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Agrément Certificate

15/5229

Product Sheet 2 Issue 2

BMI SEALOFLEX LIQUID-APPLIED ROOF WATERPROOFING SYSTEMS

SEALOFLEX ULTIMA PREMIUM

This Agrément Certificate Product Sheet⁽¹⁾ relates to Sealoflex Ultima Premium, a one-part, liquid-applied modified polyurethane, for use as a roof waterproofing membrane system in new and refurbishment works on flat and pitched roofs with limited and pedestrian access and in roof garden and green roof specifications.

(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 Second issue: 11 October 2023

Originally certificated on 8 November 2019

Certificate amended on 24 January 2024 to alter text in Ancillary items and Applications, and sections 2.1.1, 9.1.3 and 9.1.4.

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 Sealoflex Ultima Premium, 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 suitable substructures, 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 system can satisfy the requirements of this Regulation. See sections 8 and 9 of this Certificate.
Regulation:	9	Building standards - construction
Standard:	2.6	Spread to neighbouring buildings
Standard:	2.7	Spread on external walls
Comment:		The system is restricted under clauses 2.6.4 ⁽¹⁾⁽²⁾ and 2.7.1 ⁽¹⁾⁽²⁾ of these Standards in some circumstances. See section 2 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⁾ of this Standard. See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The use of the system will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.6 ⁽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)	Fitness of materials and workmanship
Comment:	(i)(ii)(iii)	The system is acceptable. See sections 8 and 9 of this Certificate.
	(iv)(b)(i)	
Regulation:	28(b)	Resistance to moisture and weather
Comment:	The system will enable a roof to satisfy the requirements of 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 suitable substructures, the use of the system may enable a roof to be unrestricted by this Regulation. See section 2 of this Certificate.	

Additional Information

NHBC Standards 2023

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

In addition, in the opinion of the BBA, the systems 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 systems.

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

Fulfilment of Requirements

The BBA has judged Sealoflex Ultima Premium to be satisfactory for use as described in this Certificate. The system has been assessed as a roof waterproofing system on new and existing flat and pitched roofs with limited and pedestrian access.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the system under assessment. Sealoflex Ultima Premium consists of:

- Sealoflex Ultima Waterproof Coating — a one-part, moisture-triggered modified-polyurethane waterproofing coating
- Sealoflex Ultima Premium Reinforcing Fabric — a 160 g·m⁻² fine polyester fleece for system reinforcement
- Sealoflex Ultima Concrete Primer — for the preparation of concrete substrates prior to the application of the system

- Sealoflex Ultima Bitumen Primer — for the preparation of bitumen membranes and asphalt prior to the application of the system
- Sealoflex Ultima EP1 Primer — for the preparation of timber substrates and PVC waterproofing membranes prior to the application of the system
- Sealoflex Ultima TPO Primer — for the preparation of TPO waterproofing membranes prior to the application of the system
- Pyrobar and TA Underlays — self-adhesive/heat-activated, polyester-reinforced, styrene-butadiene-styrene (SBS)-modified bitumen membranes for use as a carrier membrane over insulation boards
- Sealoflex Ultima Quartz — kiln-dried silica, granule size 0.4 to 0.8 mm for use as an anti-skid additive in areas of pedestrian traffic in the Sealoflex Ultima anti-skid walkway system
- Sealoflex Ultima Wearcoat Clear — used to seal the applied Sealoflex Ultima Quartz.

The coating has the nominal characteristics of:

specific gravity ($\text{g}\cdot\text{cm}^{-3}$) 1.5
 colour mid grey.

The underlays have the nominal characteristics given in Table 1.

Table 1 Nominal characteristics of underlays

Characteristic (unit)	Underlays	
	Pyrobar	TA Underlay
thickness (mm)	4	2.3
width (m)	1	1
length (m)	10	10
roll weight (kg)	40	28

Ancillary Items

The Certificate holder recommends the use of Thermazone Roofboard (Certificate 23/6935) with the system; however, this material is outside the scope of this Certificate.

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:

- PUR adhesive
- joint reinforcement.

Applications

The system is intended for use a roof waterproofing system on new and existing flat and pitched roofs with limited and pedestrian access and in roof garden and green roof specifications on the following substrates:

- concrete
- mastic asphalt
- metal
- reinforced bitumen membranes (including mineral surfaced)
- wood
- OSB3
- plywood
- bitumen membranes
- PVC membranes
- TPO membranes
- insulation boards in conjunction with a carrier membrane.

Definitions for products and applications inspected

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

- limited access roof — a roof subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc.
- pedestrian access roof — a roof that is suitable for foot traffic only.
- 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 wild flower species.
- flat roof — a roof having a minimum finished fall of 1:80.
- pitched roof — a roof having a fall in excess of 1:6.

Product assessment – key factors

The system was assessed for the following key factors, and the outcomes of the assessments are 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 When tested to DD CEN/TS 1187 : 2012, Test 4 and classified to BS EN 13501-5 : 2016 the specifications given in Table 2 of this Certificate achieved $B_{ROOF}(t_4)$ for slopes below 10° .

Table 2 Tested system specifications for Sealoflex Ultima Premium

Layer	System ⁽¹⁾	System ⁽²⁾
Substrate	18 mm plywood deck ⁽³⁾	18 mm plywood deck ⁽³⁾
Substrate primer	Icopal SA Primer ⁽³⁾ applied at a rate between 0.125 and 0.250 L·m ⁻²	Sealoflex Ultima EP1 Primer at 100 g·m ⁻²
AVCL	TorchSafe TA VCL Sanded ⁽³⁾	—
Adhesive	Icopal Insulation Spray Adhesive ⁽¹⁾ applied at a rate of 0.044 L·m ⁻²	—
Insulation	Thermazone Roofboard ⁽¹⁾ faced with mineral glass thicknesses between 30 to 160 mm	—
Primer	Sealoflex Ultima EP1 Primer at 100 g·m ⁻²	—
System	Sealoflex Ultima Waterproof Coating, with Sealoflex Ultima Premium Reinforcing Fabric embedded, applied at a thickness of 2.1 mm (3.2 kg·m ⁻²)	Sealoflex Ultima Waterproof Coating, with Sealoflex Ultima Premium Reinforcing Fabric embedded, applied at a thickness of 2.1 mm (3.2 kg·m ⁻²)

(1) Fire classification report, reference 21471F, issued by Warringtonfire Gent. Report available from the Certificate holder.

(2) Fire classification report, reference 21471B, issued by Warringtonfire Gent. Report available from the Certificate holder.

(3) This product is outside the scope of the Certificate.

2.1.2 On the basis of data assessed, the specifications listed in Table 2 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 with respect to proximity to a relevant boundary under the national Building Regulations in the following circumstances:

- when used in protected specifications including an inorganic covering 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
- irrigated roof gardens and green roofs.

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

2.2 Reaction to fire

2.2.1 The Certificate holder has declared a reaction to fire classification of Class E⁽¹⁾ to BS EN 13501-1 : 2018 for the system.

(1) Fire classification report reference P226330 - Document DEC/2, issued by Laboratoire national de métrologie et d'essais. Report available from the Certificate holder

2.2.2 On the basis of data assessed, Sealoflex Ultima Premium, 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 roof pitches of greater than 70°, excluding upstands, should not be used less than 1 m from a boundary, or on residential buildings more than 11 m in height or on other buildings more than 18 m in height or in some cases, on assembly and recreation buildings. These constructions should also be included in calculations of unprotected area.

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

2.2.5 In Scotland and Northern Ireland, when used in pitches greater than 70°, excluding upstands, the products achieving Class E reaction to fire classification to BS EN 13501-1 : 2018 must not be used on buildings less than 1 m from a boundary nor with a storey 11 m or more above the ground level or on some entertainment, assembly, hospital and residential care buildings. These constructions must also be included in calculations of unprotected area.

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 3.

Table 3 Results of weathertightness tests

Product assessed	Assessment method	Requirement	Result
Sealoflex Ultima Premium	Watertightness to EOTA TR 003 : 2004	No leakage at 1 head of water for 24 hours	Pass
Sealoflex Ultima Premium Substrate	Delamination strength to EOTA TR 004 : 2004	≥ 50 kPa	
- concrete			Pass
- mastic asphalt			Pass
- bituminous membrane			Pass
- steel			Pass
- plywood			Pass
- - foil-faced PIR insulation			Pass
- PVC-P membrane			Pass
- TPO membrane			Pass

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

3.1.3 On the basis of data assessed, the adhesion of the system to the substrates given in the product description is sufficient to resist the effects of wind suction, thermal cycling, or other minor structural movements likely to occur in service.

3.2 Resistance to mechanical damage

3.2.1 Results of mechanical damage tests are given in Table 4.

<i>Table 4 Mechanical damage tests</i>			
Product assessed	Assessment method	Requirement	Result
Sealoflex Ultima Premium	Dynamic indentation to EOTA TR 006 : 2004	Value achieved	
Substrate			
- steel at 23°C			I ₄
- steel at -30°C			I ₄
- EPS at 23°C			I ₃
- PIR at 23°C	I ₂		
Sealoflex Ultima Premium	Static indentation to EOTA TR 007 : 2004	Value achieved	
Substrate			
- steel at 23°C			L ₄
- steel at 90°C			L ₄
- EPS at 23°C			L ₃
- PIR at 23°C	L ₂		
Sealoflex Ultima Premium	Fatigue cycling to EOTA TR 008 : 2004	Watertight and less than 75 mm delamination from substrate after 1000 cycles	Pass

3.2.2 Tensile properties and the effect of installation at extremes of temperature on physical properties were assessed using test data from a representative related system with a lower application rate.

3.2.3 On the basis of data assessed, Sealoflex Ultima Premium can accept, without damage, the limited foot traffic and light concentrated loads associated with installation, maintenance and pedestrian traffic on defined walkways. Reasonable care is required to avoid puncture by sharp objects or concentrated loads.

3.2.4 On the basis of data assessed, the system is capable of accepting minor structural movement while remaining weathertight.

3.3 Resistance to root penetration

3.3.1 Results of resistance to root penetration tests are given in Table 5.

<i>Table 5 Resistance to root penetration tests</i>			
Products assessed	Assessment method	Requirement	Result
Sealoflex Ultima Premium	EN 13948 : 2007	No root penetration after two years	Pass

3.3.2 On the basis of data assessed, Sealoflex Ultima Premium will resist penetration by plant roots and remain weathertight.

4 Safety and accessibility in use

Data were assessed for the following characteristics.

4.1 Slip resistance

4.1.1 Results of slip resistance tests are given in Table 6.

Product assessed	Assessment method	Requirement	Result
Sealoflex Ultima Premium	Pendulum test value (PTV) to	High slip potential a PTV	
- dry	BBA internal method	of 0 – 24	75
- wet		Moderate slip potential a PTV of 25 – 35	43
Sealoflex Ultima Premium with Sealoflex Ultima Quartz		Low slip potential a PTV of 36+	
- dry			66
- wet			62

4.1.2 On the basis of data assessed, the system when installed with the anti-slip layer, has a satisfactory slip resistance in dry and wet conditions and so it is suitable for use in areas of pedestrian access.

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 the system were assessed.

8.2 Specific test data were assessed as given in Table 7.

Table 7 Results of durability tests

Product assessed	Assessment method	Requirement	Result
Sealoflex Ultima Premium	Delamination strength to EOTA TR 004 : 2004	≥ 50 kPa	
Substrate	Exposure to water for 180 days at 60°C		
- concrete			Pass
- mastic asphalt	to EOTA TR 012 : 2004		Pass
- bituminous membrane			Pass
- steel			Pass
- plywood			Pass
- - foil-faced PIR insulation			Pass
- PVC-P membrane			Pass
- TPO membrane			Pass
Sealoflex Ultima Premium	Dynamic indentation to EOTA TR 006 : 2004	Value achieved	
Substrate	Heat aged 200 days at 80°C		
- steel at –30°C	to EOTA TR 011 : 2004		I ₃
- steel at –10°C	UV aged 1000 MJ·m ⁻² at 50°C		I ₃
	to EOTA TR 010 : 2004		
Sealoflex Ultima Premium	Static indentation to EOTA TR 007 : 2004	Value achieved	
- steel at 90°C	Exposure to water for 180 days at 60°C		L ₄
	to EOTA TR 012 : 2004		
Sealoflex Ultima Premium	Fatigue cycling to EOTA TR 008 : 2004	Watertight and less than 75 mm delamination from substrate after 50 cycles	Pass
	Heat aged 200 days at 80°C		

8.2.2 Tensile properties following heat ageing and UV ageing were assessed using test data from a representative related system with a lower mass per unit area reinforcement.

8.3 Service life

Under normal service conditions, the system will have a life of at least 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 and, where appropriate, *NHBC Standards 2023*, 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 Where traffic other than for installation of the system is envisaged, such as for maintenance access, for cleaning of gutters, etc, special precautions, such as the installation of Sealoflex Ultima anti-skid walkway system, must be taken.

9.1.5 The 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.

9.1.6 Imposed loads, dead loads and wind loadings 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.

9.1.7 When bonding to insulation boards, the resistance to wind uplift 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 drainage systems green roofs or roof gardens must be correctly designed, and the following points must be addressed:

- provision made for access for maintenance purposes
- dead loads for green roofs and roof gardens can increase if the drains become partially or completely blocked, causing waterlogging of the drainage layer.

9.1.9 The soil used in intensive planting must not be of a type that will be removed, or become localised, owing to wind scour on the site.

9.1.10 It must be recognised that the type of plants used could significantly affect the expected wind loads experienced in service.

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

- as described in the relevant clause of BS 6229 : 2018, or
- the subject of a current BBA Certificate and used in accordance with, and within the scope 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.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions. A summary of instructions and guidance is provided in Annex A.

9.2.3 Adhesion of the system will depend on the condition and cleanliness of the substrate, which must be visibly dry, sound and free from loose materials or contamination (eg moss or algae). Deck surfaces must be free from sharp projections, such as protruding fixing bolts or concrete nibs.

9.2.4 Damaged areas of substrate must be removed, replaced or repaired.

9.2.5 The majority of contamination is removed from the substrate by scraping and/or sweeping. Any remaining contamination is removed by suitable means such as power washing, grit blasting or mechanical abrasion.

9.2.6 Any areas of fungal growth, algae, moss etc must be treated with a suitable HSE-approved biocidal wash prior to installation of the system.

9.2.7 When required, the substrate is primed with the appropriate primer, in accordance with the Certificate holder's instructions, at the coverage rate given in Table 8 of this Certificate.

Table 8 Primer application rates

Primer	Substrate	Rate of coverage
Sealoflex Ultima EP1 Primer	timber	0.15 L·m ⁻²
Sealoflex Ultima Bitumen Primer	Reinforced bitumen membranes	0.3 L·m ⁻²
	Asphalt	0.3 L·m ⁻²
Sealoflex Ultima Concrete Primer	Concrete	0.5 kg·m ⁻²
Sealoflex Ultima TPO Primer	FPO/TPO	0.1 L·m ⁻²

9.2.8 Sealoflex Ultima Waterproof Coating is applied either by roller or brush.

9.2.9 The first layer of the coating is applied at a minimum coverage rate of 1.4 ℓ·m⁻² (2.1 kg·m⁻²).

9.2.10 Sealoflex Ultima Premium Reinforcing Fabric is applied into the wet first layer and the surface rolled to ensure elimination of trapped air and saturation of the fabric. The next width of the reinforcing fabric is laid ensuring a side lap of a minimum 75 mm over the previous reinforcing fabric.

9.2.11 Once the reinforcing fabric has been laid into the first layer, a second application of Sealoflex Ultima Waterproof Coating is applied at a minimum consumption of 0.7 ℓ·m⁻², achieving a minimum total membrane coverage rate of 2.1 ℓ·m⁻² (3.2 kg·m⁻²).

9.2.12 For pedestrian access areas, Sealoflex Ultima Quartz is applied by hand into the wet, additional layer of Sealoflex Ultima Waterproof Coating which has been applied above the cured membrane. Sufficient granules are applied to ensure full embedment of the granules. Once the waterproofing has cured, the excess granules are swept off the surface and the membrane is sealed with Sealoflex Ultima Wearcoat Clear.

9.2.13 Detailing and upstands are carried out in accordance with the Certificate holder's installation instructions (also see Annex A, section A.3 of this Certificate).

9.2.14 The NHBC requires that the Sealoflex Ultima Premium, once installed, is inspected in accordance with *NHBC Standards* 2023, Chapter 7.1, Clause 7.1.11, and undergo an appropriate integrity test, where required. Any damage to the products assessed in this Certificate must be repaired in accordance with section 9.4 of this Certificate and reinspected, in order to maintain the product's 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, installation of the system by installers 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. The following requirements apply in order to satisfy the performance assessed in this Certificate:

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

9.4.3 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 are cleared from the roof and drainage outlets (see section 9.1).

9.4.4 For green roof finishes, in order to protect the roof waterproofing, invasive plant species must be eliminated through maintenance. In particular, the following species must be removed/excluded:

- invasive weeds including Buddleia
- plants and grasses with aggressive rhizomes such as Bamboo

- self-setting woody weeds such as Sycamore and Ash seedlings should be removed at early germination stage
- other woody plants which spread aggressively including Rhododendron.

9.4.5 The Green Roof Organisation (GRO) can provide guidance on species not included in section 9.4.2.3, but such advice is outside of the scope of this Certificate.

9.4.6 The use of chemical fertiliser (inorganic material of wholly or partially synthetic origin used to sustain plant growth) must be checked for compatibility with the waterproofing layer. The Certificate holder can advise on the suitability of a particular product, but such advice is outside of the scope of this Certificate.

9.4.7 The repair of minor damage to the system can be achieved effectively by cleaning back to the unweathered material and recoating the damaged area with the membrane at the total application rate stated in section 9.2.

10 Manufacture

10.1 The production processes for the product 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 product 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 the 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 components are delivered to site in packaging bearing the Certificate holder's details, product name, hazard labelling, transportation information, batch number and the BBA logo incorporating the number of this Certificate.

11.2 Delivery and site handling must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.2.1 The resin and primer containers must be kept tightly sealed and must be stored out of direct sunlight, in a cool, ventilated place, away from ignition sources and other chemicals.

11.2.2 The resins will have a shelf life of 12 months when stored at temperatures between 5 and 35°C. At higher temperatures, the shelf-life will reduce progressively.

11.3 The system components are delivered to site as given in Table 9.

Table 9 Component packaging

Component	Packaging
Sealoflex Ultima Waterproof Coating	4 or 15 litre containers
Sealoflex Ultima Premium Reinforcing Fabric	1 x 50 m, 0.25 x 50 m, or 0.1 x 50 m rolls
Sealoflex Ultima Bitumen Primer	4 or 20 litre containers
Sealoflex Ultima EP1 Primer	4 or 20 litre containers
Pyrobar and TA Underlays	10 m rolls
Sealoflex Ultima Quartz	25 kg bags

Supporting information in this Annex is relevant to the product 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 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).

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European EAD 030350-00-0402.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of EN ISO 9001 : 2015 and EN ISO 14001 : 2015 by TÜV NORD (Certificates 44 100 191677 and 44 104 191677 respectively).

Additional information on installation

A.1 Installation should also be in accordance with the relevant clauses of Liquid Roofing and Waterproofing Association (LRWA) Note 7 – *Specifier Guidance for Flat Roof Falls*.

A.2 When removing oil and grease contamination from the substrate prior to application, the advice of the Certificate holder must be sought on approved detergents.

A.3 Pot life and cure times will vary with ambient temperature and humidity conditions during installation. At 23°C and 50% RH, the open pot life is 2 to 3 hours; the container may be resealed for future use. The system is rainproof after 30 minutes. In cases of doubt, the Certificate holder's advice should be sought.

A.4 Detailing requirements, eg at service penetrations and movement joints, must be evaluated on a case-by-case basis. The Certificate holder has standard details or can advise of suitable details for a particular application.

Maintenance

A.5 Additional guidance on maintenance for green roofs and roof gardens is available within the latest edition of the *GRO Green Roof code – Green Roof Code of Best Practice for the UK*.

Bibliography

- BS 6229 : 2018 *Flat roofs with continuously supported flexible waterproof coverings — Code of practice*
- 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 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 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*
- EN 13948 : 2007 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to root penetration*
- EN ISO 9001 : 2015 *Quality management systems — Requirements*
- EN ISO 14001 : 2015 *Environmental management systems — Requirements with guidance for use*
- DD CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*
- EOTA Technical Report TR 003 : May 2004 *Determination of watertightness.*
- EOTA Technical Report TR 004 : May 2004 *Determination of the resistance to delamination*
- EOTA Technical Report TR 006 : May 2004 *Determination of the resistance to dynamic indentation*
- EOTA Technical Report TR 007 : May 2004 *Determination of the resistance to static indentation*
- EOTA Technical Report TR 008 : May 2004 *Determination of the resistance to fatigue movement*
- EOTA Technical Report TR 010 : May 2004 *Exposure procedure for artificial weathering*
- EOTA Technical Report TR 011 : May 2004 *Exposure procedure for accelerated ageing by heat*
- EOTA Technical Report TR 012 : May 2004 *Exposure procedure for accelerated ageing by hot water*

Conditions

1 This Certificate:

- relates only to the product 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.

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.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product 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.

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

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 or any other product
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product
- actual installations of the product, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA marking and CE marking.

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product 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.