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Agrément Certificate

09/4668

Product Sheet 3 Issue 7

SIKA WATERPROOFING MEMBRANES

SIKAPLAN SGMA LOOSE-LAID AND BALLASTED MEMBRANE

This Agrément Certificate Product Sheet⁽¹⁾ relates to Sikaplan SGmA Loose-laid and Ballasted Membrane, a glass-reinforced PVC membrane for use as a waterproofing layer on flat parapet roofs with limited access in protected, inverted roof garden and green roof specifications.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:

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

Process factors:

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

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review



KEY FACTORS ASSESSED

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

The BBA has awarded this Certificate to the company named above for the product described herein. This product 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 Seventh issue: 27 November 2023
Originally certificated on 3 June 2009

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 Sikaplan SGmA Loose-laid and Ballasted Membrane, 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(2)	External fire spread
Comment:	On suitable substructures, the use of the product may enable a roof to be unrestricted by this Requirement. See section 2 of this Certificate.	
Requirement:	C2(b)	Resistance to moisture
Comment:	The product, 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 product satisfies the requirements of this Regulation. See sections 8 and 9 of this Certificate.	
Regulation:	9	Building standards - construction
Standard:	2.8	Spread from neighbouring buildings
Comment:	The product, when used with a suitable surface protection, may enable a roof to be unrestricted by clause 2.8.1 ⁽¹⁾⁽²⁾ of this Standard. See section 2 of this Certificate.	
Standard:	3.10	Precipitation
Comment:	The product, including joints, will enable a roof to satisfy the requirements of this Standard with references 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 product can contribute to meeting 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 - conversions
Comment:	Comments in relation to the product 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 product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The product, including joints, will enable a roof to satisfy the requirements of this Regulation. See section 3 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		On suitable substructures, the use of the product may enable a roof to be unrestricted under the requirements of this Regulation. See section 2 of this Certificate.

Additional Information

NHBC Standards 2023

In the opinion of the BBA, Sikaplan SGmA Loose-laid and Ballasted Membrane, 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 product, 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 product.

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

Fulfilment of Requirements

The BBA has judged Sikaplan SGmA Loose-laid and Ballasted Membrane to be satisfactory for use as described in this Certificate. The product has been assessed for use as a waterproofing layer on flat parapet roofs with limited access in protected, inverted roof garden and green roof specifications.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. Sikaplan SGmA Loose-laid and Ballasted Membrane is a glass fibre restraint matrix-reinforced PVC membrane, available in two thicknesses.

The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics of Sikaplan SGmA Loose-laid and Ballasted Membrane

Characteristic (unit)	Value	
Thickness (mm)	1.5	2.0
Mass per unit area (kg·m ⁻²)	1.9	2.5
Roll length (m)	20	15
Roll width (m)	2.0	2.0
Colour		
upper	beige	beige
lower	beige	beige

Ancillary Items

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

- Sikaplan Metal Sheets — 0.6 mm thick galvanized steel sheet, the upper side coated with a 0.8 mm thick layer of plasticised PVC, coloured light grey and lead grey, used to produce profiles for perimeter flashings, connections and fixings
- Sikaplan Polyester Fleece (S-Felt T) — a needle-punched non-woven layer ($300 \text{ g}\cdot\text{m}^{-2}$) for use as a protective and separating layer
- Sikaplan Polypropylene Fleece (S-Felt A) — $300 \text{ g}\cdot\text{m}^{-2}$, for use as a protective and separating layer
- Sikaplan SBV — a PVC-skinned polyester fleece for use as a heavy-duty protective sheet between the membrane and ballast
- Sikaplan WBP — a 2.0 mm thick layer of embossed plasticised PVC, to define the walkway routes, available in lead grey and brick red
- Sikatherm — a range of thermal insulation
- S Vap 5000E SA — a self-adhesive bituminous AVCL
- Sikashield VB E71 PE SA — a self-adhesive bituminous AVCL
- Sikaplan Corner Pieces — SGmA membrane moulded into corner pieces.

Definitions for products and applications inspected

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

- Limited access roofs — roofs subjected only to pedestrian traffic for the maintenance of the roof covering, cleaning of gutters, etc
- pedestrian access roofs — roofs that are suitable for foot traffic only
- roof gardens — roofs with a substantial layer of growing medium with planting that can include shrubs and trees, generally accessible to pedestrians
- green roofs — roofs with a shallow layer of growing medium planted with low-maintenance plants such as mosses, sedums, grasses and some wild flower species
- flat roofs — roofs having a minimum finished fall of $1:80^{(1)}$
- pitched roofs — roofs having falls in excess of $1:6$.

(1) *NHBC Standards 2023* require a minimum fall of $1:60$ for green roofs and roof gardens.

Product assessment – key factors

The product 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 BS 476-3 : 2004, the system given in Table 2 of this Certificate achieved a classification of EXT.F.AA.

Table 2 System given EXT.F.AA classification

Layer	System ⁽¹⁾
Plane of test	flat
Substrate	18 mm thick plywood ⁽²⁾
AVCL	Sikaplan S Vap 500E Vapour Check ⁽²⁾
Insulation	100 mm thick foil faced polyisocyanurate (PIR) foam insulation ⁽²⁾
Membrane	loose-laid 1.5 mm thick Sikaplan SGmA
Protection sheet	Sikaplan SBV ⁽²⁾
Support	175 mm diameter, 15 mm high, high-density polyethylene (HDPE) paving support pads ⁽²⁾
Ballast layer	40 mm thick paving slabs with a 20/40 gravel surround ⁽²⁾
Edge upstand	Sikaplan Metal Sheets ⁽²⁾

(1) Fire test report reference 276371, conducted by BRE Global. Copies are available from the Certificate holder on request.

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

2.1.2 On the basis of the 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 boundary. Restrictions may apply at junctions with compartment walls.

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

- when used in protected specifications including an inorganic covering listed in the Annex of Commission Decision 2000/553/EC
- a roof garden covered with a drainage layer of gravel 100 mm thick and a soil layer 300 mm thick
- irrigated roof gardens and green roofs.

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

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
Sikaplan SGmA 1.5 mm	Resistance to six metre head of water to MOAT 27 : 5.1.4 1983	No leakage after 24 hr	Pass
Sikaplan SGmA 1.5 mm	Peel resistance of weld joint to MOAT 29 : 4.17.2 1984 ⁽¹⁾	$\geq 150 \text{ N} \cdot (50 \text{ mm})^{-1}$	Pass
Sikaplan SGmA 1.5 mm	Tensile strength of joint to MOAT 27 : 5.2.2 1983 ⁽¹⁾	Break outside joint area or equal to tensile strength of membrane	Pass
Sikaplan SGmA 1.2 mm	Air pressure of joints to MOAT 27 : 5.2.1 1983 ⁽¹⁾	No leakage at 10 kPa	Pass

(1) Test carried out before the publication of harmonised European Standard EN 13956 : 2012.

3.1.2 On the basis of data assessed, Sikaplan SGmA Loose-laid and Ballasted Membrane, 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 The product can be designed and installed in such a manner as to sufficiently resist the effects of wind suction likely to be experienced in the UK.

3.2 Resistance to mechanical damage

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

<i>Table 4 Mechanical damage results</i>			
Product assessed	Assessment method	Requirement	Result
Sikaplan SGmA 1.5 mm	Dynamic indentation to MOAT 27 : 5.1.10 1983 ⁽¹⁾	Value achieved	
	Concrete		I ₃
	Expanded polystyrene (EPS) insulation board		I ₃
Sikaplan SGmA 1.5 mm	Tensile strength to MOAT 29 : 4.8 1984 ⁽¹⁾	Value achieved	
	Longitudinal direction		13.2 N·mm ⁻²
	Transverse direction		11.6 N·mm ⁻²
Sikaplan SGmA 1.5 mm	Elongation to MOAT 29 : 4.8 1984 ⁽¹⁾	Value achieved	
	Longitudinal direction		340%
	Transverse direction		300%

(1) Test carried out before the publication of harmonised European Standard EN 13956 : 2012.

3.2.2 Static indentation and tear strength were assessed using test data from a representative related product.

3.2.3 On the basis of data assessed, Sikaplan SGmA Loose-laid and Ballasted Membrane can accept 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.

3.2.4 Where regular traffic is envisaged, such as for maintenance of lift equipment, a walkway must be provided using concrete slabs supported on bearing pads or an anti-slip walkway with or without a protection sheet.

3.2.5 Systems incorporating the product are capable of accepting minor structural movement while remaining weathertight.

3.3 Resistance to root penetration

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

<i>Table 5 Resistance to root penetration tests</i>			
Product assessed	Assessment method	Requirement	Result
Sikaplan SGmA	Resistance to root penetration to FLL method 1984 ⁽¹⁾	No root penetration after two years	Pass

(1) Test carried out before the publication of harmonised European Standard EN 13956 : 2012.

3.3.2 On the basis of data assessed, Sikaplan SGmA Loose-laid and Ballasted Membrane will adequately resist penetration by plant roots.

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 product contains PVC and glass, which can be recycled.

8 Durability

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

8.2 Specific test data were assessed as given in Table 6.

Table 6 Results of durability tests

Product assessed	Assessment method	Requirement	Result
Sikaplan SGmA 1.5 mm	Low temperature flexibility to MOAT 27 : 1983 ⁽¹⁾	Value achieved	-30°C
Sikaplan SGmA 1.5 mm	Tensile strength of joint to MOAT 27 : 1983 ⁽¹⁾ Heat aged 28 days at 80°C Water soak for 7 days at 60°C	No significant loss of properties after ageing	Pass Pass

(1) Test carried out before the publication of harmonised Standard EN 13956 : 2012.

8.3 Tensile strength and elongation following heat ageing for 180 days at 80°C were assessed using test data from a representative related product.

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

8.5 Service life

Under normal service conditions, the product will have a service life in excess of 35 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 satisfy the performance assessed in this Certificate.

9.1.2 Decks to which the product is to be applied must comply with the relevant requirements of BS 6229 : 2018, where appropriate, *NHBC Standards* 2023, Chapter 7.1.

9.1.3 For design purposes, 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 The product must not be laid directly onto certain materials, eg reinforced bituminous membranes, polystyrene insulation boards or timber substrates which have been impregnated with oil-based preservatives. If contact with such products is likely, a separating layer must be used. Where doubt arises, the advice of the Certificate holder must be sought, but such advice is outside the scope of this Certificate.

9.1.5 For pedestrian access areas, the trafficked layer consists of dense or precast interlocking pavers bedded onto sand, dry mix or other suitable protection. Special precautions must be taken to protect the membrane.

9.1.6 Deck surfaces must be clean, dry and free from sharp projections such as nail heads and concrete nibs. Sikaplan Polyester Fleece (S-Felt A) must be used as a separating layer.

9.1.7 The requirement of an AVCL must be established in accordance with BS 6229 : 2018 and the Certificate holder's instructions.

9.1.8 Structural decks to which the product 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.

9.1.9 Imposed loads, dead loading and wind load 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.

9.1.10 The ballast requirements must be calculated by a suitably experienced and competent individual in accordance with the relevant parts of BS EN 1991-1-1 : 2002 and BS EN 1991-1-4 : 2005, but must not be below the minimum thickness of 50 mm. In areas of high wind exposure, the use of the concrete pavers must be considered.

9.1.11 The product may be applied over insulation boards, provided the insulation material has been fixed to the substructure by methods that will not impair the performance of the membranes. The boards must be firm, of uniform density and, where appropriate, capable of spanning the deck flute space under foot traffic.

9.1.12 Insulation systems or materials used in conjunction with the product must be approved by the Certificate holder and either:

- 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 limitations of, that Certificate.

9.1.13 The drainage system 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 roof and roof gardens 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*.

9.1.14 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.

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

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

9.1.17 The growing media used in roof gardens and ballast on inverted/protected roofs must not be of a type that will be removed or become de-localised owing to wind scour experienced on the roof.

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

9.1.19 Parapet edges must be a minimum of 150 mm above the proposed ballast level to reduce the risk of ballast movement.

9.1.20 Soil 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 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 The installation of Sikaplan SGmA Loose-laid and Ballasted Membrane must be carried out by contractors trained and approved by the Certificate holder, in accordance with the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989, BS 8217 : 2005, the 2020 SPRA *Single Ply Design Guide* (S1/2020) and this Certificate.

9.2.3 The product may be laid in conditions normal to roofing work and must not be laid in wet or damp weather, or at temperatures below 5°C, unless suitable precautions are taken.

9.2.4 The NHBC requires that the waterproofing membranes, once installed, are inspected in accordance with *NHBC Standards* 2023, Chapter 7.1, Clause 7.1.11, and undergo an appropriate integrity test, where required. Any damage to the product assessed in this Certificate must be repaired in accordance with section 9.4 of this Certificate and reinspected, in order to maintain product performance.

9.2.5 The membrane is unrolled over the substrate and on top of any separating layers, taking care not to stretch it. Edge and end laps must be a minimum of 50 mm.

9.3 Workmanship

Practicability of installation was assessed by the BBA on the basis of the Certificate holder's information and a site visit to witness an installation in progress. To achieve the performance described in this Certificate, installation of the product 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 product in use requires that it is suitably maintained. The guidance provided by the Certificate holder was assessed by the BBA and found to be appropriate and adequate.

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

9.4.2.1 The product must be the subject of six-monthly inspections and maintenance in accordance with the recommendations made in BS 6229 : 2018, Chapter 7 and Certificate holder's 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).

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

- invasive weeds including Buddleia
- plants and grasses with aggressive rhizomes such as Bamboo
- self-setting woody weeds such as Sycamore and Ash seedlings must be removed at early germination stage
- other woody plants which spread aggressively including Rhododendron.

9.4.4 The Green Roof Organisation (GRO) can provide guidance on species not included in section 9.4.3, but such advice is outside the scope of this Certificate.

9.4.5 In the event of damage, repairs must be carried out in accordance with the Certificate holder's instructions. Repairs are made by applying a patch of the product extending at least 50 mm beyond the defect. The damaged area must be cleaned back to the unweathered material and the patch hot-air or solvent welded to the waterproofing membrane.

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 product is delivered to site in rolls on pallets, either with a corrugated cardboard outer or wrapped in polythene film. The wrapper bears the Certificate holder's name, product identification, roll width and length, 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 under cover and on a clean, level surface in a dry environment. Pallets must not be stacked more than three high.

11.2.2 Ancillary items must be stored in a similar environment.

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 product under the *GB CLP Regulation* and *CLP Regulation (EC) No 1272/2008 - classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s).

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard EN 13956 : 2012.

Management Systems Certification for production

The management system of Sikaplan GmbH has been assessed and registered as meeting the requirements of ISO 9001 : 2015 by SQS (Certificate 31982).

The product is manufactured in Germany and marketed in the UK by the Certificate holder.

Registered Contractor Scheme⁽¹⁾

The Certificate holder operates a Registered Contractor Scheme for the product under which contractors are trained, registered and regularly reviewed by the Certificate holder to demonstrate that they are competent to carry out installation in accordance with this Certificate. Details of Registered Contractors are available from the Certificate holder. Registered Contractors are responsible for each installation of the product they undertake.

(1) The Certificate holder's records relating to the Registered Contractors Scheme will be audited annually by the BBA as part of its programme of surveillance.

Additional Guidance

Recommendations for the design of green roofs and roof garden specifications are available within the latest edition of *The GRO Green Roof Code — Green Roof Code of Best Practice for the UK*.

Additional information on installation

A.1 The guidance given in the 2020 *SPRA Single Ply Design Guide* (S1/2020) must be followed during installation.

Procedure

A.2 Installation of the roofing system should commence from the roof perimeters, with sufficient underlayers and insulation boards installed to permit the fixing of the Sikaplan Metal Sheets.

A.3 Sikaplan Metal Sheets are fixed in place, over any roof insulation when present, at the roof perimeters, and internal corners and penetrations as work progresses.

A.4 The installation of the membrane is started from a suitable Sikaplan metal section at the perimeter. The product is installed in stages, rather than by fully completing one layer before starting the next.

A.5 The membrane is secured to the Sikaplan Metal Sheets at edges and upstands. The joints are made by solvent- or hot-air welding in the manner described in sections A.6 to A.11. Prefabricated corner sections should be used where possible for detail work.

Hot-air welding

A.6 Hot-air welding can be carried out by automatic or hand-operated hot-air welding machines, with a temperature set in accordance with the Certificate holder's instructions.

A.7 Lap joint areas on both sheets must be cleaned, using a cleaner recommended by the Certificate holder, if the surface has become badly contaminated.

Tee joints

A.8 The welding operation is carried out as described in sections A.5 to A.10. Where multiple sheet overlaps occur, the void created along the edge of the middle sheet should be sealed by hot-air welding the capillary.

Flashing

A.9 A range of profiles and shapes can be fabricated from Sikaplan Metal Sheets to deal with parapet, edge and gully details. These are mechanically fixed to the substructure and the membrane is continuously welded to them.

Ballast requirement

A.10 The membrane must be ballasted using a minimum rate of 80 kg per square metre of aggregate (grade 20 to 40 mm) or concrete pavers. In areas of high wind loads, additional ballast such as concrete pavers set on a suitable protective layer may be necessary.

Bibliography

BS 476-3 : 2004 *Fire tests on building materials and structures — Part 3 : Classification and method of test for external fire exposure to roofs*

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 site — Code of practice for waterproofing*

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

BS EN 1991-1-1 : 2002 *Eurocode 1: Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*

NA to BS EN 1991-1-1 : 2002 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*

BS EN 1991-1-3 : 2003 + A1 : 2015 *Eurocode 1 — Actions on structures — General actions — Snow loads*

NA + 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*

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

ISO 9001 : 2015 *Quality management systems — Requirements*

MOAT 27 : 1983 *UEAtc General Directive for the Assessment of Roof Waterproofing Systems*

MOAT 29 : 1984 *UEAtc Directives for the Assessment of Roofing Systems using PVC sheets without reinforcement, loose laid under heavy protection and not compatible with bitumen*

FLL 1984 *Procedure for investigating the root penetration resistance of membranes and coatings for green roofs*

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.

British Board of Agrément

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