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Agrément Certificate
13/5075
Product Sheet 1

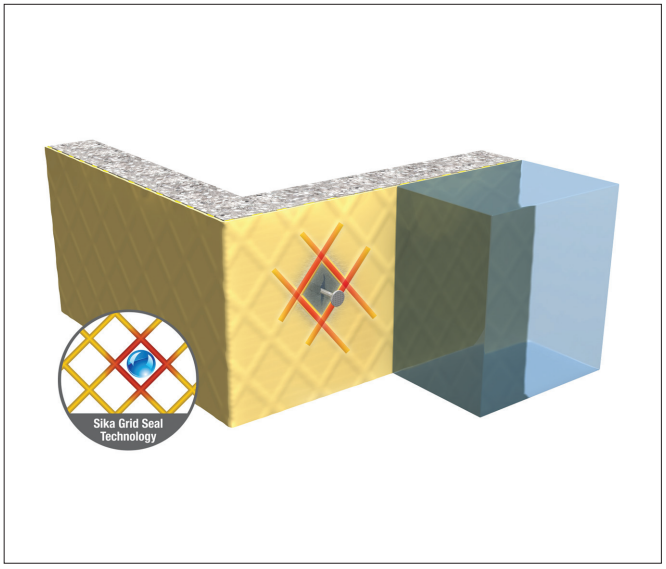
SIKA TANKING MEMBRANES

SIKAPROOF A MEMBRANES

This Agrément Certificate Product Sheet(1) relates to SikaProof A(2) Membranes, flexible polyolefin (FPO) sheets for use as damp-proofing and waterproofing membranes for solid concrete floors and walls, underground structures, and for internally and externally applied tanking below ground. SikaProof A08 and SikaProof A12 membranes also contribute to restricting the ingress of radon, carbon dioxide and methane.

(1) Hereinafter referred to as 'Certificate'.

(2) SikaProof A is a registered trademark.



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

Resistance to water and water vapour — the products, including joints, will resist the passage of moisture into a structure (see section 6).

Resistance to underground gases — SikaProof A08 and A12 membranes can contribute to restricting the ingress of radon gas, carbon dioxide and methane into the building (see section 7).

Resistance to mechanical damage — the products will accept, without damage, the limited foot traffic and loads associated with installation and the effects of thermal or other minor movement likely to occur in practice (see section 8).

Adhesion and stability — the membranes have satisfactory adhesion to the substrate and to their joints, and will accommodate minor movements likely to occur under normal service conditions (see section 9).

Durability — under normal service conditions, the products will provide an effective barrier to the transmission of moisture and will resist the ingress of radon for the life of the structure in which they are incorporated (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 Second issue: 17 May 2017

John Albon — Head of Approvals
Construction Products

Claire Curtis-Thomas
Chief Executive

Originally certificated on 16 December 2013

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 are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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Regulations

In the opinion of the BBA, SikaProof A Membranes, if installed, used and maintained in accordance with this Certificate, will 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:	C1(2)	Preparation of site and resistance to contaminants
Comment:		The SikaProof A08 and SikaProof A12 products can contribute to a structure satisfying this Requirement with regards to radon. See section 7.1 of this Certificate.
Requirement:	C2(a)	Resistance to moisture
Comment:		The products, including joints, will enable a structure to satisfy this Requirement. See section 6.1 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The products are acceptable. See section 12 and the *Installation* part of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The products satisfy the requirements of this Regulation. See section 12 and the *Installation* part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	3.2	Site preparation – protection from radon
Comment:		The SikaProof A08 and SikaProof A12 products will contribute to satisfying the requirements of this Standard, with reference to clauses 3.2.1[(1)(2)] and 3.2.2[(1)(2)]. See section 7.1 of this Certificate.
Standard:	3.4	Moisture from the ground
Comment:		The products will enable a floor to satisfy the requirements of this Standard, with reference to clauses 3.4.1[(1)(2)], 3.4.2[(1)(2)], 3.4.5[(1)(2)] and 3.4.7[(1)(2)]. 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)(iii)(b)(i)	Fitness of materials and workmanship
Comment:		The products are acceptable materials. See section 12 and the *Installation* part of this Certificate.
Regulation:	26(1)(b)(2)	Site preparation and resistance to contaminants
Comment:		The SikaProof A08 and SikaProof A12 products will contribute to a structure satisfying the requirements of this Regulation with regards to radon. See section 7.1 of this Certificate.
Regulation:	28(a)	Resistance to moisture and weather
Comment:		The products will enable a floor to satisfy this Regulation. See section 6.1 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 section: 1 *Description* (1.2) of this Certificate.

Additional Information

NHBC Standards 2017

NHBC accepts the use of SikaProof A Membranes, provided they are installed, used and maintained in accordance with this Certificate in relation to *NHBC Standards*, Technical Requirement R3 and Chapters 4.1 *Land quality – managing ground conditions*, 5.1 *Substructure and ground bearing floors* clause 5.1.20 *Damp-proofing concrete floors, for use below the slab and in sandwich constructions* and 5.4 *Waterproofing of basements and other below ground structures*.

Where Grade 3 waterproofing protection is required and the below ground wall retains more than 600 mm measured from the top of the retained ground to the lowest finished floor level, the products must be used in combination with either a Type B or Type C waterproofing protection, as defined in BS 8102 : 2009. The Certificate holder should be consulted for approved Type B and Type C solutions.

CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard BS EN 13967 : 2012. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 SikaProof A Membranes are embossed flexible polyolefin (FPO) pre-applied sheet materials with a grid pattern of sealant, a non-woven reinforced polypropylene fleece on the upper face and a self-adhesive strip along one edge. The membranes are available in three grades; SikaProof A05, SikaProof A08 and SikaProof A12.

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

Table 1 Nominal characteristics

Characteristics (unit)	Grade		
	A05	A08	A12
Thickness* (mm)	0.5	0.8	1.2
Length* (m)	30	25	20
Mass per unit area* ($kg \cdot m^{-2}$)	0.9	1.1	1.5
Width* (m)	1, 2	1, 2	1, 2
Roll weight* (kg)	24, 48	28.7, 57.5	30, 60
Tensile Strength ($N \cdot 50\ mm^{-1}$)			
MD	250	400	675
CD	250	375	550
Elongation at Break (%)			
MD	300	450	475
CD	500	500	550
Tear resistance* (N)	275	400	550
Watertightness*	Pass	Pass	Pass
Water vapour transmission* ($g \cdot m^{-2} day^{-1}$)	0.75 - 0.95	0.75 - 0.95	0.75 - 0.95
Resistance to impact* (mm)			
Resistance to static loading* (kg)	>20	>20	>20
Low temperature foldability (°C)	−25	−25	−25

1.3 Ancillary materials for use with the products and included in the scope of this Certificate are:

- SikaProof A08/A12 Edge — preformed SikaProof A for use at perimeter edges and terminations
- SikaProof Tape-150 — a butyl rubber-based self-adhesive tape used for sealing membrane joints on the fleece side
- SikaProof ExTape-150 — a butyl rubber-based self-adhesive tape used for sealing membrane joints
- SikaProof Tape-150A — a self-adhesive tape based on a polyacrylate-adhesive on a yellow carrier film coated with SikaProof A on the fleece side of the membrane
- SikaProof Patch-200B — a 200 mm wide self-adhesive tape, consisting of SikaProof membrane coated with a butyl adhesive and protected with a release film, used for sealing and repair of the membrane.

1.4 Other ancillary materials for use with the products but outside the scope of this Certificate are:

- SikaProof Fix Tape-50 — a double-sided butyl rubber-based adhesive tape used for repairing temporary fixings and forming details in the membrane
- SikaProof Metal Sheet — a metal sheet laminated with SikaProof compound used to form details.

2 Manufacture

2.1 The products are manufactured by conventional manufacturing processes of mixing, extrusion, coating and lamination.

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.

3 Delivery and site handling

3.1 The products are supplied in rolls wrapped in yellow polythene film with a self-adhesive label bearing the Certificate holder's name and traceability information. The rolls have a shelf life of 12 months from the date of production.

3.2 The rolls should be stacked in a horizontal position, in dry conditions and at temperatures between 5°C and 30°C. They must be protected from direct sunlight, rain, snow and ice.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on SikaProof A Membranes.

Design Considerations

4 Use

4.1 SikaProof A Membranes are satisfactory for use as Type A waterproofing protection as defined in BS 8102 : 2009 for the waterproofing of new or existing structures. The products can be used internally and externally on concrete substrates to provide an effective barrier to the transmission of liquid water where Grade 1 to 3 waterproofing protection is required as defined in Table 2 of BS 8102 : 2009.

4.2 SikaProof A08 and SikaProof A12 membranes will also restrict the ingress of radon into buildings from naturally-occurring sources.

4.3 Buildings in areas of risk should be constructed in accordance with the recommendations of BRE Report BR 211 : 2015 and following the guidance set out in BS 8485 : 2015.

5 Practicability of installation

The products should only be installed by installers who have been trained and approved by the Certificate holder.

6 Resistance to water and water vapour

6.1 The products, including joints, when completely sealed and consolidated, will adequately resist the passage of moisture from the ground into the structure and will enable a structure to comply with the requirements of the national Building Regulations:

England and Wales — Approved Document C, Requirement C2(a), Section 4.7

Scotland — Mandatory Standard 3.4, clauses 3.4.1, 3.4.2 and 3.4.5 to 3.4.7

Northern Ireland — Regulation 28(a).

6.2 The products are impervious to water and will give a waterproof layer capable of accepting minor structural movements without damage.

7 Resistance to underground gases

7.1 SikaProof A08 and A12 will contribute to restricting the ingress of radon methane and carbon dioxide into buildings from naturally-occurring sources.

7.2 The results of an independent assessment of the SikaProof A08 and A12 membrane indicate that, when installed as a waterproofing membrane fully bonded to concrete (suitable for Grade 2 or 3 waterproofing), following the SikaProof guidelines and application, the products can provide a similar performance in terms of gas protection to a structural barrier and separate gas-resistant membrane, as defined in BS 8485 : 2015. The Certificate holder must be contacted for more details relating to the performance to be expected from a specific installation.

7.3 BRE Report BR 211 : 2015 recommends a 300 µm thick polyethylene sheet as the minimum required thickness for a radon gas-resistant membrane. It is generally accepted that other materials with comparable or higher gas resistance are suitable, provided they can withstand the construction process. In the opinion of the BBA, the products meet these criteria.

7.4 Measured gas permeability/diffusion values on an unjointed and unbonded membrane are given in Table 2. However, see section 7.2 for details of the products use where performance to BS 8485 : 2015 is required.

Table 2 Gas resistance properties

Characteristics (unit)	A05	A08	A12
Radon diffusion coefficient ($m^{2(1)} s^{-1}$)(1)	–	$2*10^{-12}$	$5.3*10^{-12}$
Methene Gas Transmission Rate (GTR)(2)(3) ($ml \cdot m^2 \cdot day \cdot atm^{-1}$)	324	294	242

(1) Slovakian Medical University – internal method.

(2) Test method BS ISO 15015-1 : 2007.

(3) The requirement for a gas-resistant membrane under BS 8485 : 2015, Table 7 is <40 $ml \cdot m^2 \cdot day \cdot atm^{-1}$.

8 Resistance to mechanical damage

8.1 When installed, the membranes are capable of accommodating the minor movements likely to occur under normal service conditions.

8.2 Results of tests indicate that the products can accept the limited foot traffic and light loads associated with installation and maintenance.

8.3 The membrane can be damaged by sharp objects, and care should be taken particularly when the membrane is exposed during construction and back filling or screeding operations.

8.4 Provided sufficient care is taken, the membrane will not be damaged by normal foot traffic during construction.

9 Adhesion and stability

Results of tests indicate that the adhesion of the membranes to the substrate and their joints, as described in this Certificate, is satisfactory. The membranes' properties allow them, under normal service conditions, to accommodate the minor movements likely to occur in the structure in which they are incorporated.

10 Effect of temperature

The membranes are not adversely affected by the temperatures likely to occur during installation and in service.

11 Maintenance

As the products are confined and have suitable durability, maintenance is not required. However, any damage occurring during installation must be repaired in accordance with section 15 prior to backfilling.

12 Durability

When fully protected and subjected to normal service conditions:

- SikaProof A05, A08 and A012 membranes will provide an effective barrier to the transmission of water and water vapour for the life of the structure in which they are incorporated
- SikaProof A08 and A12 membranes will restrict the ingress of radon for the life of the structure in which they are incorporated.

Installation

13 General

13.1 SikaProof A Membranes must be installed in accordance with the relevant requirements of BS 8102 : 2009, BS 8000-4 : 1989, CP 102 : 1973 Section 3, this Certificate and the Certificate holder's instructions.

13.2 Buildings in areas of risk from naturally occurring or landfill gas should be designed and constructed in accordance with BRE Report BR 211 : 2015 and following the guidance of BS 8485 : 2015.

13.3 Concrete or screeded surfaces must have a smooth and uniform finish, be dry and free from loosely-adhering material, sharp protrusions, dust, oil and grease.

13.4 Vertical surfaces of brickwork, blockwork and, if necessary, masonry should be rendered to provide an even surface. Brickwork or blockwork not rendered must be flush pointed to give a smooth surface without sudden changes in level.

13.5 Installation should not be carried out during inclement weather (eg rain, fog or snow). When the temperature is below 5°C, suitable precautions against surface condensation must be taken.

14 Procedure

14.1 The pre-formed SikaProof A Edge sheet is installed at perimeters, edges, terminations and/or connections, then applied to corners and adhered using SikaProof ExTape-150 on the external side and SikaProof Tape-150 or SikaProof Tape-150A on the internal side.

14.2 The SikaProof A Membranes are laid horizontally and/or vertically. Each sheet is laid onto the self-adhesive strip of the adjacent membrane, to a minimum overlap of 90 mm, and a pressure roller is used to ensure bonding. A minimum of 5 mm of the self-adhesive strip must remain visible.

14.3 Longitudinal joints are adhered with the self-adhesive strips for the products. For transverse joints SikaProof Tape-150 (or Sika Proof Tape-150A) and SikaProof ExTape-150 should be used, with the membrane overlapping to a minimum of 50 mm. SikaProof ExTape-150 is adhered externally to the membrane side, and SikaProof Tape-150 (or SikaProof Tape-150A) to the fleece on the inside.

14.4 The reinforcement is fixed after the membrane has been applied, the concrete poured and the walls backfilled.

14.5 Special protection sheets must be used during backfilling to prevent damage to the membranes.

14.6 For all existing details, such as pipe penetrations, shaft connections, pits, pile heads, expansion joints and any other details, the Certificate holder's advice must be sought.

14.7 The installation of SikaProof A08 and SikaProof A12 membranes for gas-resistance applications may be subject to third-party independent validation in accordance with the *Ground Gas Handbook*, 2009.

Horizontal applications

14.8 Application to horizontal surfaces is made according to the procedure given in sections 14.1 to 14.7.

Vertical applications

14.9 The membranes can be laid in a horizontal or vertical direction.

14.10 From horizontal to vertical areas, the membrane sheet should overlap the starter bars by a minimum of 300 mm or overlap the slab by a minimum of 50 mm.

14.11 Joints in vertical areas should point downwards.

14.12 Temporary fixings, as advised by the Certificate holder, are used to fix the membrane.

Detailing and service penetrations

14.13 Consideration must be given to detailing and all service penetrations in tanking installations. The advice of the Certificate holder must be sought.

15 Repair

15.1 Any damage to the membrane can be sealed on the external side of the membrane with SikaProof Patch-200B.

15.2 Any repairs to the products must be done prior to the application of backfilling. The advice of the Certificate holder must be sought.

15.3 If required by the local authority, repair work on SikaProof A08 and SikaProof A12 membranes for gas-resistance applications should be confirmed by an independent validation report, as all gas membrane installation should be subject to third-party validation in accordance with the *Ground Gas Handbook*, 2009.

Technical Investigations

16 Tests

16.1 Tests were carried out to determine:

- mass per unit area and dimensions
- dimensional stability
- resistance to chisel impact at 0°C and 23°C
- tensile strength and elongation at break
- resistance to static loading
- nail tear
- impact resistance
- water vapour transmission and resistance
- watertightness on controls and following 12 weeks of heat ageing at 70°C
- flexibility at low temperature on controls and following 12 weeks of heat ageing at 70°C
- tensile strength of joints on controls and following 12 weeks of heat ageing at 70°C and 1 week of water exposure at 60°C
- peel strength from concrete
- leakage of joints.

16.2 An assessment was made of data in relation to:

- visible defects*
- dimensions and tolerance*
- resistance to impact*

- reaction to fire*
- water vapour resistance*
- tensile strength and elongation*
- flexibility at low temperature*
- shear resistance of joints*
- resistance to static loading*
- watertightness on controls and following 12 weeks of heat ageing at 70°C and 4 weeks of exposure to chemicals*.

17 Investigations

17.1 An evaluation of a site in progress was made to assess the practicability of installation.

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

Bibliography

BRE Report BR 211 : 2015 *Radon: Guidance on protective measures for new buildings*

BS 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*

BS 8102 : 2009 *Code of practice for protection of below ground structures against water from the ground*

BS 8485 : 2015 *Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings*

BS EN 13967 : 2012 *Flexible sheets for waterproofing — Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet — Definitions and characteristics*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

BS EN ISO 14001 : 2004 *Environmental management systems — Requirements with guidance for use*

BS ISO 15105-1 : 2007 *Plastics — Film and sheeting — Determination of gas — transmissions rate — Differential-pressure methods*

CP 102 : 1973 *Code of practice for protection of buildings against water from the ground*

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..

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