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Agrément Certificate
18/5518
Product Sheet 1 Issue 3

ROOF WATERPROOFING MEMBRANES

STRATA WATERPROOFING MEMBRANES

This Agrément Certificate Product Sheet(1) relates to Strata Waterproofing Membranes, a range of reinforced modified bitumen waterproofing membranes for use as fully bonded, ballasted, inverted, roof garden and green roof specifications, on pitched and flat 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: 21 May 2024
Originally certified on 19 April 2018

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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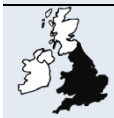
SUMMARY OF ASSESSMENT AND COMPLIANCE

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 Strata 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 products are 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 products may enable a roof to be unrestricted under 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 product 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 products satisfies this Regulation. See sections 8 and 9 of this Certificate.
Regulation:	**9**	**Building standards – construction**
Standard:	2.6	Spread to neighbouring buildings
Comment:		The products are restricted under clause 2.6.4$^{(1)(2)}$ of this Standard in some circumstances. See section 2 of this Certificate.
Standard:	2.8	Spread from neighbouring buildings
Comment:		When applied to a suitable substructure, the products may contribute to satisfying this Standard, with reference to clause 2.8.1$^{(1)(2)}$. See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The use of the products, including joints, will enable a roof to satisfy this Standard, with reference to clauses 3.10.1 and 3.10.7$^{(1)}$. 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 given for 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) (iii)(b)(i)**	**Fitness of materials and workmanship**
Comment:		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, can 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 a suitable substructure, the use of the products may enable a roof to be unrestricted under the requirements of this Regulation. See section 2 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, Strata 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*, 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 chapter 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 Strata Waterproofing Membranes to be satisfactory for use as reinforced modified bitumen roof waterproofing membranes as described in this Certificate. The products have been assessed for use as fully bonded, ballasted, inverted, roof garden or green roof specifications, on pitched and flat roofs with limited access.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the products under assessment. Strata Waterproofing Membranes consist of:

- StrataPro — a polymer-modified bitumen, torch-applied plain finish cap sheet with a thermofusible non-woven polypropylene finish, reinforced with 180 g·m^{-2} glass fibre/polyester composite backed with a thermofusible film
- StrataPro M — a polymer-modified bitumen, torch-applied mineral finish cap sheet, reinforced with 180 g·m^{-2} glass fibre/polyester composite backed with a thermofusible film
- StrataPro M SA — a polymer-modified bitumen, self-adhesive/heat-activated, mineral finish cap sheet, reinforced with 180 g·m^{-2} glass fibre/polyester composite with a removable liner over the adhesive compound on the underside
- StrataBase SBS — a polymer-modified bitumen, torch-applied plain finish underlay with thermofusible film, reinforced with 110 g·m^{-2} stabilised polyester composite backed with a thermofusible film
- StrataBase SA — a polymer-modified bitumen, self-adhesive plain finish underlay with thermofusible film, reinforced with 110 g·m^{-2} stabilised polyester composite with a removable liner over the adhesive compound on the underside
- StrataGreen — a polymer-modified bitumen, torch-applied plain finish membrane with an anti-root additive, reinforced with a 120 g·m^{-2} stabilised spunbond polyester inlay with a polyethylene backing film.

The products have the nominal characteristics given in Table 1.

Table 1 Nominal characteristics of Strata Waterproofing Membranes

Characteristic (unit)	StrataPro	StrataPro M	StrataPro M SA	StrataBase SBS	StrataBase SA	StrataGreen
Thickness (mm)	4.0	4.0	4.0	3.0	3.0	4.0
Roll width (m)	1.0	1.0	1.0	1.0	1.0	1.0
Roll length (m)	8.0	8.0	8.0	8.0	10.0	8.0
Mass per unit area (kg·m^{-2})	4.7	5.7	4.5	4.0	3.6	4.1
Upper surface finish	Polypropylene non-woven fleece	Mineral chippings	Mineral chippings	Film	Film	Film
Lower surface finish	Thermofusible polyethylene	Thermofusible polyethylene	Peel-off film covering self-adhesive bitumen	Thermofusible polyethylene	Peel-off film covering self-adhesive bitumen	Thermofusible polyethylene

Ancillary Items

The following ancillary items must be used with the products and have been assessed with the products:

- Evaprime SA R or Evaprime SA S (spray) — for use in preparing substrates, when required, prior to installation of either torch-applied or self-adhesive membranes.

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:

- air and vapour control layer (AVCL)
- insulation adhesive
- insulation boards
- roof drain outlets/scuppers — a range of overflow and outlets for rainwater drainage
- edge trims and termination details — for use at perimeters and upstands
- lightning conductor clips
- rooflights
- walkways
- edge protection system.

Applications

The products are intended for use in built-up specifications in fully bonded, ballasted, inverted roof, roof garden and green roof specifications as follows:

- StrataBase SA 3 mm self-adhesive underlay and StrataPro M torch-applied mineral cap sheet — for use in exposed systems on pitched or flat roofs with limited access
- StrataBase SA 3 mm self-adhesive underlay and StrataPro M SA self-adhesive mineral cap sheet — for use in exposed systems on pitched or flat roofs with limited access
- StrataBase SBS 3 mm torch-applied underlay and StrataPro M torch-applied mineral cap sheet — for use in exposed systems on pitched or flat roofs with limited access
- StrataBase SA 3 mm self-adhesive underlay and StrataPro 4 mm torch-applied sanded cap sheet — for use in inverted roofs and ballasted roofs on flat roofs with limited access
- StrataBase SA 3 mm self-adhesive underlay and StrataGreen 4 mm Root Barrier — for use in roof gardens on flat roofs with limited access, and green roof applications on pitched or flat roofs with limited access.

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
- 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 wild flower species.

Product assessment – key factors

The products was assessed for the following key factors, and the outcome of the assessment 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 CEN/TS 1187 : 2012, Test 4 and classified to EN 13501-5 : 2016, the products given in Table 2 of this Certificate achieved B_{ROOF}(t4) for slopes below 10°.

Table 2 Tested systems

Layer	System 1	System 2	System 3	System 4
Substrate	18 mm plywood deck primed with Evaprime SA S (spray)			
AVCL	2 mm thick, modified bitumen AVCL with aluminium/glass composite carrier, self-adhesively bonded(1)		—	—
Insulation	120 mm thick PIR board adhesively fixed with PU-based adhesive(1)	150 mm thick stone wool board fixed with PU-based adhesive(1)	—	—
Primer	Evaprime SA S (spray)	Evaprime SA S (spray)	—	—
Base sheet	Fully bonded layer of StrataBase SA 3 mm		Fully bonded layer of StrataBase SA 3 mm	
Cap sheet	Fully bonded layer of StrataPro M SA		Fully bonded layer of StrataPro M SA	
Insulation	—	—	150 mm thick XPS insulation board, loose-laid(1)	—
Water-flow-reducing layer	—	—	Loose-laid water flow reducing layer(1)	—
Protection	—	—	Layer of 25 mm concrete paving slabs on paving supports(1)	—

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

2.1.2 On the basis of data assessed, the systems listed in Table 2 will be unrestricted by the documents supporting the national Building Regulations with respect to proximity to a boundary. Restrictions may apply at junctions with compartment walls.

2.1.3 A roof incorporating the products will also be unrestricted under the national Building Regulations with respect to a relevant boundary in the following circumstances:

- protected or inverted roof 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 In Wales and Northern Ireland, when used on flat roofs using a substrate designated in the supporting documents with the surface finishes listed below, the roof is also deemed to be unrestricted with respect to a relevant boundary:

- bitumen-bedded stone chippings covering the whole surface to a depth of not less than 12.5 mm
- bitumen-bedded tiles of a non-combustible material
- sand and cement screed
- macadam.

2.1.5 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.

2.1.6 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 When tested to BS EN ISO 11925-2 : 2020 and classified to BS EN 13501-1 : 2018, the products had a reaction to fire classification of Class E.

2.2.2 On the basis of data assessed, systems incorporating Strata Waterproofing Membranes 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 and Northern Ireland, 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 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.

2.2.5 In Scotland when used in pitches greater than 70°, excluding upstands, the products must not be used on buildings less than 1 m from a relevant boundary, or 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 Weathertightness

Product assessed	Assessment method	Requirement	Result
StrataBase SA 3 mm	Watertightness BS EN 1928 : 2000	No leakage after 24 hours exposure to a 1 m head of water	Pass
StrataPro 4 mm			Pass
StrataPro M 4 mm			Pass
StrataBase SA 3 mm	Water vapour transmission to BS EN 1931 : 2000	Value achieved	s_d – 232 m
StrataPro 4 mm	Peel resistance of joints to BS EN 12316-1 : 2000	≥ 100 N	Pass
StrataPro M SA	Peel from substrate (concrete) to MOAT 64 : 2001	≥25 N·(50 mm)$^{-1}$	Pass
StrataPro 4 mm			Pass
StrataBase SA 3 mm with StrataPro M SA self-adhesive application on PIR insulation	Dynamic wind uplift to EOTA TR 005 : June 2003	Design value(1)	7.0 kPa
StrataBase SA 3 mm with StrataPro 4 mm torch-bonded on PIR insulation			7.5 kPa
StrataBase SA 3 mm with StrataPro M SA self-adhesive application on plywood			8.5 kPa
StrataBase SA 3 mm with StrataPro 4 mm torch-bonded on plywood			5.0 kPa

(1) The value for a specific building must be calculated by a suitably experienced and competent individual in accordance with the relevant parts of BS EN 1991-1-4 : 2005 and its UK National Annex.

3.1.2 On the basis of data assessed, Strata Waterproofing Membranes, including joints, when completely sealed and consolidated, will adequately resist the passage of moisture to the inside 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 bonded products 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 4.

Table 4 Mechanical damage results

Product assessed	Assessment method	Requirement	Result
StrataBase SA 3 mm	Dynamic indentation to BS EN 12691 : 2018 Method A (aluminium)	Value achieved	500 mm
	Dynamic indentation to BS EN 12691 : 2018 Method B (EPS)		1500 mm
StrataPro 4 mm	Dynamic indentation to BS EN 12691 : 2001 Method B (EPS)	I_{10} declared	Pass
StrataPro M 4 mm			Pass
StrataBase SA 3 mm	Static indentation to BS EN 12730 : 2015 Method A (EPS)	Value achieved	10 kg
	Static indentation to BS EN 12730 : 2015 Method B (concrete)		15 kg
StrataPro 4 mm	Static indentation to EN 12730 : 2001 Method A (EPS)	20 kg declared	Pass
StrataPro M 4 mm		20 kg declared	Pass
StrataPro 4 mm	Static indentation to EN 12730 : 2001 Method B (concrete)	25 kg declared	Pass
StrataPro M 4 mm		25 kg declared	Pass
StrataPro 4 mm	Tensile strength to EN 12311-1 : 2000 longitudinal direction	750 N·(50 mm)$^{-1}$ ± 20%	Pass
StrataPro M 4 mm		750 N·(50 mm)$^{-1}$ ± 20%	Pass
StrataPro 4 mm	Tensile strength to EN 12311-1 : 2000 transverse direction	650 N·(50 mm)$^{-1}$ ± 20%	Pass
StrataPro M 4 mm		650 N·(50 mm)$^{-1}$ ± 20%	Pass
StrataPro 4 mm	Elongation to EN 12311-1 : 2000 longitudinal direction	50% ± 15% absolute	Pass
StrataPro M 4 mm		50% ± 15% absolute	Pass
StrataPro 4 mm	Elongation to EN 12311-1 : 2000 transverse direction	50% ± 15% absolute	Pass
StrataPro M 4 mm		50% ± 15% absolute	Pass
StrataBase SBS 3 mm	Tear strength to EN 12310-1 : 2000 longitudinal direction	≥50 N	Pass
StrataBase SA 3 mm			Pass
StrataPro 4 mm			Pass
StrataPro M 4 mm			Pass
StrataBase SBS 3 mm	Tear strength to EN 12310-1 : 2000 transverse direction	≥50 N	Pass
StrataBase SA 3 mm			Pass
StrataPro 4 mm			Pass
StrataPro M 4 mm			Pass

3.2.2 On the basis of data assessed, Strata Waterproofing Membranes can accept, without damage, the foot traffic and light concentrated loads associated with installation and 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 3.2.1 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 Once the green roof or roof garden is installed, it can be regarded as a suitable protection for the membrane in use.

3.3 Resistance to root penetration

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

Table 5 Resistance to root penetration tests

Products assessed	Assessment method	Requirement	Result
StrataGreen 4 mm	EN 13948 : 2007	No root penetration after two years	Pass

3.3.2 On the basis of data assessed, StrataGreen 4 mm will resist penetration by plant roots and remain weathertight.

3.3.3 StrataGreen can be used as a layer in the waterproofing system in green roof and roof garden specifications, acting as the root protection layer.

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

Not applicable.

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 6.

Table 6 Results of durability tests

Products assessed	Assessment method	Requirement	Result
StrataPro 4 mm	Low temperature flexibility to		
- SBS lower face	EN 1109 : 1999 – control	-15°C	Pass
StrataPro M 4 mm			
- SBS lower face		-15°C	Pass
- APAO upper face		-5°C	Pass
StrataPro 4 mm	Heat aged for 168 days at 70°C		
- SBS lower face		-10°C	Pass
- APAO upper face		0°C	Pass
StrataPro M 4 mm			
- SBS lower face		-10°C	Pass
StrataPro 4 mm	Water soak for 7 days at 23°C		
- SBS lower face		-20°C	Pass
- APAO upper face		-10°C	Pass
StrataPro M 4 mm			
- SBS lower face		-20°C	Pass
StrataPro 4 mm	Heat resistance to EN 1110 : 2000	100°C (SBS)	Pass
StrataPro M 4 mm	– control	120°C (APP)	Pass
StrataPro 4 mm	Heat aged for 168 days at 70°C	90°C (SBS)	Pass
StrataPro M 4 mm		110°C (APP)	Pass
StrataPro M SA	Peel from substrate (concrete) to MOAT 64 : 2001 – heat aged for 28 days at 70°C	≥ 25 N·(50 mm)$^{-1}$	Pass
StrataBase SA 3 mm	Resistance to slipping to MOAT 64 : 2001	≤ 2 mm	
StrataPro 4 mm	– tested at 90°C		0.7 mm
	– tested at 80°C		< 2 mm
StrataBase SBS 3 mm	Dimensional stability to EN 1107-1 : 2000	±0.3%	Pass
StrataBase SA 3 mm	– longitudinal direction		Pass
StrataPro 4 mm			Pass
StrataPro M 4 mm			Pass
StrataBase SBS 3 mm	Dimensional stability to EN 1107-1 : 2000	±0.3%	Pass
StrataBase SA 3 mm	– longitudinal direction		Pass
StrataPro 4 mm			Pass
StrataPro M 4 mm			Pass

8.3 Visits to existing sites were carried out to assess the long term performance of the products in use. The conclusion of the visits was that the products retained sufficient physical characteristics to maintain their intended function.

8.4 Service life

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

8.4.2 Localised loss of the mineral surfacing may occur, after some years, in areas where complex detailing of the roof design is incorporated.

ROCESS 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, 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, BS 8217 : 2005 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 analysis of the roof is available, including overall and local deflection, direction of falls, etc.

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 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 drainage systems for inverted roofs, 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.

9.1.7 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 requirements for loose-laid specifications must be calculated by a suitably experienced and competent individual in accordance with the relevant parts of BS EN 1991-1-4 : 2005 and its UK National Annex. The products must always be ballasted with a minimum depth of 50 mm of aggregate (20 to 40 grade gravel). 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.

9.1.9 The ballast on protected roofs must be of a type that will not be removed or become delocalised owing to wind scour experienced on the roof.

9.1.10 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.

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

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

- as described in the relevant clauses of BS 6229 : 2018, or
- the subject of a current BBA Certificate and be 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.

9.2.2 Installation must be carried out in accordance with this Certificate, the Certificate holder's instructions and the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989 and BS 8217 : 2005. A summary of instructions and guidance is provided in Annex A of this Certificate.

9.2.3 If the roof is likely to be subjected to uncontrolled pedestrian access, the substructure must satisfy the requirements of the relevant clauses of BS 8217 : 2005, and one of the surface finishes described in clause 6.12 of the Code of Practice must be used.

9.2.4 Deck surfaces must be dry, clean and free from sharp projections such as nail heads and concrete nibs.

9.2.5 The products are laid in conditions normal to roofing work and must not be laid in rain, snow or heavy fog. If the temperature is below 5°C, suitable precautions must be taken against the formation of condensation on the substrate.

9.2.6 The substrate must be prepared using Primer 600 or 610 (spray) as specified, at 150 to 500 $g \cdot m^{-2}$ for Primer 600, and 75 to 200 $g \cdot m^{-2}$ for Primer 610, depending on the roughness and absorbency of the substrates, prior to the installation of the AVCL or underlay.

9.2.7 For warm roof specifications, the AVCL is rolled out onto the primed substrate, positioned and cut to length and applied to the substrate. The membrane must be completed at the edges at least 100 mm higher than the insulation boards.

9.2.8 The waterproofing layers must always be installed with staggered overlaps and in such a manner that no counter-seams in the direction of the outlets are made, where reasonably practical.

9.2.9 The underlay must be taken a sufficient distance up all upstands and protrusions to ensure a minimum 100 mm bond with secure lap with the AVCL, where used, and must be a minimum height of 150 mm above the finished roof surface.

9.2.10 The underlays are installed by torch-bonding for StrataBase SBS 3 mm onto non-combustible substrates only, and by self-adhesive application for StrataBase SA 3 mm.

9.2.11 At falls in excess of 5° (1:11), precautions against slippage, and requirements for mechanical fixing as required by BS 8217 : 2005, must be observed.

9.2.12 Bonding of StrataPro M 4 mm and StrataPro 4 mm is achieved by torch application ensuring a consistent pressure across the width of the roll by using a roll bar. Care must be taken not to overheat the membrane.

9.2.13 When using the self-adhesive version of StrataPro, the peel off film on the underside must be removed before laying the membrane.

9.2.14 End and side laps for the cap sheets must be a minimum of 150 and 75 mm wide respectively; care must be taken to ensure a continuous 5 to 10 mm extrusion of bitumen from the lap for both hot-air welded and torched joints.

9.2.15 For inverted roof, green roof or roof garden applications, StrataGreen 4 mm Root Barrier membrane is used, in accordance with the Certificate holder's instructions.

9.2.16 On completion of the roof, StrataPro 4 mm cap sheet must have a surface finish applied in accordance with BS 8217 : 2005, clause 8.19.

9.2.17 When using the mineral surface-finished membranes on roofs with limited access, further surface protection is not required.

9.2.18 The NHBC requires that Strata 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 assessed in this Certificate must be repaired in accordance with section 9.4 of this Certificate and reinspected, in order to maintain the products' performance.

9.3 Workmanship

Practicability of installation was assessed on the basis of the Certificate holder's information and BS 8217 : 2005. To achieve the performance described in this Certificate, the products must only be installed by contractors/installers who have been 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 satisfy 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 of BS 6229 : 2018, Chapter 7, and the Certificate holder's own maintenance requirements, where relevant, to ensure continued satisfactory performance.

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

9.4.2.3 In the event of damage, the cap sheet can be effectively repaired, after cleaning the surrounding areas, with a patch of the appropriate cap sheet over the damaged area in accordance with the Certificate holder's instructions.

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 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 packaging bearing the product name and production code. The rolls are packed on pallets and shrink-wrapped in polythene.

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 upright on a clean and level surface away from excessive heat and under cover.

11.2.2 Self-adhesive products must be stored out of direct sunlight.

ANNEX A – SUPPLEMENTARY INFORMATION †

Supporting information in this Annex is relevant to the products 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 the 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 13707 : 2013.

Additional information on installation

General

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

A.2 Soil or other bulk material should not be stored on one area of the roof prior to installation, to ensure that localised overloading does not occur.

Procedure

A.3 Detailing must be carried out in accordance with the Certificate holder's instructions and following the guidelines specified in the NFRC Safe2Torch Guidance Document.

Maintenance

A.4 Additional guidance on maintenance for green roofs and roof gardens is available in the latest edition of the *GRO Green Roof code – Green Roof Code of Best Practice for the UK*.

Bibliography

EN 1107-1 : 2000 *Flexible sheets for waterproofing — Determination of dimensional stability — Part 1 : Bitumen sheets for roof waterproofing*

EN 1109 : 1999 *Flexible sheets for waterproofing — Bitumen sheets for roof waterproofing — Determination of flexibility at low temperature*

EN 1110 : 2000 *Flexible sheets for waterproofing — Bitumen sheets for roof waterproofing — Determination of flow resistance at elevated temperature*

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

BS EN 1928 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of watertightness*

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 12316-1 : 2000 *Flexible sheets for waterproofing — Determination of peel resistance of joints — Part 1 : Bitumen sheets for roof waterproofing*

BS EN 12691 : 2001 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to impact*

BS EN 12691 : 2018 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to impact*

EN 12310-1 : 2000 *Flexible sheets for waterproofing — Determination of resistance to tearing (nail shank) — Part 1 : Bitumen sheets for roof waterproofing*

EN 12311-1 : 2000 *Flexible sheets for waterproofing — Determination of tensile properties — Part 1 : Bitumen sheets for roof waterproofing*

EN 12730 : 2001 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to static loading*
BS EN 12730 : 2015 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to static loading*

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

EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roof tests*

EN 13707 : 2013 *Flexible sheets for waterproofing — Reinforced bitumen sheets for roof waterproofing — Definitions and characteristics*

EN 13948 : 2007 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to root penetration*

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

EOTA TR 005 *Determination of the resistance to wind loads of partially bonded roof waterproofing membranes — June 2003*

MOAT 64 : 2001 *UEAtc Technical Guide for the Assessment of Roof Waterproofing Systems made of Reinforced APP or SBS Polymer Modified Bitumen Sheets*

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
- 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.

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