ultratop	Tested to DD CEN/TS 1187 : 2012, test 4 and classified in accordance with BS EN 13501-5 : 2005 for slopes below 10°	Value achieved	B_{ROOF}(t4)

(1) This component is outside the scope of this Certificate.

2.1.2 On the basis of data assessed, the system listed in Table 3 will be unrestricted by the documents supporting the national Building Regulations with respect to proximity to a relevant boundary. Restrictions may apply at junctions with compartment walls.

2.1.3 A roof incorporating the system will also be unrestricted under the national Building Regulations in the following circumstances:

- when protected by an inorganic covering (eg gravel or paving slabs) listed in the Annex of Commission Decision 2000/553/EC
- a roof garden covered with a drainage layer of gravel 100 mm thick and a soil layer 300 mm thick
- when used in an irrigated roof garden or green roof specifications.

2.1.4 The classification and permissible areas of use of other specifications must be confirmed by reference to the requirements of the documents supporting the national Building Regulations.

2.1.5 If allowed to dry, plants used may allow the spread of flame across the roof. This must be taken into consideration when selecting suitable plants for the roof. Appropriate planting, irrigation and/or protection must be applied to ensure the overall fire rating of the roof is not compromised.

2.2 Reaction to fire

2.2.1 The Certificate holder has not declared a reaction to fire classification to BS EN 13501-1 : 2018 for the system.

2.2.2 On the basis of data assessed, the system will be restricted in use under the documents supporting the national Building Regulations in some cases.

2.2.3 In England, the system, when used in pitches greater than 70°, excluding upstands, must not be used less than 1 m from a relevant boundary, or on residential buildings more than 11 m in height or on other buildings more than 18 m in height. Restrictions apply on assembly and recreation buildings. These constructions must also be included in calculations of unprotected area.

2.2.4 In Wales, the system, when used in pitches greater than 70°, excluding upstands, must not be used less than 1 m from a relevant boundary, or on buildings more than 18 m in height. Restrictions apply on assembly and recreation buildings. These constructions must also be included in calculations of unprotected area.

2.2.5 In Northern Ireland, when used in pitches greater than 70°, excluding upstands, the system does not achieve the minimum Class E reaction to fire classification to BS EN 13501-1 : 2018, and designers must seek guidance on the proposed use of the system from the relevant Building Control Body.

2.2.6 In Scotland, the use of the system is unrestricted with respect to building height and proximity to a relevant boundary. However, restrictions on the overall construction may apply, depending on the reaction to fire classification achieved by the complete system, which must be established on a case-by-case basis.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Weathertightness

3.1.1 Results of weathertightness tests are given in Table 4.

Table 4 Weathertightness results

Product assessed	Assessment method	Requirement	Result
Ultraflex	Watertightness to EOTA TR-003 : 2004	No evidence of water leakage	Pass
Ultraflex	Water vapour diffusion-equivalent air layer thickness (S_d) to BS EN 1931 : 2000 (22°C / 95% RH)	Value achieved	3 m
Ultraflex	Delamination to EOTA TR-004 : 2004	≥ 50 kPa	
- on concrete			Pass
- on steel			Pass
- on PU			Pass
- on day joint			Pass

3.1.2 On the basis of data assessed, the system will adequately resist the passage of moisture to the interior of a building and so satisfy the requirements of the national Building Regulations.

3.1.3 The adhesion of the system is sufficient to resist the effects of wind suction, elevated temperature and thermal shock conditions likely to occur in practice and remain weathertight.

3.2 Resistance to mechanical damage

3.2.1 Results of resistance to mechanical damage tests are given in Table 5.

Table 5 Results of mechanical damage results

Product assessed	Assessment method	Requirement	Results
Ultraflex	Dynamic indentation to EOTA TR-006 : 2004	Value achieved	
- on steel	Tested at 23°C		I_4
	Tested at -20°C		I_4
- on PU	Tested at 23°C		I_2
	Tested at -20°C		I_2
Ultraflex	Static indentation to EOTA TR-007 : 2003	Value achieved	
- on steel	Tested at 23°C		L_4
	Tested at 60°C		L_4
	Tested at 90°C		L_4
- on PU	Tested at 23°C		L_1
	Tested at 60°C		L_1
Ultraflex	Tensile strength to BS EN ISO 527-3 : 2018	Value achieved	5 MPa
Ultraflex	Elongation to BS EN ISO 527-3 : 2018	Value achieved	418%
Ultraflex	Fatigue cycling to EOTA TR-008 : 2004 Tested at -10°C (1000 cycles)	Watertight and less than 75 mm delamination from the substrate	Pass

3.2.2 On the basis of data assessed, the system can accept, without damage, the foot traffic and light concentrated loads associated with installation, maintenance and the effects of minor movement likely to occur in practice while remaining weathertight.

3.2.3 Where traffic in excess of the examples given in section 3.2.2 is envisaged, such as for maintenance of lift equipment, a walkway must be provided (for example, using concrete slabs supported on bearing pads). Reasonable care must be taken to avoid puncture by sharp objects or concentrated loads.

3.2.4 The system is capable of accepting minor structural movement while remaining weathertight.

3.3 Resistance to root penetration

3.3.1 Results of a root penetration test is given in Table 6.

Table 6 Resistance to root penetration results

Product assessed	Assessment method	Requirement	Result
Ultraflex Liquid Waterproofing System	Root penetration to EN 13498 : 2007	No penetration	Pass

3.3.2 On the basis of data assessed, the system, when used in green roof and roof garden applications, will resist penetration by plant roots and remain weathertight.

4 Safety and accessibility in use

Data were assessed for the following characteristic.

4.1 Slip resistance

4.1.1 Results of a slip resistance test is given in Table 7.

Table 7 Slip resistance results

Product assessed	Assessment method	Requirement	Result
Ultraflex Liquid Waterproofing System with Ultraflex Grip	Slip resistance to DD ENV 12633 : 2003	Mean pendulum test value (PTV) ≥36	Pass

4.1.2 On the basis of data assessed, the system, when incorporating Ultraflex Grip, has adequate slip resistance in wet conditions and may be used in pedestrian access areas.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Not applicable.

7 Sustainable use of natural resources

Not applicable.

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in this system were assessed.

8.2 Specific test data were assessed as given in Table 8.

Table 8 Durability test results

Product assessed	Assessment method	Requirement	Result
Ultraflex - on concrete	Delamination to EOTA TR-004 : 2004 After water exposure at 60°C for 180 day to EOTA TR-012 : 2004	≥ 50kPa	Pass
Ultraflex - on steel - on PU - on steel - on PU	Dynamic indentation to EOTA TR-006 : 2004 After heat ageing at 80°C for 200 days to EOTA TR-011 : 2004 Tested at -20°C After UV ageing for 5000 hours to EOTA TR-010 : 2004, tested at -20°C	Value achieved	 I_4 I_1 I_4 I_1
Ultraflex - on steel - on PU - on steel - on steel - on steel	Static indentation to EOTA TR-007 : 2003 After water exposure at 60°C for 60 days to EOTA TR-012 : 2004 After water exposure at 60°C for 180 days to EOTA TR-012 : 2004 After water exposure at 90°C for 60 days to EOTA TR-012 : 2004 After water exposure at 90°C for 180 days to EOTA TR-012 : 2004	Value achieved	 L_4 L_1 L_4 L_4 L_2
Ultraflex	Tensile strength to BS EN ISO 527-1 : 2019 After heat ageing at 80°C for 200 days to EOTA TR-011 : 2004 After UV ageing for 5000 hours to EOTA TR-010 : 2004	Value achieved	6 MPa 6 MPa
Ultraflex	Elongation to BS EN ISO 527-3 : 2018 After heat ageing at 80°C for 200 days to EOTA TR-011 : 2004 After UV ageing for 5000 hours to EOTA TR-010 : 2004	Value achieved	 115 % 82 %
Ultraflex	Fatigue cycling to EOTA TR-008 : 2004 After heat ageing at 80°C for 200 days to EOTA TR-011 : 2004, tested at -10°C (50 cycles)	Watertight and less than 75 mm delamination from the substrate	Pass

8.3 Service life

Under normal service conditions, the system will have a life in excess of 25 years, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

9 Design, installation, workmanship and maintenance

9.1 Design

9.1.1 The design process was assessed by the BBA, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2018, BS 8217 : 2005 Sections 5.1.2 and 6.7 and, where appropriate, *NHBC Standards* 2025, Chapter 7.1.

9.1.3 For design purposes of flat roofs, twice the minimum finished fall must be assumed, unless a detailed structural analysis of the roof is available, including overall and local deflection, and direction of falls.

9.1.4 Structural decks to which the system is to be applied must be suitable to transmit the dead and imposed loads experienced in service. Allowance needs to be made for loading deflections to ensure that the free drainage of water is maintained.

9.1.5 Imposed loads, dead loading and wind loads must be calculated by a suitably experienced and competent individual in accordance with BS EN 1991-1-1 : 2002, BS EN 1991-1-3 : 2003 and BS EN 1991-1-4 : 2005, and their UK National Annexes.

9.1.6 The growing medium or other bulk material must not be stored on one area of the roof prior to installation, to ensure that localised overloading does not occur.

9.1.7 The resistance to wind uplift for warm roofs will be dependent on the cohesive strength of the insulation and the method by which it is secured to the roof deck. This must be taken into account when selecting a suitable insulation material.

9.1.8 The ballast on protected roofs or growing media used in green roofs and roof gardens must not be of a type that will be removed or become delocalised owing to wind scour experienced on the roof.

9.1.9 The ballast requirements for inverted specifications must be calculated by a suitably experienced and competent individual in accordance with the principles of BS EN 1991-1-4 : 2005 and its UK National Annex. The system must be ballasted with a minimum depth of 50 mm of aggregate. In areas of high wind exposure, the Certificate holder's advice must be sought, but such advice is outside the scope of this Certificate. Alternatively, concrete slabs on suitable supports can be used.

9.1.10 It must be recognised that the type of plants used in green roofs and roof gardens could significantly affect the expected wind loads experienced in service. Appropriate mitigation measures must be taken; the advice of the Certificate holder and / or the Green Roof Organisation (GRO) may be sought, but such advice is outside the scope of this Certificate

9.1.11 For green roofs and roof gardens, invasive non - native alien plant species as defined by UK Government guidance must not be used.

9.1.12 For green roof and roof garden finishes, to protect the roof waterproofing, invasive plant species must not be used. In particular, the following species must be excluded or managed:

- invasive weeds including buddleia

- plants and grasses with aggressive rhizomes such as bamboo
- self-setting woody weeds such as sycamore and ash seedlings must be removed at early germination stage
- other woody plants which spread aggressively including rhododendron.

9.1.13 The Green Roof Organisation (GRO) can provide guidance on species not included in section 9.1.8 but such advice is outside the scope of this Certificate.

9.1.14 The drainage systems for zero fall roofs, green roofs or roof gardens must be correctly designed, and the following points must be addressed:

- provision made for access for maintenance purposes
- for zero fall roofs, it is particularly important to identify the correct drainage points, to ensure that drainage is sufficient and effective
- dead loads for green roofs and roof gardens can increase if the drains become partially or completely blocked causing waterlogging of the drainage layer.

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

- as described in the relevant clauses of BS 6229 : 2018 and BS 8217 : 2005, or
- the subject of a current BBA Certificate and used in accordance with, and within the limitations of, that Certificate.

9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate and visits were carried out to sites in progress to assess the practicability of installation.

9.2.2 Installation of the system must be in accordance with the relevant clauses of BS 8000-0 : 2014 and BS 8000-4 : 1989, the Certificate holder's instructions and this Certificate. A summary of instructions and guidance is provided in Annex A of this Certificate.

9.2.3 All of the components must be applied when the air and substrate temperatures are greater than 5°C. Special precautions may be necessary when temperatures exceed 30°C; advice can be obtained from the Certificate holder but such advice is outside the scope of this Certificate.

9.2.4 Substrates to which the system is to be applied must be sound, clean, frost free and dry, and free from fatty/oily residues, contaminants (eg moss or algae) and sharp projections such as nail heads and concrete nibs. Substrates are high-pressure washed and rinsed to remove loose or flaking materials but must be visibly dry before application of the system. Concrete surfaces must have a moisture content of less than 5%. The Certificate holder's advice must be sought for the suitability of the substrate to receive the system and for suitable cleaning procedures, including the use of a proprietary surface cleaner/HSE-approved fungicidal wash, where required, but such advice is outside the scope of this Certificate.

9.2.5 All points of potential weakness such as splits, cracks, joints and crazed surfaces must be reinforced in accordance with the Certificate holder's instructions prior to application of the system.

9.2.6 Gutters and outlets must be checked to ensure that they are, and remain, clear of all debris.

9.2.7 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, but such advice is outside the scope of this Certificate.

9.2.8 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.

9.2.9 Primer components Parts A and B must be thoroughly mixed for two minutes using a rod stirrer.

9.2.10 The mixed primer is applied to the substrate, with a typical application rate of 0.2 $kg \cdot m^{-2}$. The primer must be completely dry before the waterproofing layer is applied.

9.2.11 Ultraflex is applied to the roof at a coverage rate of 1.8 $kg \cdot m^{-2}$, using a roller.

9.2.12 On completion, the surface must be inspected for any pinholes, and a second layer of Ultraflex applied if required.

9.2.13 Ultratop is applied as a topcoat to increase UV stability. Components A and B must be thoroughly mixed and applied at a coverage rate of 250 $g \cdot m^{-2}$.

9.2.14 Ultraflex Grip (8% weight) is mixed with Ultratop and applied with a roller onto Ultraflex.

9.2.15 The NHBC requires that the system, once installed, is inspected in accordance with *NHBC Standards* 2025, Chapter 7.1, Clause 7.1.11, including undergoing an appropriate integrity test, where required. Any damage to the system assessed in this Certificate must be repaired in accordance with section 9.4 of this Certificate and reinspected, in order to maintain system performance.

9.3 Workmanship

Practicability of installation was assessed by the BBA on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, the system must only be installed by contractors who have been trained and approved by the Certificate holder.

9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the system in use requires that it is suitably maintained. The guidance provided by the Certificate holder was assessed by the BBA and found to be appropriate and adequate.

9.4.2 The following requirements apply in order to satisfy the performance assessed in this Certificate:

9.4.2.1 The system must be the subject of visual six-monthly inspections and maintenance in accordance with the recommendations in BS 6229 : 2018, Chapter 7, and the Certificate holder's own maintenance requirements. For green roof, roof gardens and drainage systems, these six-monthly inspections must be carried out by a suitably experienced and competent individual (with horticultural knowledge) to ensure continued satisfactory performance. This must include an examination of the overall condition of the roof, ensure that drain outlets and gutters are kept clear and unblocked and, for green roofs and roof gardens, the removal of any self-propagated plants and invasive plant species found. See section 9.1.8.

9.4.2.2 Green roofs and roof gardens must be the subject of regular inspections, particularly in autumn after leaf fall and in spring, to ensure unwanted vegetation and other debris is cleared from the roof and drainage outlets. Guidance is available within the latest edition of *The GRO Green Roof Code of Best Practice*.

9.4.2.3 For green roofs, to protect the waterproofing, invasive plant species (see clauses 9.1.12 and 9.1.13 of this Certificate) must be eliminated through maintenance.

9.4.2.4 The control and removal of invasive plant species is carried out by hand. Where this is not possible, any chemicals used must be checked for compatibility with the roof waterproofing layer. The Certificate holder can advise on the suitability of a particular product, but such advice is outside the scope of this Certificate. Note, if using chemicals on a green roof or roof garden rainwater outlets may need to be disconnected from the main drainage system to prevent contamination of the local water system and/or harm to flora and fauna.

9.4.2.5 The chemical fertiliser used on green roofs and roof gardens must be checked for compatibility with the roof waterproofing layer. The Certificate holder can advise on the suitability of a particular product, but such advice is outside the scope of this Certificate.

9.4.2.6 If a leak occurs in the roof waterproof membrane, it must be repaired following removal of any gravel ballast, paving ballast, green roof or roof garden layer, water-flow-reducing layer and the insulation boards.

9.4.2.7 If minor damage occurs, it can be repaired by cleaning back to the unweathered material and recoating the damaged area with the membrane at the appropriate application rate.

10 Manufacture

10.1 The production processes for the system have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and system testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

†10.2 The BBA has undertaken to review 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.

11 Delivery and site handling

11.1 The Certificate holder stated that the system is delivered to the site in packaging bearing the system name, batch number, health and safety data, and the BBA logo incorporating the number of this Certificate. Table 9 gives the packaging types and sizes.

Table 9 Liquid component packaging and size

Component	Packaging	Package weights (kg)
Ultraflex PU Primer	Clamp top tins	5
Ultraflex	Clamp top tins	6, 25
Ultratop	Clamp top tins	Component A: 4.3, 17.20 Component B: 0.7, 2.80

11.2 Delivery and site handing must be performed in accordance with the Certificate holder's instructions and this Certificate.

11.2.1 The liquid components must be stored in a dry, shaded area and away from ignition sources.

† ANNEX A – SUPPLEMENTARY INFORMATION

Supporting information in this Annex is relevant to the system but has not formed part of the material assessed for the 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.

CLP Regulations

The Certificate holder has taken the responsibility of classifying and labelling the system and/or components under the *GB CLP Regulation* and *CLP Regulation (EC) No 1272/2008 - classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s).

Additional information on installation

A.1 Recommendations for the design and maintenance of green roof and roof garden specifications are available within the latest edition of the GRO Green Roof code – *Green Roof Code of Best Practice for the UK*.

A.2 Green roofs and roof gardens should be of a suitable design. In cases of doubt, the Certificate holder's advice should be sought, but such advice is outside the scope of this Certificate.

Bibliography

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

BS 8000-0 : 2014 + A1 : 2024 *Workmanship on construction sites – Introduction and general principles*
BS 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*

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

BS EN 1931 : 2000 *Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roof waterproofing – Determination of water vapour transmission properties*

BS EN 1991-1-1 : 2002 *Eurocode 1 : Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
NA to BS EN 1991-1-1 : 2002 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
BS EN 1991-1-3 : 2003 + A1 : 2015 *Eurocode 1 : Actions on structures — General actions — Snow loads*
NA + A2 : 18 to BS EN 1991-1-3 : 2003 +A1 : 2015 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Snow loads*
BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 : Actions on structures — General actions — Wind actions*
NA to BS EN 1991-1-4 : 2005 +A1 : 2010 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Wind actions*

BS EN 13501-1 : 2018 *Fire classification of construction products and building elements — Classification using data from reaction to fire tests*
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*

BS EN ISO 527-1 : 2019 *Plastics – Determination of tensile properties – General principles*
BS EN ISO 527-3 : 2018 *Plastics – Determination of tensile properties – Test conditions for films and sheets*

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

DD ENV 12633 : 2003 *Method of determination of unpolished and polished slip/skid resistance value*

EN 13498 : 2007 *Thermal insulation products for building applications - Determination of the resistance to penetration of external thermal insulation composite systems (ETICS)*

EOTA TR-003 : 2004 *Determination of the watertightness*
EOTA TR-004 : 2004 *Determination of the resistance to delamination*
EOTA TR-006 : 2004 *Determination of the resistance to dynamic indentation*
EOTA TR-007 : 2003 *Determination of the resistance to static indentation*
EOTA TR-008 : 2004 *Determination of the resistance to fatigue movement*
EOTA TR-010 : 2004 *Exposure procedure for artificial weathering*
EOTA TR-011 : 2004 *Exposure procedure for accelerated ageing by heat*
EOTA TR-012 : 2004 *Exposure procedure for accelerated ageing by hot water*

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