

## Sika Ltd

Watchmead  
Welwyn Garden City  
Herts AL7 1BQ

Tel: 01707 394444

e-mail: sikarofing@uk.sika.com

website: www.gbr.sika.co.uk



## Agrément Certificate

19/5716

Product Sheet 1 Issue 2

### SIKA REINFORCED BITUMINOUS ROOFING SYSTEMS

### SIKASHIELD ROOF WATERPROOFING MEMBRANES

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to SikaShield Roof 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 Second issue: 12 April 2023  
Originally certificated on 19 December 2019

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. 3537).*

*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.*

#### British Board of Agrément

Building 3, Hatters Lane,  
Croxley Park, Watford  
Herts WD18 8YG

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tel: 01923 665300  
clientservices@bbacerts.co.uk  
www.bbacerts.co.uk

## 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 SikaShield Roof Waterproofing Membranes, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:



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

|                     |                                                                                                                                          |                                  |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>Requirement:</b> | <b>B4(1)</b>                                                                                                                             | <b>External fire spread</b>      |
| <b>Comment:</b>     | The products are restricted by this Requirement in some circumstances. See section 2 of this Certificate.                                |                                  |
| <b>Requirement:</b> | <b>B4(2)</b>                                                                                                                             | <b>External fire spread</b>      |
| <b>Comment:</b>     | On a suitable substructure, the products may enable a roof to be unrestricted under this Requirement. See section 2 of this Certificate. |                                  |
| <b>Requirement:</b> | <b>C2(b)</b>                                                                                                                             | <b>Resistance to moisture</b>    |
| <b>Comment:</b>     | The products, including joints, will enable a roof to satisfy this Requirement. See section 3 of this Certificate.                       |                                  |
| <b>Regulation:</b>  | <b>7(1)</b>                                                                                                                              | <b>Materials and workmanship</b> |
| <b>Comment:</b>     | The product is acceptable. See section 8 and the <i>Installation</i> part of this Certificate.                                           |                                  |



#### The Building (Scotland) Regulations 2004 (as amended)

|                    |                                                                                                                                                                                                                              |                                                            |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>Regulation:</b> | <b>8(1)(2)</b>                                                                                                                                                                                                               | <b>Fitness and durability of materials and workmanship</b> |
| <b>Comment:</b>    | The use of the products satisfies the requirements of this Regulation. See sections 8 and 9 and the <i>Installation</i> part of this Certificate.                                                                            |                                                            |
| <b>Regulation:</b> | <b>9</b>                                                                                                                                                                                                                     | <b>Building standards applicable to construction</b>       |
| <b>Standard:</b>   | <b>2.6</b>                                                                                                                                                                                                                   | Spread to neighbouring buildings                           |
| <b>Standard:</b>   | <b>2.7</b>                                                                                                                                                                                                                   | Spread on external walls                                   |
| <b>Comment:</b>    | The products are restricted under clauses 2.6.4 <sup>(1)(2)</sup> and 2.7.2 <sup>(1)(2)</sup> of this Standard in some circumstances. See section 2 of this Certificate.                                                     |                                                            |
| <b>Standard:</b>   | <b>2.8</b>                                                                                                                                                                                                                   | Spread from neighbouring buildings                         |
| <b>Comment:</b>    | The products, when applied to a suitable substructure, may enable a roof to be unrestricted under clause 2.8.1 <sup>(1)(2)</sup> of this Standard. See section 2 of this Certificate.                                        |                                                            |
| <b>Standard:</b>   | <b>3.10</b>                                                                                                                                                                                                                  | Precipitation                                              |
| <b>Comment:</b>    | The use of the products, including joints, will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1 and 3.10.7 <sup>(1)</sup> . See section 3 of this Certificate.                  |                                                            |
| <b>Standard:</b>   | <b>7.1(a)</b>                                                                                                                                                                                                                | Statement of sustainability                                |
| <b>Comment:</b>    | 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. |                                                            |

|                    |                                                                                                                                                                                                |                                                     |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <b>Regulation:</b> | <b>12</b>                                                                                                                                                                                      | <b>Building standards applicable to conversions</b> |
| <b>Comment:</b>    | Comments in relation to the products under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . |                                                     |
|                    | (1) Technical Handbook (Domestic).                                                                                                                                                             |                                                     |
|                    | (2) Technical Handbook (Non-Domestic).                                                                                                                                                         |                                                     |



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

|                    |                    |                                                                                                                                                                        |
|--------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Regulation:</b> | <b>23(1)(a)(i)</b> | <b>Fitness of materials and workmanship</b>                                                                                                                            |
| <b>Comment:</b>    | <b>(iii)(b)(i)</b> | The products are acceptable. See section 8 and the <i>Installation</i> part of this Certificate.                                                                       |
| <b>Regulation:</b> | <b>28(b)</b>       | <b>Resistance to moisture and weather</b>                                                                                                                              |
| <b>Comment:</b>    |                    | The products, including joints, can satisfy the requirements of this Regulation. See section 3 of this Certificate.                                                    |
| <b>Regulation:</b> | <b>36(a)</b>       | <b>External fire spread</b>                                                                                                                                            |
| <b>Comment:</b>    |                    | The products are restricted by this Regulation in some circumstances. See section 2 of this Certificate.                                                               |
| <b>Regulation:</b> | <b>36(b)</b>       | <b>External fire spread</b>                                                                                                                                            |
| <b>Comment:</b>    |                    | 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 2023

In the opinion of the BBA, SikaShield Roof Waterproofing Membranes, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards, 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 product.

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

## Fulfilment of Requirements

The BBA has judged SikaShield Roof 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. SikaShield Roof Waterproofing Membranes consist of:

- SikaShield HB79 Tex 4 mm — a polymer modified bitumen, torch-applied plain finish capsheet with a thermofusible non-woven polypropylene finish, reinforced with 180 g·m<sup>-2</sup> glass fibre/polyester composite backed with a thermofusible film
- SikaShield HB79 MG 4 mm — a polymer modified bitumen, torch-applied mineral finish capsheet, reinforced with 180 g·m<sup>-2</sup> glass fibre/polyester composite backed with a thermofusible film

- SikaShield E79 MG SA 4 mm — a polymer modified bitumen, self-adhesive/heat activated, mineral finish capsheet, reinforced with 180 g·m<sup>-2</sup> glass fibre/polyester composite with a removable liner over the adhesive compound on the underside
- SikaShield E54 PE 3 mm — a polymer modified bitumen, torch-applied plain finish underlay with thermofusible film, reinforced with 110 g·m<sup>-2</sup> stabilised polyester composite backed with a thermofusible film
- SikaShield E74 PE SA 3 mm — a polymer modified bitumen, self-adhesive plain finish underlay with thermofusible film, reinforced with 110 g·m<sup>-2</sup> stabilised polyester composite with a removable liner over the adhesive compound on the underside
- SikaShield P55 PE RT 4 mm — a polymer modified bitumen, torch-applied plain finish membrane with an anti-root additive, reinforced with a 120 g·m<sup>-2</sup> stabilised spunbond polyester inlay with a polyethylene backing film.

The products have the nominal characteristics given in Table 1.

*Table 1 Nominal characteristics of SikaShield Roof Waterproofing Membranes*

| Characteristic<br>(unit)                 | SikaBit Roof Waterproofing Membranes |                               |                                                              |                               |                                                              |                               |
|------------------------------------------|--------------------------------------|-------------------------------|--------------------------------------------------------------|-------------------------------|--------------------------------------------------------------|-------------------------------|
|                                          | HB79 Tex                             | HB79 MG                       | E79 MG<br>SA                                                 | E54 PE                        | E74 PE                                                       | P55 PE RT                     |
| 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                                  | 6.0                           | 6.0                                                          | 8.0                           | 8.0                                                          | 8.0                           |
| Mass per unit area (kg·m <sup>-2</sup> ) | 4.7                                  | 5.7                           | 4.5                                                          | 4.0                           | 3.6                                                          | 4.1                           |
| Roll weight (kg)                         | 37.6                                 | 34.2                          | 27                                                           | 32.0                          | 28.8                                                         | 32.8                          |
| Upper surface finish                     | Polypropylene<br>non-woven<br>fleece | Mineral<br>chippings          | Mineral<br>granules                                          | Film                          | Film                                                         | Film                          |
| Lower surface finish                     | Thermofusible<br>polyethylene        | Thermofusible<br>polyethylene | Peel-off<br>film<br>covering<br>self-<br>adhesive<br>bitumen | Thermofusible<br>polyethylene | Peel-off<br>film<br>covering<br>self-<br>adhesive<br>bitumen | Thermofusible<br>polyethylene |

#### Ancillary Items

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

- Primer 600 or 610 (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:

- SikaShield E74 PE SA 3 mm self-adhesive underlay and SikaShield HB79 MG 4 mm torch-applied mineral capsheet for use in exposed systems on pitched or flat roofs with limited access
- SikaShield E74 PE SA 3 mm self-adhesive underlay and SikaShield E79 MG SA 4 mm self-adhesive mineral capsheet for use in exposed systems on pitched or flat roofs with limited access
- SikaShield E54 PE 3 mm torch-applied underlay and SikaShield HB79 MG 4 mm torch-applied mineral capsheet for use in exposed systems on pitched or flat roofs with limited access
- SikaShield E74 PE SA 3 mm self-adhesive underlay and SikaShield HB79 Tex 4 mm torch-applied sanded capsheet for use in inverted roofs and ballasted roofs on flat roofs with limited access
- SikaShield E74 PE SA 3 mm self-adhesive underlay and SikaShield HB79 Tex 4 mm torch-applied sanded capsheet and SikaShield P55 PE RT 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 were assessed for the following key factors, and the outcomes of the assessments are shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

### **1 Mechanical resistance and stability**

Not applicable.

### **2 Safety in case of fire**

Data were assessed for the following characteristics.

#### 2.1 External fire spread

2.1.1 When tested to CEN/TS 1187 : 2012, Test 4 and classified to EN 13501-5 : 2016 the products given in Table 2 of this Certificate achieved B<sub>ROOF</sub>(t4) for slopes below 10°.

**Table 2 Tested systems**

| Layer                     | System 1 <sup>(1)</sup>                                                                                         | System 2 <sup>(2)</sup>                                                   | System 3 <sup>(3)</sup>                                               | System 4 <sup>(4)</sup> |
|---------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------|-------------------------|
| Substrate                 | 18 mm plywood deck primed with Primer 610 (spray)                                                               |                                                                           |                                                                       |                         |
| AVCL                      | 2 mm thick, modified bitumen AVCL with aluminium/glass composite carrier, self-adhesively bonded <sup>(5)</sup> |                                                                           | Not applicable                                                        | Not applicable          |
| Insulation                | 120 mm thick PIR board adhesively fixed with PU-based adhesive <sup>(5)</sup>                                   | 150 mm thick stone wool board fixed with PU-based adhesive <sup>(5)</sup> | Not applicable                                                        | Not applicable          |
| Primer                    | Primer 610 (spray)                                                                                              | Primer 610 (spray)                                                        | Not applicable                                                        | Not applicable          |
| Base sheet                | Fully bonded layer of SikaShield E74 PE SA 3 mm                                                                 |                                                                           | Fully bonded layer of SikaShield E74 PE SA 3 mm                       |                         |
| Cap sheet                 | Fully bonded layer of SikaShield E79 MG SA 4 mm                                                                 |                                                                           | Fully bonded layer of SikaShield E79 MG SA 4 mm                       |                         |
| Insulation                | Not applicable                                                                                                  | Not applicable                                                            | 150 mm thick XPS insulation board, loose-laid <sup>(5)</sup>          | Not applicable          |
| Water flow reducing layer | Not applicable                                                                                                  | Not applicable                                                            | Loose-laid water flow reducing layer <sup>(5)</sup>                   | Not applicable          |
| Protection                | Not applicable                                                                                                  | Not applicable                                                            | Layer of 25mm concrete paving slabs on paving supports <sup>(5)</sup> | Not applicable          |

(1) Fire test/Classification reports, reference 19682B and C, conducted by Warrington Fire, Gent. Report available from the Certificate holder.

(2) Fire test/ Classification reports, reference 19682F and G, conducted by Warrington Fire, Gent. Report available from the Certificate holder.

(3) Fire test/ Classification reports, reference 19682K and L, conducted by Warrington Fire, Gent. Report available from the Certificate holder.

(4) Fire test/Classification reports, reference 19682P and Q, conducted by Warrington Fire, Gent. Report available from the Certificate holder.

(5) The components are outside the scope of the Certificate.

2.1.2 On the basis of data assessed, the systems listed above 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 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 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 should 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<sup>(1)</sup>.

(1) Classification reports reference EUI-22-000437 to EUI-22-000442 inclusive, conducted by EFECTIS UK/Ireland Limited. The reports are available from the Certificate holder.

2.2.2 On the basis of data assessed, systems incorporating SikaShield Roof 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, should not be used less than 1 m from a boundary, or on residential buildings more than 11 m in height or on other buildings more than 18 m in height. Restrictions apply on assembly and recreation buildings. These constructions should 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, should not be used less than 1 m from a boundary, or on other buildings more than 18 m in height. Restrictions apply on assembly and recreation buildings. These constructions should also be included in calculations of unprotected area.

2.2.5 In Scotland when used in pitches greater than 70°, excluding upstands, the products should not be used on buildings less than 1 m from a boundary nor with a storey 11 m or more above the ground level or on some entertainment, assembly, hospital and residential care buildings. These constructions should 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                |
|------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------|-----------------------|
| SikaShield E74 PE SA 3 mm                                                                            | Watertightness BS EN 1928 : 2000                  | No leakage after 24 hour exposure to 1 metre head of water | Pass                  |
| SikaShield HB79 Tex 4 mm                                                                             |                                                   |                                                            | Pass                  |
| SikaShield HB79 MG 4 mm                                                                              |                                                   |                                                            | Pass                  |
| SikaShield E74 PE SA 3 mm                                                                            | Water vapour transmission to BS EN 1931 : 2000    | Value achieved                                             | $s_d - 232 \text{ m}$ |
| SikaShield HB79 Tex 4 mm                                                                             | Peel resistance of joints to BS EN 12316-1 : 2000 | Greater than or equal to 100 N                             | Pass                  |
| SikaShield E79 MG SA 4 mm                                                                            | Peel from substrate (concrete) to MOAT 64 : 2001  | Greater than or equal to 25 N per 50 mm                    | 129 N per 50 mm       |
| SikaShield HB79 Tex 4 mm                                                                             |                                                   |                                                            | 252 N per 50 mm       |
| SikaShield E74 PE SA 3 mm with SikaShield E79 MG SA 4 mm self-adhesive application on PIR insulation | Dynamic wind uplift to EOTA TR 005 : June 2003    | Design value <sup>(1)</sup>                                | 7.0 kPa               |
| SikaShield E74 PE SA 3 mm with SikaShield HB79 Tex 4 mm torch bonded on PIR insulation               |                                                   |                                                            | 7.5 kPa               |
| SikaShield E74 PE SA 3 mm with SikaShield E79 MG SA 4 mm self-adhesive application on plywood        |                                                   |                                                            | 8.5 kPa               |
| SikaShield E74 PE SA 3 mm with SikaShield HB79 Tex 4 mm torch bonded on plywood                      |                                                   |                                                            | 5.0 kPa               |

(1) The value for a specific building should 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.

3.1.2 On the basis of data assessed, SikaShield Roof 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  |
|---------------------------|----------------------------------------------------------------------|--------------------------|---------|
| SikaShield E74 PE SA 3 mm | Dynamic indentation to<br>BS EN 12691 : 2018 Method A<br>(aluminium) | Value achieved           | 500 mm  |
|                           | Dynamic indentation to<br>BS EN 12691 : 2018 Method B (EPS)          |                          | 1500 mm |
| SikaShield HB79 Tex 4 mm  | Dynamic indentation to                                               | I <sub>10</sub> declared | Pass    |
| SikaShield HB79 MG 4 mm   | BS EN 12691 : 2001 Method B (EPS)                                    |                          | Pass    |
| SikaShield E74 PE SA 3 mm | Static indentation to BS EN 12730 :<br>2015 Method A (EPS)           | Value achieved           | 10 kg   |
|                           | Static indentation to BS EN 12730 :<br>2015 Method B (concrete)      |                          | 15 kg   |
| SikaShield HB79 Tex 4 mm  | Static indentation to EN 12730 :                                     | 20 kg declared           | Pass    |
| SikaShield HB79 MG 4 mm   | 2001 Method A (EPS)                                                  | 20 kg declared           | Pass    |
| SikaShield HB79 Tex 4 mm  | Static indentation to EN 12730 :                                     | 25 kg declared           | Pass    |
| SikaShield HB79 MG 4 mm   | 2001 Method B (concrete)                                             | 25 kg declared           | Pass    |
| SikaShield HB79 Tex 4 mm  | Tensile strength to EN 12311-1 :                                     | 750 N per 50 mm ± 20%    | Pass    |
| SikaShield HB79 MG 4 mm   | 1999 longitudinal direction                                          | 750 N per 50 mm ± 20%    | Pass    |
| SikaShield HB79 Tex 4 mm  | Tensile strength to EN 12311-1 :                                     | 650 N per 50 mm ± 20%    | Pass    |
| SikaShield HB79 MG 4 mm   | 1999 transverse direction                                            | 650 N per 50 mm ± 20%    | Pass    |
| SikaShield HB79 Tex 4 mm  | Elongation to EN 12311-1 : 1999                                      | 50% ± 15% absolute       | Pass    |
| SikaShield HB79 MG 4 mm   | longitudinal direction                                               | 50% ± 15% absolute       | Pass    |
| SikaShield HB79 Tex 4 mm  | Elongation to EN 12311-1 : 1999                                      | 50% ± 15% absolute       | Pass    |
| SikaShield HB79 MG 4 mm   | transverse direction                                                 | 50% ± 15% absolute       | Pass    |
| SikaShield E54 PE 3 mm    | Tear strength to EN 12310-1 : 1999                                   | 50 N                     | Pass    |
| SikaShield E74 PE SA 3 mm | longitudinal direction                                               |                          | Pass    |
| SikaShield HB79 Tex 4 mm  |                                                                      |                          | Pass    |
| SikaShield HB79 MG 4 mm   |                                                                      |                          | Pass    |
| SikaShield E54 PE 3 mm    | Tear strength to EN 12310-1 : 1999                                   | 50 N                     | Pass    |
| SikaShield E74 PE SA 3 mm | transverse direction                                                 |                          | Pass    |
| SikaShield HB79 Tex 4 mm  |                                                                      |                          | Pass    |
| SikaShield HB79 MG 4 mm   |                                                                      |                          | Pass    |

3.2.2 On the basis of data assessed, SikaShield Roof 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 or the Certificate holder's walkway membrane). 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 6.

*Table 5 Resistance to root penetration tests*

| Products assessed         | Assessment method | Requirement                         | Result |
|---------------------------|-------------------|-------------------------------------|--------|
| SikaShield P55 PE RT 4 mm | EN 13948 : 2007   | No root penetration after two years | Pass   |

3.3.2 On the basis of data assessed, SikaShield P55 PE RT 4 mm will resist penetration by plant roots and remain weathertight.

3.3.3 SikaShield P55 PE RT 4 mm 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 |
|---------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------|--------|
| SikaShield HB79 Tex 4 mm  | Low temperature flexibility to<br>EN 1109 : 1999 – control                                   | -15°C                                      | Pass   |
| - SBS lower face          |                                                                                              |                                            |        |
| SikaShield HB79 MG 4 mm   |                                                                                              | -15°C                                      | Pass   |
| - SBS lower face          |                                                                                              | -5°C                                       | Pass   |
| - APAO upper face         |                                                                                              |                                            |        |
| SikaShield HB79 Tex 4 mm  | Heat aged 168 days at 70°C                                                                   | -10°C                                      | Pass   |
| - SBS lower face          |                                                                                              |                                            |        |
| - APAO upper face         |                                                                                              | 0°C                                        | Pass   |
| SikaShield HB79 MG 4 mm   |                                                                                              |                                            |        |
| - SBS lower face          |                                                                                              | -10°C                                      | Pass   |
| SikaShield HB79 Tex 4 mm  | Water soak 7 days at 23°C                                                                    | -20°C                                      | Pass   |
| - SBS lower face          |                                                                                              |                                            |        |
| - APAO upper face         |                                                                                              | -10°C                                      | Pass   |
| SikaShield HB79 MG 4 mm   |                                                                                              |                                            |        |
| - SBS lower face          |                                                                                              | -20°C                                      | Pass   |
| SikaShield HB79 Tex 4 mm  | Heat resistance to EN 1110 : 1999 –<br>control                                               | 100°C (SBS) 120°C (APP)                    | Pass   |
| SikaShield HB79 MG 4 mm   |                                                                                              |                                            | Pass   |
| SikaShield HB79 Tex 4 mm  | Heat aged 168 days at 70°C                                                                   | 90°C (SBS) 110°C (APP)                     | Pass   |
| SikaShield HB79 MG 4 mm   |                                                                                              |                                            | Pass   |
| SikaShield E79 MG SA 4 mm | Peel from substrate (concrete) to<br>MOAT 64 : 2001 – heat aged 28<br>days at 70°C           | Greater than or equal to 25 N<br>per 50 mm | Pass   |
| SikaShield E74 PE SA 3 mm | Resistance to slipping to MOAT 64 : Maximum movement of 2 mm<br>2001 – tested at 90° at 80°C |                                            | 0.7 mm |
| SikaShield HB79 Tex 4 mm  |                                                                                              |                                            | < 2 mm |
| SikaShield E54 PE 3 mm    | Dimensional stability to EN 1107-1 :<br>1999 – longitudinal direction                        | ±0.3%                                      | Pass   |
| SikaShield E74 PE SA 3 mm |                                                                                              |                                            | Pass   |
| SikaShield HB79 Tex 4 mm  |                                                                                              |                                            | Pass   |
| SikaShield HB79 MG 4 mm   |                                                                                              |                                            | Pass%  |
| SikaShield E54 PE 3 mm    | Dimensional stability to EN 1107-1 :<br>1999 – longitudinal direction                        | ±0.3%                                      | Pass   |
| SikaShield E74 PE SA 3 mm |                                                                                              |                                            | Pass   |
| SikaShield HB79 Tex 4 mm  |                                                                                              |                                            | Pass   |
| SikaShield HB79 MG 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 it is 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.

Information provided by the Certificate holder was assessed for the following factors.

### 9 Design, installation, workmanship and maintenance

#### 9.1 Design

The design process was assessed, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.1 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.

9.1.2 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.

9.1.3 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.

9.1.4 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.

9.1.5 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.

9.1.6 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.

9.1.7 The ballast requirements for loose-laid specifications 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 system should 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 should be sought. Alternatively, concrete slabs on suitable supports can be used.

9.1.8 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.

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

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

9.1.11 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 provide 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 are 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 Sika Primer 600 or 610 (spray) as specified, and at the recommended rate of 150 to 500 gm<sup>-2</sup> for Primer 600, and 75 to 200 gm<sup>-2</sup> 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 should 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 should be a minimum height of 150 mm above the finished roof surface.

9.2.10 The underlays are installed by torch-bonding for SikaShield E54 PE 3 mm onto non-combustible substrates only and by self-adhesive application for SikaShield E74 PE 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 SikaShield HB79 MG 4 mm and SikaShield HB79 Tex 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 SikaShield E79 MG SA 4 mm, the peel off film on the underside is removed before laying the membrane.

9.2.14 End and side laps for the capsheets are a minimum of 150 and 75 mm wide respectively, care should be taken to ensure that a continuous 5 mm 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, SikaShield P55 PE RT 4 mm Root Barrier membrane is used, in accordance with the Certificate holder's instructions, which must be strictly followed.

9.2.16 On completion of the roof, SikaShield HB79 Tex 4 mm sanded capsheet must have a surface finish applied in accordance with BS 8217 : 2005, clauses 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 the SikaShield Roof Waterproofing Membranes, once installed, be inspected in accordance with *NHBC Standards 2023* Chapter 7.1, Clause 7.1.11, including the use of 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 products performance.

### 9.3 Workmanship

9.3.1 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 capsheet can be effectively repaired, after cleaning the surrounding areas, with a patch of the appropriate capsheet over the damaged area in accordance with the Certificate holder's instructions.

## 10 **Manufacture**

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

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

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

10.1.3 The quality control procedures and 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.

†10.1.6 The BBA has undertaken to 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 products are delivered to site in packaging bearing the products name and production code. The rolls are packed on pallets and shrink-wrapped in polythene.

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 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).

### UKCA marking

The Certificate holder has taken the responsibility of UKCA marking the products in accordance with Designated Standard EN 13707 : 2013.

### CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with European harmonised Standard EN 13707 : 2013.

### Additional information on installation

#### General

A.1 Recommendations for the design of green roof 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*.

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 should 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 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 *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*
- 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 1107 : 1999 *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 : 1999 *Flexible sheets for waterproofing. Bitumen sheets for roof waterproofing. Determination of flow resistance at elevated temperature*
- EN 12310 -1 : 1999 *Flexible sheets for waterproofing — Determination of resistance to tearing (nail shank) — Part 1 : Bitumen sheets for roof waterproofing*
- EN 12311-1 : 1999 *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*
- 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 products 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 products 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 products or any other products
- the right of the Certificate holder to manufacture, supply, install, maintain or market the products
- actual installations of the products, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the products are installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the products, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA and CE marking.

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

Building 3, Hatters Lane,  
Croxley Park, Watford  
Herts WD18 8YG

©2023

tel: 01923 665300  
clientservices@bbacerts.co.uk  
[www.bbacerts.co.uk](http://www.bbacerts.co.uk)