

Sika Ltd

Watchmead
Welwyn Garden City
Herts AL7 1BQ

Tel: 01707 394444

e-mail: sikaroofting@uk.sika.com

website: www.sikabit.co.uk



Agrément Certificate

19/5716

Product Sheet 1

SIKA BITUMINOUS ROOFING SYSTEMS

SIKABIT PRO ROOF WATERPROOFING MEMBRANES

This Agrément Certificate Product Sheet⁽¹⁾ relates to SikaBit PRO Roof Waterproofing Membranes, a range of reinforced modified bitumen waterproofing membranes for use as partially or fully bonded and loose-laid and ballasted, inverted and green roof specifications, on pitched and flat roofs with limited access.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Weathertightness — the products will resist the passage of moisture to the interior of the building (see section 6).

Properties in relation to fire — the products, when used in a suitable specification, can enable a roof to be unrestricted under the national Building Regulations (see section 7).

Resistance to wind uplift — the products will resist the effects of any likely wind suction acting on the roof (see section 8).

Resistance to mechanical damage — the products will accept, without damage, the limited foot traffic and loads associated with installation and maintenance (see section 9).

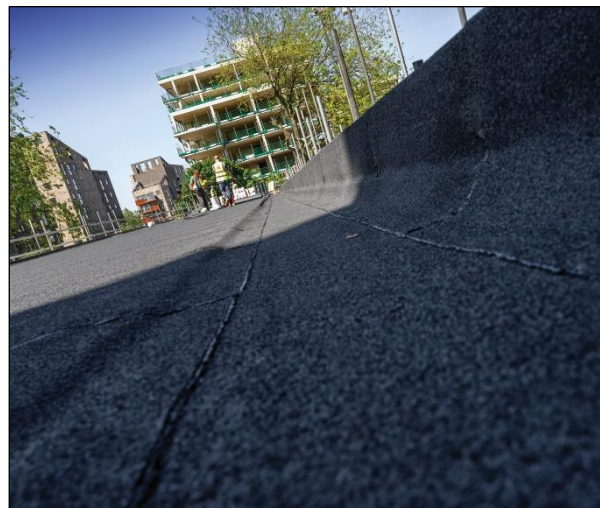
Resistance to root penetration — the SikaBit PRO T-240 RT Root Barrier membrane can be designed to adequately resist the penetration of roots (see section 10).

Durability — under normal service conditions, the products will provide a durable waterproof covering with a service life in excess of 30 years (see section 12).

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 First issue: 19 December 2019



Brian Moore
Director

The BBA is a UKAS accredited certification body – Number 113.

*The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk
Readers **MUST** check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.*

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

British Board of Agrément

Bucknalls Lane
Watford
Herts WD25 9BA

©2019

Page 1 of 12

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

Regulations

In the opinion of the BBA, SikaBit PRO 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 presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



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

Requirement:	B4(2)	External fire spread
Comment:		On a suitable substructure, the membranes can enable a roof to be unrestricted under this Requirement. See sections 7.1, 7.2, 7.3 and 7.4 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The membranes, including joints, will enable a roof to satisfy this Requirement. See section 6.1 of this Certificate.
Regulation:	7	Materials and workmanship (applicable to Wales only)
Regulation:	7(1)	Materials and workmanship (applicable to England only)
Comment:		The membranes are acceptable. See section 12.1 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The use of the membranes satisfies the requirements of this Regulation. See sections 11.1 and 12.1 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.8	Spread from neighbouring buildings
Comment:		The membranes, when applied to a suitable substructure, can be regarded as having low vulnerability under clause 2.8.1 ⁽¹⁾⁽²⁾ of this Standard. See sections 7.1, 7.2 and 7.4 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The use of the membranes, including joints, will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1 and 3.10.7 ⁽¹⁾ . See section 6.1 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The products 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 applicable to conversions
Comment:		All comments given for the products under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ .

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).



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

Regulation:	23(a)(i)	Fitness of materials and workmanship
Comment:	(iii)(b)(i)	The membranes are acceptable. See section 12.1 and the <i>Installation</i> part of this Certificate.

Regulation:	28(b)	Resistance to moisture and weather
Comment:		The membranes, including joints, will enable a roof to satisfy the requirements of this Regulation. See section 6.1 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		On a suitable substructure, the membranes can enable a roof to be unrestricted under the requirements of this Regulation. See sections 7.1 to 7.4 of this 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.

See sections: 1 *Description* (1.2) and 3 *Delivery and site handling* (3.3) of this Certificate.

Additional Information

NHBC Standards 2019

In the opinion of the BBA, SikaBit PRO Roof Waterproofing Membranes, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs and balconies*.

CE marking

The Certificate holder has taken the responsibility of CE marking the waterproofing products in accordance with harmonised European Standards BS EN 13707 : 2013. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

Description

1.1 SikaBit PRO Roof Waterproofing Membranes are a range of amorphous-poly-alpha-olefin (APAO)-modified bitumen upper layer, and styrene-butadiene-styrene (SBS)-modified bitumen lower layer membranes, reinforced with a composite reinforcement made of a glass fleece and spunbond polyester as follows:

- SikaBit PRO T-940 — a polymer modified bitumen, torch-on plain finish capsheet, reinforced with 180 g·m⁻² glass/polyester composite backed with a thermofusible film
- SikaBit PRO T-940G — a polymer modified bitumen, torch-on mineral finish capsheet, reinforced with 180 g·m⁻² fibre glass/polyester composite backed with a thermofusible film
- SikaBit PRO SA-940G — a polymer modified bitumen, self-adhesive/heat activated, mineral finish capsheet, reinforced with 180 g·m⁻² fibreglass/polyester composite with a removable liner over the adhesive compound on the underside.
- SikaBit PRO T-630 — a polymer modified bitumen, torch-on plain finish underlay, reinforced with 110 g·m⁻² stabilised glass/polyester composite backed with a thermofusible film
- SikaBit PRO-SA 730 — a polymer modified bitumen, self-adhesive plain finish underlay, reinforced with 110 g·m⁻² stabilised polyester fabric with a removable liner over the adhesive compound on the underside
- SikaBit PRO T-240 RT — a polymer modified bitumen, torch-on plain finish membrane with an anti-root additive, reinforced with a 120 g·m⁻² stabilised spunbond polyester inlay with a polyethylene backing film.

1.2 The nominal characteristics of the membranes are shown in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	SikaBit PRO Roof Waterproofing Membranes					
	T-940	T-940 G	SA 940 G	T-630	SA 730	T 240 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 ⁻²)	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
Tensile strength* (N per 50 mm)						
longitudinal	750	750	750	400	450	700
transverse	650	650	650	300	400	500
Elongation* (%)						
longitudinal	50	50	50	35	40	40
transverse	50	50	50	40	40	45
Watertightness* (60 kPa)	pass	Pass	pass	pass	pass	pass
Low temperature flexibility* (°C)	-25	-15	-25	-15	—	-15
Flow resistance (°C)	≥ 110	≥ 100	≥ 100	≥ 100	≥ 100	≥ 120
Upper surface finish	Foil	Mineral chippings	Mineral granules	Plain	Film	Film
Lower surface finish	Thermofusible polyethylene	Thermofusible polyethylene	Peel-off film covering self-adhesive bitumen	Thermofusible polyethylene	Peel-off film covering self- adhesive bitumen	Peel-off film covering self- adhesive bitumen

1.3 Materials for use with the membranes, and included in this assessment, are:

- SikaBit Concrete Primer — for use in preparing substrates prior to installation of self-adhesive membranes
- Primer 600 or 610 (spray) — for use with the vapour control layer (vcl).

1.4 Other materials for use with the membranes, but which are outside the scope of this Certificate, are:

- Sika vcl
- Sika insulation adhesive
- Sikatherm insulation boards
- Sika roof drain outlets/scuppers — a range of overflow and outlets for rain water drainage
- Sika edge trims and termination details — for use at flashings
- Sika lightning conductor clips
- Sika rooflights
- Sika walkways
- Sika edge protection system.

2 Manufacture

2.1 The membranes are manufactured by laminating a layer of APAO and a layer of SBS polymer-modified bitumen reinforced with a glass/polyester composite. When cooled, the lower and upper surfaces are applied as appropriate and the sheets are cooled, trimmed and rolled for packaging.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials

- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out 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.

2.3 The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by Bureau Veritas (Certificate 191934).

3 Delivery and site handling

3.1 The membranes are delivered to site in rolls with either paper wrappers or tape bands bearing the product name and production code. The rolls are packed on pallets and shrink-wrapped in polythene.

3.2 Rolls should be stored upright on a clean, level surface, away from excessive heat and kept under cover. The self-adhesive products should be stored out of direct sunlight.

3.3 The Certificate holder has taken the responsibility of classifying and labelling the products under the *CLP Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s).

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on SikaBit PRO Roof Waterproofing Membranes.

Design Considerations

4 General

4.1 SikaBit PRO Roof Waterproofing Membranes are satisfactory for use in built-up specifications in partially or fully bonded, loose-laid and green roof specifications, on pitched or flat roofs with limited access as follows:

- SikaBit PRO SA-730 self-adhesive underlay and SikaBit PRO T-940G torch-applied mineral capsheet for use in exposed systems
- SikaBit PRO SA-730 self-adhesive underlay and SikaBit PRO SA-940G self-adhesive mineral capsheet for use in exposed systems
- SikaBit PRO T630 torch-applied underlay and SikaBit PRO T-940G torch-applied mineral capsheet for use in exposed systems
- SikaBit PRO SA-730 self-adhesive underlay and SikaBit PRO T-940 torch-applied sanded capsheet and SikaBit PRO T-240 RT Root Barrier for use in inverted-ballasted/green roof applications.

4.2 Decks to which the membranes are to be applied must comply with the relevant requirements of BS 6229 : 2018, BS 8217 : 2005 and, where appropriate, *NHBC Standards* 2019, Chapter 7.1.

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

- 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.

4.4 Limited access roofs are defined for the purpose of this Certificate as those subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc. Where traffic in excess of this is envisaged, such as pedestrian access roofs, additional protection must be provided (see section 10 of this Certificate and the relevant sections of the Certificate holder's installation instructions).

4.5 Flat roofs are defined for the purpose of this Certificate as those having a minimum finished fall of 1:80⁽¹⁾. For design purposes, twice the minimum finished fall should be assumed unless a detailed analysis of the roof is available, including overall and local deflection, direction of falls, etc.

(1) *NHBC Standards 2019* require a minimum fall of 1:60 for green roofs and roof gardens.

4.6 Pitched roofs are defined for the purpose of this Certificate as those having a fall in excess of 1:6.

4.7 Structural decks to which the membranes are to be applied must be suitable to transmit the dead and imposed loads experienced in service. Imposed loads, dead loading and wind loads are 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.

4.8 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*.

4.9 The drainage systems for inverted roofs, green roofs or roof gardens must be correctly designed, and the following points should 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
- additional guidance for inverted roof specifications is given in BBA Information Bulletin No 4 *Inverted roofs – Drainage and U value corrections*.

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

- as described in the relevant clauses of BS 8217 : 2005, or
- the subject of a current BBA Certificate and be used in accordance with, and within the limitations of, that Certificate.

5 Practicability of installation

The membranes must only be installed by contractors who have been trained and approved by the Certificate holder.

6 Weathertightness



6.1 The membranes, including joints, when completely sealed and consolidated, will adequately resist the passage of moisture to the inside of the building and so satisfy the requirements of the national Building Regulations.

6.2 The membranes are impervious to water and, when used in the systems described, will give a weathertight roofing capable of accepting minor structural movement without damage.

7 Properties in relation to fire



7.1 The following systems incorporating the membranes, when tested to DD CEN/TS 1187 : 2012, Test 4, and classified in accordance with BS EN 13501-5 : 2016, achieved B_{ROOF}(t4):

- an 18 mm plywood deck primed with Primer 610 (spray)
- a layer of S-VAP HD SA, self adhesively bonded
- a 120 mm thick Sikatherm PIR board adhesively fixed with PU-based Sika-Trocal C200 adhesive
- a fully bonded layer of SikaBit PRO SA 730 primed with Primer 610 (spray)
- a fully bonded layer of SikaBit PRO SA 940G

or

- an 18 mm plywood deck primed with Primer 610 (spray)
- a layer of S-VAP HD SA, self adhesively bonded
- a 150 mm thick Sikatherm stone wool insulation board adhesively fixed with PU-based Sika-Trocal C200 adhesive
- a fully bonded layer of SikaBit PRO SA 730 primed with Primer 610 (spray)
- a fully bonded layer of SikaBit PRO SA 940G

or

- an 18 mm plywood deck primed with Primer 610 (spray)
- a fully bonded layer of SikaBit PRO SA 730
- a fully bonded layer of SikaBit PRO SA 940G
- a 150 mm thick Sikatherm XPS insulation board, loose-laid
- a layer of water infiltration reducing membrane, loose-laid and ballasted
- a layer of 25mm concrete paving slabs on paving supports

or

- an 18 mm plywood deck primed with Primer 610 (spray)
- a fully bonded layer of SikaBit PRO SA 730
- a fully bonded layer of SikaBit PRO SA 940G.

- (1) Fire test/Classification reports, reference 19682B/C, conducted by Warrington Fire, Gent. Report available from the Certificate holder.
- (2) Fire test/ Classification reports, reference 19682F/G, conducted by Warrington Fire, Gent. Report available from the Certificate holder.
- (3) Fire test/ Classification reports, reference 19682K/L, conducted by Warrington Fire, Gent. Report available from the Certificate holder.
- (4) Fire test/Classification reports, reference 19682P/Q, conducted by Warrington Fire, Gent. Report available from the Certificate holder.

7.2 In the opinion of the BBA, a roof incorporating the systems will be unrestricted under the national Building Regulations 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.



7.3 In Wales and Northern Ireland, when used on flat roofs with the surface finishes listed below, the roof is also deemed to be unrestricted:

- 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.



7.4 The designation of other specifications (eg on combustible substrates) should be confirmed by reference to the requirements of the documents supporting the national Building Regulations.

7.5 If allowed to dry, plants used may allow the spread of flame across the roof. This must be taken into consideration when selecting suitable plants for the roof. Appropriate planting, irrigation and/or protection must be applied to ensure the overall fire-rating of the roof is not compromised.

8 Resistance to wind uplift

8.1 The adhesion of the bonded membranes is sufficient to resist the effects of wind suction, elevated temperature and thermal shock conditions likely to occur in practice.

8.2 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.

8.3 The ballast requirements for loose-laid specifications 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. 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.

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

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

9 Resistance to mechanical damage

The membranes can accept, without damage, the foot traffic and light concentrated loads associated with installation and maintenance. Where traffic in excess of this 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 manufacturer's walkway sheets). Reasonable care should be taken to avoid puncture by sharp objects or concentrated loads.

10 Resistance to root penetration

SikaBit PRO T-240 RT Root Barrier membrane will resist penetration by plant roots and can be used as a layer in the waterproofing system in green roof and roof garden specifications.

11 Maintenance



11.1 The membranes must be the subject of six monthly inspections and maintenance in accordance with BS 6229 : 2018, Chapter 7, to ensure continued performance.

11.2 For green roofs and roof gardens, guidance is available within the latest edition of The GRO Green Roof Code – *Green Roof Code of Best Practice for the UK*.

11.3 Where damage has occurred it should be repaired in accordance with section 16 and the Certificate holder's instructions.

12 Durability



12.1 Under normal service conditions, the membranes will provide a durable waterproof covering with a service life in excess of 30 years.

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

Installation

13 General

13.1 Installation of SikaBit PRO Roof Waterproofing Membranes is carried out in accordance with the Certificate holder's instructions, the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989 and BS 8217 : 2005, and this Certificate.

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

13.3 The membranes may be 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.

13.4 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.

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

13.6 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.

13.7 On completion of the roof, SikaBit PRO T-940 sanded capsheet must have a surface finish applied in accordance with BS 8217 : 2005, clauses 8.19. Surface finishes in the code of Practice include:

- stone aggregate in dressing compound
- precast concrete paving flags
- proprietary tiles in bonding compound.

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

13.9 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.

14 Procedure

14.1 The substrate should be prepared using Sika Primer 600 or 610 (spray) as specified, and at the recommended rate of 150 to 500 gm⁻² for Primer 600, and 75 to 200 gm⁻² for Primer 601, depending on the roughness and absorbency of the substrates, prior to the installation of the vcl. The vcl is rolled out onto the primed substrate, positioned and cut to length and applied on the substrate. The membrane should be completed at the edges at least 100 mm higher than the insulation boards.

14.2 The underlays are installed by torch-bonding for SikaBit PRO T630 and by self-adhesive application for SikaBit PRO SA 730.

14.3 End and side laps for the underlays must be fully bonded, ensuring that a continuous bead of bitumen exudes from the lap.

14.4 The underlay must be taken a sufficient distance up all upstands and protrusions to ensure a secure lap with the vcl, and should be a minimum height of 150 mm above the roof surface.

14.5 Bonding of SikaBit Pro T 940G and Pro T 940 is achieved by melting the lower surface by torching and pressing the membrane down. Care must be taken not to overheat the membrane.

14.6 When using SikaBit PRO SA 940G, the peel off film on the underside is removed before laying the membrane.

14.7 Horizontal areas are to be installed using hot air welding equipment.

14.8 End and side laps for the capsheets are to be a minimum of 150 and 100 mm wide respectively, and when using the torch-applied membranes, care should be taken to ensure that a continuous bead of bitumen exudes from the lap.

14.9 For green roof or roof garden applications, SikaBit PRO T-240 RT Root Barrier membrane is used, in accordance with the Certificate holder's instructions which must be strictly followed.

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

15 Repair

In the event of damage, the capsheet can be effectively repaired, after cleaning the surrounding areas, with a patch of the appropriate capsheet torch-bonded over the damaged area, with an overlap on the undamaged membrane by 100mm in all directions in accordance with the Certificate holder's instructions.

Technical Investigations

16 Tests

Tests were conducted on the membranes used in SikaBit PRO Roof Waterproofing Membranes and the results assessed to determine:

- thickness
- mass per unit area
- width
- fines content
- heat resistance
- slippage
- tensile strength and elongation
- nail tear
- dimensional stability
- low temperature flexibility
- watertightness
- water vapour transmission
- wind uplift
- static indentation
- dynamic impact
- shear resistance of joints
- peel strength
- effects of heat ageing
- effects of water
- resistance to root penetration.

17 Investigations

17.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

17.2 Data on fire performance were assessed.

17.3 Visits were carried out to existing sites.

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 1991-1-1 : 2002 *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
- NA to BS EN 1991-1-1 : 2002 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
- BS EN 1991-1-3 : 2003 + A1 : 2015 *Eurocode 1 — Actions on structures — General actions — Snow loads*
- NA + A2 : 18 to BS EN 1991-1-3 : 2003 + A1 : 2015 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Snow loads*
- BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 — Actions on structures — General actions — Wind actions*
- NA to BS EN 1991-1-4 : 2005 + A1 : 2010 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Wind actions*
- BS EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roof tests*
- BS EN 13707 : 2013 *Flexible sheets for waterproofing — Reinforced bitumen sheets for roof waterproofing — Definitions and characteristics*
- BS EN ISO 9001 : 2015 *Quality management systems — Requirements*
- DD CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*

18 Conditions

18.1 This Certificate:

- relates only to the product/system 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.

18.2 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.

18.3 This Certificate will remain valid for an unlimited period provided that the product/system 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.

18.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

18.5 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/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

18.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system 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.