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Agrément Certificate

24/7262

Product Sheet 1 Issue 1

STRATAPLAN SINGLE-PLY ROOF WATERPROOFING MEMBRANES

STRATAPLAN SF SYSTEM

This Agrément Certificate Product Sheet⁽¹⁾ relates to the StrataPlan SF System, a range of reinforced polyvinyl chloride (PVC) membranes for use in mechanically fastened, loose-laid and ballasted, protected, inverted, roof garden/green roof and blue roof specifications on pitched, flat and protected zero fall roofs.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:

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

Process factors:

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

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review



KEY FACTORS ASSESSED

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

The BBA has awarded this Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of issue: 14 January 2025

Hardy Giesler
Chief Executive Officer

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

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

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

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

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

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SUMMARY OF ASSESSMENT AND COMPLIANCE

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

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that the StrataPlan SF System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	B4(1)	External fire spread
Comment:	The system is restricted by this Requirement in some circumstances. See section 2 of this Certificate.	
Requirement:	B4(2)	External fire spread
Comment:	On a suitable substructure, the system may enable a roof to be unrestricted by this Requirement. See section 2 of this Certificate.	
Requirement:	C2(b)	Resistance to moisture
Comment:	The system, including joints, will enable a roof to satisfy this Requirement. See section 3 of this Certificate.	
Regulation:	7(1)	Materials and workmanship
Comment:	The system is acceptable. See sections 8 and 9 of this Certificate.	



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:	The use of the system satisfies this Regulation. See sections 8 and 9 of this Certificate.	
Regulation:	9	Building standards – construction
Standard:	2.8	Spread from neighbouring buildings
Comment:	When applied to a suitable substructure, the system may enable a roof to be unrestricted by this Standard with reference to clause 2.8.1 ⁽¹⁾⁽²⁾ . See section 2 of this Certificate.	
Standard:	3.10	Precipitation
Comment:	The system, including joints, will enable a roof to satisfy this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.7 ⁽¹⁾⁽²⁾ . See section 3 of this Certificate.	
Standard:	7.1(a)	Statement of sustainability
Comment:	The system can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.	
Regulation:	12	Building standards – conversion
Comment:	Comments in relation to the system under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ .	
	(1) Technical Handbook (Domestic).	
	(2) Technical Handbook (Non-Domestic).	



The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	23(1)(a)(i)	Fitness of materials and workmanship
Comment:	(iii)(b)(i)	The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The system, including joints, will enable a roof to satisfy this Regulation. See section 3 of this Certificate.
Regulation:	36(a)	External fire spread
Comment:		The system is restricted by this Regulation in some circumstances. See section 2 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		On a suitable substructure, the system may enable a roof to be unrestricted by this Regulation. See section 2 of this Certificate.

Additional Information

NHBC Standards 2025

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

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

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

Fulfilment of Requirements

The BBA has judged the StrataPlan SF System to be satisfactory for use as a roof waterproofing system in mechanically fastened, loose-laid and ballasted, protected, inverted, roof garden/green roof and blue roof specifications on pitched, flat and zero fall roofs, as described in this Certificate.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the system under assessment. The StrataPlan SF System consists of polyester-mesh reinforced PVC single-ply roofing membranes with hot-air welded lap joints.

The membranes have the nominal characteristics given in Table 1.

Table 1 Nominal characteristics of the StrataPlan SF membranes

Characteristic (unit)	StrataPlan SF	
Thickness (mm)	1.2	1.5
Roll length (m)	20	20
Roll width (m)	1.025	1.025
Mass per unit area (kg·m ⁻²)	1.56	2
Colours	Dark grey, light grey and anthracite	

Ancillary Items

The following ancillary items are essential to use with the system and have been assessed with the system:

- StrataPlan PVC Liquid Sealant — used to seal site-cut edges of the StrataPlan SF membrane
- StrataPlan Oval Steel Washers — an 82 x 40 mm oval steel plate washer for side-lap fixed installation in conjunction with the appropriate fixings
- SF-T-50 Tube washer — a polypropylene tube washer to be used in conjunction with the appropriate fixings
- StrataPlan 150 gsm Separation Fleece — a 150 g·m⁻² non-woven geotextile fleece used as a separation layer
- StrataPlan 300 gsm Separation Fleece — a 300 g·m⁻² non-woven geotextile fleece used as a separation or protection layer.

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:

- StrataPlan Gutter System — a membrane coated gutter system
- StrataShield SA ALU VB — a self-adhesive aluminium-foil air and vapour control layer (AVCL)
- StrataPlan PVC Metal — a range of membrane coated galvanized steel profiles for parapets, edge details and upstands
- StrataPlan Slab Pedestals — for use with paving slabs in loose-laid applications
- StrataPlan PVC Internal and External Corners — for use as internal and external corners
- StrataPlan Walkway — a slip-resistant, textured walkway membrane in 650 mm widths
- FO Rainwater Outlets — a range of vertical and horizontal outlets compatible with StrataPlan SF membrane
- StrataPlan Protect — a 0.6 mm thick, unreinforced PVC membrane designed for use as a protective/sacrificial layer in Strata ballasted or sedum roof applications
- StrataPlan Standing Seam — triangular PVC profile designed to be applied to Strata membrane covered roofs to reproduce the appearance of a traditional metal roof
- StrataPlan Detail Membrane — an unreinforced membrane used around penetrations and details where movement of the structure is likely
- StrataPlan Lightning Clip — a specialist lightning conductor clip
- StrataPlan IFP250 — a fixing point for providing a structural connection to the building substrate
- StrataPlan Coverstrip Reinforced — a reinforced strip of membrane for concealing joints in laminated materials, edge detailing, and seamless membrane joints
- StrataPlan Coverstrip Unreinforced — an unreinforced strip of membrane for concealing joints in laminated materials, edge detailing, and seamless membrane joints
- StrataPlan Contact Adhesive — an adhesive for bonding between substrates and un-backed PVC membrane.

Applications

The system is satisfactory for use as for use as a mechanically fixed roof waterproofing system in the following specifications:

- exposed pitched or flat roofs with limited access
- protected zero fall roofs
- blue roofs⁽¹⁾
- protected roofs
- inverted roofs
- green roofs on pitched or flat roofs with limited access
- roof gardens on flat roofs.

(1) The use of a storm attenuation system is outside the scope of this Certificate.

Additionally, the system may also be used in loose-laid roof waterproofing in the following specifications:

- ballasted roofs
- inverted roofs
- green roofs on pitched or flat roofs with limited access
- roof gardens on flat roofs.

Definitions for products and applications inspected

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

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

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

Product assessment – key factors

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

1 Mechanical resistance and stability

Not applicable.

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 External fire spread

2.1.1 When tested to CEN/TS 1187 : 2012, Test 4 and classified to BS EN 13501-5 : 2016, a representative related system achieved $B_{ROOF}(t_4)$ for slopes below 10°.

2.1.2 On the basis of data assessed, the construction referenced in section 2.2.1 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 be similarly unrestricted with respect to proximity to a relevant boundary under the national Building Regulations when used in the following circumstances:

- protected or inverted roof specifications, including inorganic covering (eg gravel or paving slabs) listed in the Annex of Commission Decision 2000/553/EC
- a roof garden covered with a drainage layer of gravel 100 mm thick and a soil layer 300 mm thick
- irrigated roof gardens, 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, plants used may allow the spread of flame across the roof. This must be taken into consideration when selecting suitable plants for the roof. Appropriate planting, irrigation and/or protection must be applied to ensure the overall fire-rating of the roof is not compromised.

2.2 Reaction to fire

2.2.1 The Certificate holder has declared a reaction to fire classification of Class E to ČSN EN 13501-1 : 2019 for the system.

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

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

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

2.2.5 In Scotland, the use of the system is unrestricted with respect to building height and proximity to a relevant boundary. However, restrictions on the overall construction may apply, depending on the reaction to fire classification achieved by the build-up, 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 2.

Table 2 Weathertightness			
Product assessed	Assessment method	Requirement	Result
Representative Related System	Water vapour transmission rate to BS 3177 : 1959 (25°C/75% RH)	Value achieved	1.20 g·m ⁻² ·day ⁻¹
StrataPlan SF	Watertightness under 400 kPa pressure for 72 hours to ČSN EN 1928 : 2000	No leakage	Pass
Representative Related System	Resistance to leakage at joints MOAT 27 : 5.2.1 : 1983	No leakage	Pass
StrataPlan SF	Resistance to peel of joints to ČSN EN 12316-2 : 2013	Break outside of the joint or ≥ tensile strength of the sheet	Pass
	End joint		Pass
	Side joint		Pass
StrataPlan SF	Shear resistance of joints to ČSN EN 12317-2 : 2010	Break outside of the joint or ≥ tensile strength of the sheet	Pass
	End joint		Pass
	Side joint		Pass

Table 2 Weathertightness

- Steel liner sheet deck⁽¹⁾, fixed with carbon steel 5.5x3.5 screws⁽¹⁾ - 120 mm Inno-Fix PIR Insulation⁽¹⁾, fixed with 75 x 100 mm Tube Washers⁽¹⁾ and 5.8 x 65 mm fixings⁽¹⁾ - Representative Related Membrane, fixed with StrataPlan Oval Steel Washers 82 mm x 40 mm and 5.8 x 150 mm fixings⁽¹⁾ (200 mm apart) - Side laps hot air welded - Internal Angle⁽¹⁾ (50 mm x 50 mm) fixed with 5.8 x 150 mm fixings⁽¹⁾, with 5.2 x 25 mm fixings⁽¹⁾ into the upstand	Dynamic wind uplift to ETAG 006 : 2000	Design value ⁽²⁾	Permissible load 390 N per fixing
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(1) This component is outside the scope of this Certificate.

(2) The value for a specific building 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.

3.1.2 On the basis of data assessed, the system, including joints, when completely sealed and consolidated, will adequately resist the passage of moisture to the interior of a building and enable a roof to comply with the requirements of the national Building Regulations.

3.1.3 The mechanically fastened system will resist the effects of wind suction likely to occur in practice and remain weathertight.

3.1.4 The resistance to wind uplift of a mechanically fastened waterproofing layer is provided by the fasteners passing through the membranes into the substrate. The number and position of fixings will depend on a number of factors including:

- wind uplift forces to be restrained
- pull-out strength of the fasteners
- tensile properties of the membranes
- appropriate calculation of safety factors.

3.1.5 The wind uplift forces must be calculated by a suitably competent and experienced individual in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex. On this basis, the number of fixings required must be established using a maximum permissible load of 0.39 kN per fixing for side-lap fixed installation.

3.2 Resistance to mechanical damage

3.2.1 Results of resistance to mechanical damage tests are given in Table 3.

Table 3 Resistance to mechanical damage

Product assessed	Assessment method	Requirement	Result
StrataPlan SF	Tensile strength to ČSN EN 12311-2 : 2000	$\geq 800 \text{ N} \cdot (50 \text{ mm})^{-1}$	
	Longitudinal direction		Pass
	Transverse direction		Pass
StrataPlan SF	Elongation properties to ČSN EN 12311-2 : 2000	$\geq 15\%$	
	Longitudinal direction		Pass
	Transverse direction		Pass
StrataPlan SF	Resistance to tearing (nail shank) to ČSN EN 12310-1 : 2000	$\geq 150 \text{ N}$	
	Longitudinal direction		Pass
	Transverse direction		Pass
StrataPlan SF	Resistance to static loading to ČSN EN 12730 : 2001	Value achieved	20 kg
StrataPlan SF	Resistance to dynamic impact to ČSN EN 12691 : 2001	Value achieved	1000 mm
- on aluminium substrate			2000 mm
- on EPS substrate			
StrataPlan SF	Low temperature flexibility to ČSN EN 495-5 : 2001	$\leq -20^{\circ}\text{C}$	Pass

3.2.2 On the basis of data assessed, the system can accept, without damage, the limited foot traffic and light concentrated loads associated with installation and maintenance. Reasonable care must be taken to avoid puncture by sharp objects or concentrated loads.

3.2.3 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 or a protective walkway with a textured finish. The advice of the Certificate holder must be sought on the most appropriate method to be used but such advice and products are outside the scope of this Certificate.

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

3.3 Resistance to root penetration

3.3.1 Results of a resistance to root penetration test is given in Table 4.

Table 4 Resistance to root penetration

Product assessed	Assessment method	Requirement	Result
StrataPlan SF – 1.2 mm	Resistance to root penetration to FLL Method	No root penetration after 2 years	Pass

3.3.2 On the basis of data assessed, the system will adequately resist penetration by plant roots and can be used as a waterproofing system in green roof and roof garden specifications.

3.3.3 For green roofs in inverted roof specifications, when installed in accordance with this Certificate, the inverted roof insulation and water-flow-reducing layer (WFRL) 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*.

3.3.4 For roof gardens in inverted roof specifications, when installed in accordance with this Certificate, the inverted roof insulation and water-flow-reducing layer (WFRL) must be protected from damage from invasive plant roots, for example, by using root resistant planter boxed or tree pits lined with an effective root barrier.

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 system comprises PVC which can be recycled.

8 Durability

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

8.2 The dimensional stability, tensile properties after heat ageing and long-term water exposure, and resistance to peel and shear of joints after long term water exposure of the system were assessed using test data from a representative related system.

8.3 Visits to existing sites were carried out to assess performance in use.

8.4 Service life

Under normal service conditions, the system will have a life in excess of 30 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 meet 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* 2025, Chapter 7.1.

9.1.3 For design purposes or 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, direction of falls, etc.

9.1.4 For loose-laid and ballasted, green roofs and roof gardens, structural decks to which the system is to be applied must be suitable to transmit the dead and imposed loads experienced in service. Allowance must be made for loading deflections to ensure that the free drainage of water is maintained.

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

9.1.6 Imposed loads, dead loading and wind loads for green roof and roof garden specifications 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 Any ballast used in roofing specifications and growing medium used in green roofs and roof gardens must not be of a type that will be removed or become delocalised due 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 and roof gardens, invasive non-native alien plant species as defined by UK Government guidance must not be used.

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

- 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 of the scope of this Certificate.

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

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

9.1.13 Contact with bituminous, coal tar and oil-based products must be avoided as the membranes 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 and products are outside the scope of the Certificate.

9.1.14 Insulation materials used in conjunction with the system must be in accordance with the manufacturer'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 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 of the system must be carried out in accordance with the relevant clauses of the Certificate holder's instructions, BS 8000-0 : 2014, BS 8000-4 : 1989 and this Certificate.

9.2.3 In all cases, an AVCL must be used directly over the deck.

9.2.4 The membranes must not be mechanically fixed over foam-glass insulation. Restrictions do not apply when mechanically fixing over mineral fibre board insulation.

9.2.5 Conditions on site must be those for normal roof waterproofing work. Deck surfaces must be 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.

9.2.6 Installation must not be carried out during wet weather (eg rain, fog or snow) nor when the temperature is below 0°C, unless suitable precautions against surface condensation are taken in accordance with the Certificate holder's instructions.

- 9.2.7 Soil or other bulk material must not be stored on one area of the roof prior to the installation, to ensure localised overloading does not occur.
- 9.2.8. When installing mechanically fastened specifications, an AVCL is installed on to a dry, clean deck and turned up over the insulation at perimeters ensuring 100 mm end and side laps.
- 9.2.9 Insulation boards are laid in staggered end joints and fixed in accordance with the Certificate holder's instructions.
- 9.2.10 For a side lap fixed installation, each sheet of StrataPlan SF must overlap the adjacent sheet by 120 mm. The fixings must be spaced at 150 mm centres, or in accordance with the Certificate holder's site-specific wind load calculations. The edge of the washer must be 10 mm away from the edge of the membrane.
- 9.2.11 For fastening the membrane, StrataPlan Oval Steel Washers or SF-T-50 Tube Washers are used with the appropriate fastener. When using tube washers, a suitable tool must be used to puncture the membrane.
- 9.2.12 Once the membrane has been fixed, the next section is rolled over the secured sheet and lined-up to achieve a 120 mm overlap over the fixings. The membrane laps are then hot air welded to create a homogenous watertight seal.
- 9.2.13 StrataPlan Walkway can be installed over the finished membrane by hot-air welding along its length to provide a slip-resistant walkway.
- 9.2.14 For the installation of loose-laid and ballasted specifications, when using the membrane over a rough substrate, a layer of StrataPlan 300 gsm Separation Fleece is loose-laid over the deck prior to installation of the membrane.
- 9.2.15 The membrane must be unrolled over the substrate on top of any protective or isolating layer, taking care not to stretch the material and ensuring adequate overlaps for jointing.
- 9.2.16 A suitable protection layer must be laid over the membrane prior to application of the insulation or ballast.
- 9.2.17 Loose-laid applications must be covered by at least a 50 mm depth of well-rounded gravel. In areas of high wind exposure, paving slabs set on a suitable support may be considered.
- 9.2.18 When using a loose-laid application, normal account must be taken in the design of the deck of the extra dead loading due to the weight of the aggregate and/or paving.
- 9.2.19 In green roof and roof garden specifications, subsequent layers such as separation layers, drainage layers and growing medium are installed in accordance with the Certificate holder's instructions. Guidance is also available within The GRO Green Roof Code — *Green Roof Code of Best Practice for the UK*.
- 9.2.20 When forming joints, to ensure a watertight bond, lap joints in the membrane must be a minimum of 50 mm wide at sheet ends and details. Edge overlaps with adjacent sheets must be a minimum of 50 mm, welded over the last 40 mm as described in sections 9.2.21 and 9.2.22.
- 9.2.21 When hot air welding a lap joint, a minimum of 40 mm of the lap width must be welded. The rear of the lap must be pre-welded using a heat gun and the seam closed with a silicone roller, crossing over the lap in a diagonal motion.
- 9.2.22 After the pre-weld, the gun nozzle is placed under the overlap, leaving 5 mm projecting. The joint is continually rolled back and forth diagonally across the edge of the lap and down the full length of the seam to produce the final seal.
- 9.2.23 After the welded seams have cooled, the seams must be visually checked for a thin dark line of extrusion from under the membrane and mechanically tested by running a steel hand probe along the joint by applying pressure to the seam at all times. If any weak welds are found, the membrane must be peeled back to fully open and re-welded with a hand gun.

9.2.24 The NHBC requires that the system, once installed, is inspected in accordance with *NHBC Standards 2025*, Chapter 7, Clause 7.1.11, including undergoing an appropriate integrity test where required. Any damage to the systems assessed in this Certificate must be repaired in accordance with section 9.4 of this Certificate and reinspected, in order to maintain system performance.

9.3 Workmanship

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

9.4 Maintenance and repair

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

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

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 is cleared from the roof and drainage outlets. Guidance is available within the latest edition of *The GRO Green Roof Code of Best Practice*.

9.4.4 For green roofs, to protect the roof waterproofing and any system components above the waterproofing, such as insulation or water flow reducing layer, invasive plant species (see sections 9.1.10 and 9.1.11) must be eliminated through maintenance.

9.4.5 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 water flow reducing layer. The Certificate holder can advise on the suitability of a particular product, but such advice is outside of 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.

9.4.6 The chemical fertiliser used on green roofs and roof gardens must be checked for compatibility with the roof waterproofing layer and any system components above the waterproofing, such as insulation or water flow reducing 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 If a leak occurs in the roof waterproofing membrane, it must be repaired following removal of the gravel ballast, paving ballast, green roof or roof garden layer, water-flow-reducing layer and the insulation boards.

9.4.8 Where damage has occurred it must be repaired in accordance with this Certificate and the Certificate holder's instructions.

9.4.9 In the event of damage, repairs can be carried out by cleaning around the damaged area and hot air welding a new patch of membrane. The patch must have rounded corners and be larger than the damaged area by at least 50 mm in each direction.

10 **Manufacture**

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

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

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

10.1.3 The quality control procedures and 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 the 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 will review the above activities on a regular basis, through a surveillance process, to verify and re-assure 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 membranes are delivered to site in rolls wrapped in paper, bearing the Certificate holder's name, batch number, product name, surface colour 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 Rolls must be stored horizontally on a clean, dry, level surface and under cover until required.

ANNEX A – SUPPLEMENTARY INFORMATION †

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

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

CLP Regulation

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).

Additional information on installation

Design

A.1 Guidance for the design and construction of blue roofs is available in the *NFRC Technical Guidance Note for the construction and design of Blue Roof – Roofs and podiums with controlled temporary water attenuation*.

A.2 For design purposes of zero falls roofs, reference must be made to appropriate clauses in the Liquid Roofing and Waterproofing Association (LRWA) Note 7 – *Specifier Guidance for Flat Roof Falls*.

A.3 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*.

A.4 Additional guidance for inverted roof specifications is given in BBA Information Bulletin No 4 *Inverted roofs – Drainage and U value corrections*

Installation

A.5 The membranes may be applied over foil-faced insulation materials and fixed to the sub-structure in such a way as not to impair the performance of the waterproofing. Polystyrene-based insulation products may also be used in conjunction with a suitable isolation layer to separate the insulation from the roof covering, to reduce the risk of plasticiser migration.

Maintenance

A.6 Additional guidance on maintenance for green roofs 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 8000-0 : 2014 + A1: 2024 *Workmanship on construction sites — Introduction and general principles*
- BS 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*
- BS EN 1991-1-1 : 2002 *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
- NA to BS EN 1991-1-1 : 2002 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
- BS EN 1991-1-3 : 2003 + A1 : 2015 *Eurocode 1 — Actions on structures — General actions — Snow loads*
- NA + A2 : 18 to BS EN 1991-1-3 : 2003 + A1 : 2015 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Snow loads*
- BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 — Actions on structures — General actions — Wind actions*
- NA to BS EN 1991-1-4 : 2005 + A1 : 2010 UK National Annex to *Eurocode 1 : Actions on structures — General actions — Wind actions*
- BS EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roof tests*
- CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*
- ČSN EN 495-5 : 2001 *Flexible sheets for waterproofing — Determination of foldability at low temperature — Plastic and rubber sheets for roof waterproofing*
- ČSN EN 1928 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of watertightness*
- ČSN EN 12310-1 : 2000 *Flexible sheets for waterproofing — Determination of resistance to tearing (nail shank) — Bitumen sheets for roof waterproofing*
- ČSN EN 12311-2 : 2000 *Flexible sheets for waterproofing — Determination of tensile properties — Plastic and rubber sheets for roof waterproofing*
- ČSN EN 12316-2 : 2013 *Flexible sheets for waterproofing — Determination of peel resistance of joints — Plastic and rubber sheets for roof waterproofing*
- ČSN EN 12317-2 : 2010 *Flexible sheets for waterproofing — Determination of shear resistance of joints — Plastic and rubber sheets for roof waterproofing*
- ČSN EN 12691 : 2001 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to impact*
- ČSN EN 12730 : 2001 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to static loading*
- ČSN EN 13501-1 : 2019 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*
- ETAG 006 : 2000 *Systems of Mechanically Fastened Flexible Roof Waterproofing Membranes*

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
- 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
- and any matter arising out of or in connection with it or its subject matter (including non-contractual disputes or claims) is governed by and construed in accordance with the law of England and Wales.
- the courts of England and Wales shall have exclusive jurisdiction to settle any matter arising out of or in connection with this Certificate or its subject matter (including non-contractual disputes or claims).

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.