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Agrément Certificate

15/5219

Product Sheet 1 Issue 3

RADMAT SINGLE-PLY ROOF WATERPROOFING SYSTEMS

ESHAPLAN B AND FB SINGLE-PLY PVC ROOF WATERPROOFING MEMBRANES

This Agrément Certificate Product Sheet⁽¹⁾ relates to EshaPlan B and FB Single-Ply Roof Waterproofing Membranes, a range of glass-reinforced PVC roofing membranes. EshaPlan B is for use as loose-laid and ballasted waterproofing on flat roofs with limited access. EshaPlan FB is for use as fully adhered waterproofing on flat or pitched roofs, including inverted and green roofs, with limited access.

(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 products described herein. These products 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 Third issue: 28 October 2024
Originally certified on 4 August 2015

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 EshaPlan B and FB Single-Ply PVC Roof Waterproofing Membranes, 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 use of the products 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 use of the products may enable a roof to be unrestricted by this Requirement. See section 2 of this Certificate.	
Requirement:	C2(b)	Resistance to moisture
Comment:	The products, including joints, will enable a roof to satisfy this Requirement. See section 3 of this Certificate.	
Regulation:	7(1)	Materials and workmanship
Comment:	The products are 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 products satisfies 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 use of the products 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:	The products, when applied to a suitable substructure, may enable a roof to be unrestricted by this Standard, with reference to 2.8.1 ⁽¹⁾⁽²⁾ . See section 2 of this Certificate.	
Standard:	3.10	Precipitation
Comment:	The products, including joints, 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 products 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:	All comments in relation to the products 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)	Fitness of materials and workmanship
Comment:	(iii)(b)(i)	The products are acceptable. See sections 8 and 9 of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The products, including joints, will enable a roof to satisfy this Regulation. See section 3 of this Certificate.
Regulation:	36(a)	External fire spread
Comment:		The products are restricted by this Regulation in some circumstances. See section 2 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		On suitable substructures, the products may enable a roof to be unrestricted by this Regulation. See section 2 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, EshaPlan B and FB Single-Ply PVC Roof Waterproofing Membranes, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs, terraces and balconies*.

In addition, in the opinion of the BBA, the products, 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 document and the suitability of the substrate to receive the products.

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

Fulfilment of Requirements

The BBA has judged EshaPlan B and FB Single-Ply PVC Roof Waterproofing Membranes to be satisfactory for use as described in this Certificate. EshaPlan B has been assessed for use as loose-laid and ballasted waterproofing on flat roofs with limited access. EshaPlan FB has been assessed for use as fully adhered waterproofing on flat or pitched roofs, including inverted and green roofs, with limited access.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the products under assessment. EshaPlan B and FB Single-Ply PVC Roof Waterproofing Membranes are a range of glass-reinforced ($50 \text{ g}\cdot\text{m}^{-2}$), polyvinyl chloride (PVC) roofing membranes. EshaPlan FB includes a polyester fleece backing ($250 \text{ g}\cdot\text{m}^{-2}$).

The products have the nominal characteristics given in Table 1.

Table 1 Nominal characteristics of EshaPlan B and FB Single-Ply PVC Roof Waterproofing Membranes

Characteristic (unit)	Product grade					
	G 1.2	G 1.5	G 1.8	G 2.0	GF 1.2	GF 1.5
Roll length (m)	15	15	15	15	15	15
Roll width (m)	2.12	2.12	2.12	2.12	2.12	2.12
Thickness (mm)	1.2	1.5	1.8	2.0	1.2 ⁽¹⁾	1.5 ⁽¹⁾
Mass per unit area (kg·m ⁻²)	1.80	2.00	2.32	2.47	2.00	2.20
Colour	Light Grey (RAL 7001)				Light Grey (RAL 7001) or Anthracite (RAL 7015) ⁽²⁾	

(1) Excluding fleece.

(2) Other colours are available on request, subject to a minimum order.

Ancillary items

EshaPlan PU Contact Adhesive, for use in bonding EshaPlan FB to substrates, is essential to use with the products and has been assessed with the products.

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

- ProTherm PIR Insulation
- EshaPlan coated metal – a 0.6 mm galvanized steel sheet, coated with 0.6 mm of EshaPlan PVC compound, for use in detailing
- EshaPlan PVC internal and external corners – prefabricated corner units
- Polyester fleeces 120 and 300 g·m⁻² – for use as a separation layer for mechanical and chemical protection
- Glass fleece 120 g·m⁻² – for use as a separation layer between the membranes and EPS insulation boards
- EshaPlan Reinforced Strip – a 150 mm strip of EshaPlan FB, for use in sealing butt joints in EshaPlan FB.

Applications

EshaPlan B is satisfactory for use as a roof waterproofing membrane in the following specifications:

- loose-laid and ballasted on flat roofs with limited access
- on flat inverted roofs with limited or pedestrian access
- green roofs (extensive) on flat inverted roofs with limited access.

EshaPlan FB is satisfactory for use as a roof waterproofing membrane in fully adhered flat and pitched roofs with limited access.

Definitions for products and applications inspected

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

- flat roof – a roof having a minimum finished fall of 1:80⁽¹⁾
- pitched roof – a roof having a fall in excess of 1:6
- limited access roof – a roof subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc
- 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.

(1) NHBC Standards 2024 require a minimum fall of 1:60 for green roofs.

Product assessment – key factors

The products were 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 When tested to DD CEN/TS 1187 : 2012, Test 4 and classified to BS EN 13501-5 : 2005, the construction given in Table 2 of this Certificate achieved B_{ROOF}(t4) for slopes under 10°.

Table 2 Results of external fire spread tests

Substrate	Air and vapour control layer (AVCL)	Insulation	Waterproofing membrane
18 mm plywood primed with Esha SA Primer ⁽¹⁾	EshaBase SA Alu Self Adhesive Vapour Control Layer ⁽¹⁾	90 mm ProTherm ⁽¹⁾ bonded with EshaStik Polyurethane Adhesive ⁽¹⁾	1.5 mm EshaPlan FB bonded with EshaPlan PU Contact Adhesive (Grey)

(1) These components are outside the scope of this Certificate.

2.1.2 On the basis of data assessed, the construction described 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 products 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
- irrigated green roofs.

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, the plants used may allow the spread of flame across the roof. This must be taken into consideration when selecting suitable plants. 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 for the products in accordance with EN 13501-1 : 2018.

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

2.2.3 In England, the products, 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 products, 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 products do not achieve the minimum Class E reaction to fire classification to EN 13501-1 : 2018, and designers must seek guidance on the proposed use of the products from the relevant Building Control Body.

2.2.6 In Scotland, the use of the products 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 3.

Table 3 Results of weathertightness tests

Product assessed	Assessment method	Requirement	Result
1.5 mm EshaPlan B bonded with EshaPlan Contact Adhesive ⁽¹⁾	Resistance to peel from the support to MOAT 65 : 4.3.3 : 2001 to concrete	$\geq 25 \text{ N} \cdot (50 \text{ mm})^{-1}$	
	Machine direction		Pass
	Cross direction		Pass
1.5 mm EshaPlan FB bonded with EshaPlan PU Contact Adhesive	Machine direction		Pass
	Cross direction		Pass

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

3.1.2 The watertightness and water vapour transmission rate of the products were assessed using test data from a representative related product and were satisfactory.

3.1.3 On the basis of data assessed, the products, including joints, when completely sealed and consolidated, will adequately resist the passage of moisture into the interior of a building and so satisfy the requirements of the national Building Regulations.

3.1.4 On the basis of data assessed, when EshaPlan FB is adhered to a substrate of high cohesive strength, it will sufficiently resist the effect 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 resistance to mechanical damage tests are given in Table 4.

Table 4 Results of resistance to mechanical damage tests

Product assessed	Assessment method	Requirement	Result
1.2 mm EshaPlan B	Resistance to impact to BS EN 12691 : 2006	Value achieved	
	Aluminium substrate		600 mm
	EPS substrate		1000 mm
EshaPlan B	Resistance to static loading to BS EN 12730 : 2015	Value achieved	
	EPS substrate		20 kg
	Concrete substrate		20 kg
1.5 mm EshaPlan B bonded with EshaPlan PU Contact Adhesive ⁽¹⁾	Resistance to cyclic movement to MOAT 65 : 4.3.7 : 2001 to concrete	No damage to membrane or bond	
	Machine direction	failure	Pass
	Cross direction		Pass
1.5 mm EshaPlan FB bonded with EshaPlan PU Contact Adhesive	Machine direction		Pass
	Cross direction		Pass

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

3.2.2 The low temperature foldability of the products was assessed using test data from a representative related product and was satisfactory.

3.2.3 On the basis of data assessed, the products can accept the limited foot traffic and light concentrated loads associated with installation and maintenance while remaining weathertight. Reasonable care must be taken to avoid puncture by sharp objects or concentrated loads.

3.2.4 Where regular traffic is envisaged, such as for maintenance of lift equipment, a walkway must be provided, eg using concrete slabs supported on bearing pads. The advice of the Certificate holder must be sought on the most appropriate method to be used with the amount of traffic involved; however, such advice is outside the scope of this Certificate.

3.2.5 The products are capable of accepting minor structural movement while remaining weathertight.

3.3 Resistance to root penetration

In green roofs (extensive) when installed in accordance with this Certificate, the inverted roof insulation, and the water-flow-reducing layer (WFRL), the products will be adequately protected against root damage, subject to routine maintenance being carried out in accordance with this Certificate and as recommended by the Green Roof Organisation (GRO) *Code of Best Practice*.

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Not applicable.

7 Sustainable use of natural resources

The products comprise polyvinyl chloride, which can be recycled.

8 Durability

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

8.2 Specific test data were assessed as given in Table 5.

Table 5 Results of durability tests

Product assessed	Assessment method	Requirement	Result
1.5 mm EshaPlan B bonded with EshaPlan PU Contact Adhesive ⁽¹⁾	Resistance to peel from the support to MOAT 65 : 4.3.3 : 2001 to concrete after heat ageing at 80°C for 28 days	$\geq 25 \text{ N} \cdot (50 \text{ mm})^{-1}$	
	Machine direction		Pass
	Cross direction		Pass
1.5 mm EshaPlan FB bonded with EshaPlan PU Contact Adhesive	Machine direction Cross direction		Pass Pass
1.5 mm EshaPlan B bonded to concrete EshaPlan PU Contact Adhesive ⁽¹⁾	Resistance to cyclic movement to MOAT 65 : 4.3.7 : 2001 after heat ageing at 80°C for 28 days	No damage to membrane or bond failure	
	Machine direction		Pass
	Cross direction		Pass
1.5 mm EshaPlan FB bonded to concrete with EshaPlan PU Contact Adhesive	Machine direction Cross direction		Pass Pass

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

8.3 The low temperature foldability after heat and UV ageing, and peel resistance of joints after heat ageing and water soak, of the products were assessed using test data from a representative related product and were satisfactory.

8.4 Visits to existing sites, one installed during the mid-1970s and two during the early 1990s, were carried out and samples were taken to assess the durability of representative related products under normal service conditions.

8.5 Service life

8.5.1 Under normal service conditions, the products will have a life in excess of 35 years, provided they are designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

8.5.2 In environments where the products are in contact with organic solvents, the life expectancy of the membranes may be reduced. In cases of doubt, the advice of the Certificate holder must be sought.

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 products are to be applied must comply with the relevant requirements of BS 6229 : 2018 and, where appropriate, *NHBC Standards 2024*, Chapter 7.1.

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

9.1.4 Structural decks to which the products are 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 the principles of 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 precise ballast requirement for loose-laid 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 and must not be below a minimum thickness of 50 mm of aggregate. The use of concrete slabs on suitable protective supports must be considered in areas of high design wind loads.

9.1.7 The ballast on inverted/protected roofs or growing medium on green roofs must not be of a type that will be removed or become delocalised owing to wind scour experienced on the roof.

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

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

9.1.10 For green roof finishes, to protect the inverted roof insulation, WFRL and the roof waterproofing, invasive plant species must not be used. In particular, the following species must be 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.

9.1.11 The Green Roof Organisation (GRO) can provide guidance on species not included in section 9.1.10 but such advice is outside the scope of this Certificate.

9.1.12 The drainage system for inverted roofs or green roofs must be correctly designed, and the following points must be addressed:

- provision made for access for maintenance purposes
- dead loads for green roof can increase if the drains become partially or completely blocked causing waterlogging of the drainage layer
- additional guidance for inverted roof specifications is given in BBA Information Bulletin No 4 *Inverted roofs drainage and U value corrections*.

9.1.13 Insulation materials to be used in conjunction with the products must be in accordance with the Certificate holder's instructions and be:

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

9.1.14 Contact with bituminous, coal tar and oil-based products must be avoided as the products are not compatible with lower grades of bitumen. If contact with such products is likely, a separating layer must be interposed before installing the waterproofing sheet. Where doubt arises, the advice of the Certificate holder must be sought but such advice is outside the scope of this 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 of EshaPlan B and FB Single-ply PVC Roof Waterproofing Membranes must be carried out in accordance with the relevant clauses of BS 8000-0 : 2014 and BS 8000-4 : 1989, the Certificate holder's instructions and this Certificate.

9.2.3 Substrates to which the products are to be applied must be sound, dry, clean and free from sharp projections such as nail heads and concrete nibs. When used over a rough substrate, a suitable protection layer must be placed over the substrate.

9.2.4 Installation must not be carried out during inclement weather (eg rain, fog or snow). When the temperature is below 0°C, suitable precautions against surface condensation must be taken in accordance with the Certificate holder's instructions.

9.2.5 All detailing must be formed in accordance with the Certificate holder's instructions.

9.2.6 Ballast 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.

9.2.7 Installation of loose-laid applications must include the following:

EshaPlan B is laid flat onto the substrate without folds or ripples, with 50 mm minimum side laps and 50 mm minimum end laps.

- The product is mechanically fastened at the perimeter of the roof in accordance with the Certificate holder's instructions. The lap joint in these areas extends 50 mm past the fixing bar or plate.
- The lap joints are hot-air welded in accordance with section 9.2.9 and the Certificate holder's instructions.
- The product must be covered by at least a 50 mm depth of well-rounded gravel or other suitable ballast, depending on the specification being installed. In areas of high wind exposure, paving slabs set on a suitable support may be considered.

9.2.8 Installation of fully adhered applications must include the following:

- EshaPlan FB is laid flat onto the substrate without folds or ripples, with 50 mm minimum side laps and butted at the end of the roll.
- The product is folded or rolled back to its centre and EshaPlan PU Contact Adhesive applied to the substrate in accordance with the Certificate holder's recommendations, ensuring that no adhesive is applied to the weld area of the product. The product is rolled out into the wet adhesive. The process is repeated for the other end of the product.
- The side lap joints are hot air welded in accordance with section 9.2.9 and the Certificate holder's instructions. The end of the EshaPlan FB is butt jointed and sealed using EshaPlan Reinforced Strip hot-air welded along the joint.

9.2.9 The installation of joints and flashing via hot-air welding must include the following:

- Hot-air welded lap joints are produced by using either an automated welding machine or a hand-held welder, in accordance with the Certificate holder's instructions.
- The lap area must be dry and clean. If the product in the weld area has become contaminated, it must be cleaned in accordance with the Certificate holder's instructions.
- The welded width of the joint must be a minimum of 40 mm for field welds and detailing. Care must be taken to ensure overheating of the product does not occur, as possible impairment of the product may result.
- When hand welding, the joint must be rolled immediately using a silicone rubber seam-roller, to ensure an even bond.
- Flashings are to be formed in accordance with the Certificate holder's instructions.
- The seam is tested with a metal probe to highlight poorly welded areas. Any such areas must be made good using hot-air welding.

9.2.10 The NHBC requires that EshaPlan B and FB Single-ply PVC Roof Waterproofing Membranes, once installed, are inspected in accordance with *NHBC Standards 2024*, Chapter 7.1, Clause 7.1.11, including undergoing an appropriate

integrity test, where required. Any damage to the products must be repaired in accordance with section 9.4 of this Certificate and reinspected, in order to maintain product performance.

9.3 Workmanship

The practicability of installation was assessed by the BBA and on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, installation of the products must be carried out by installers trained and approved by the Certificate holder.

9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the products in use requires that they are 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 achieve the performance assessed in this Certificate:

9.4.2.1 The products must be the subject of six-monthly inspections and maintenance in accordance with the recommendations made in BS 6229 : 2018, Chapter 7, and the Certificate holder's own maintenance requirements, where relevant, to ensure continued satisfactory performance. These inspections must be carried out by a suitably experienced and competent individual to ensure continued satisfactory performance. This must include an examination of the condition of the roof finishes and a check to ensure that drain outlets and gutters are kept clear and unblocked.

9.4.2.2 Green roofs 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. Guidance is available within the latest edition of *The GRO Green Roof Code of Best Practice* (see section 9.1).

9.4.2.3 For green roofs, to protect the WFRL, insulation and roof waterproofing, invasive plant species (see clauses 9.1.10 and 9.1.11 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 and any system components above the waterproofing, such as insulation or WFRL. 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 must be checked for compatibility with the roof waterproofing layer and any system components above the waterproofing, such as insulation or WFRL. 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 Should a leak occur in the roof waterproof membrane, it must be repaired following removal of the gravel ballast, paving ballast, green roof or roof garden layer, WFRL and the insulation boards

9.4.2.7 In the event of damage, repairs must be carried out in accordance with the Certificate holder's instructions. Any damage is repaired by cleaning around the affected area and applying a patch of the appropriate product in accordance with the Certificate holder's instructions and section 9.2 of this Certificate.

10 **Manufacture**

10.1 The production processes for the products 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 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 products are delivered to site in rolls wrapped in polythene, on pallets bearing the manufacturer's name and address, product identification, dimensions, batch number and the BBA logo incorporating the number of this Certificate.

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

11.2.1 Rolls must be stored on their side, on a clean, level surface and under cover.

ANNEX A – SUPPLEMENTARY INFORMATION †

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 products 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 products in accordance with harmonised European Standard EN 13956 : 2012.

UKCA marking

The Certificate holder has taken the responsibility of UKCA marking the products in accordance with Designated Standard EN 13956 : 2012.

Additional information on installation

Design

A.1 Recommendations for the design of green roof specifications are available within the latest edition of The GRO *Green Roof Code — Green Roof Code of Best Practice for the UK*, issued by The Green Roof Organisation (GRO).

Installation

A.2 Additional guidance on installation is given in the Single Ply Roofing Association (SPRA) *Single Ply : Design Guide*.

Bibliography

BS 6229 : 2018 *Flat roofs with continuously supported flexible waterproof 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 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 + A1 : 15 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 12691 : 2006 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to impact*

BS EN 12730 : 2015 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to static loading*

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*

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

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

EN 13956 : 2012 *Flexible sheets for waterproofing — Plastic and rubber sheets for roof waterproofing — Definitions and characteristics*

MOAT 65 : 2001 UEAtc *Technical Guide for the Assessment of Non-Reinforced, Reinforced and/or Backed Roof Waterproofing Systems made of PVC*

Conditions of Certificate

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
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- is subject to English Law.

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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.

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- 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.

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