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Agrément Certificate
09/4668
Product Sheet 2

SIKA ROOF WATERPROOFING MEMBRANES

SIKA-TROCAL SGK ADHERED MEMBRANE

This Agrément Certificate Product Sheet⁽¹⁾ relates to Sika-Trocal SGK Adhered Membrane, a reinforced, fleece-backed PVC membrane for use as an adhered waterproofing layer on pitched, flat and curved 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 product will resist the passage of moisture to the interior of the building (see section 6).

Properties in relation to fire — the product will enable a roof to be unrestricted under Building Regulations (see section 7).

Resistance to wind uplift — the product will resist the effects of any wind suction likely to occur in practice (see section 8).

Resistance to foot traffic — the product will accept the limited foot traffic and loads associated with installation and maintenance (see section 9).

Durability — under normal service conditions the product will provide durable waterproof coverings with a service life in excess of 35 years (see section 11).



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

On behalf of the British Board of Agrément

Date of Third issue: 5 October 2015

John Albon — Head of Approvals

Claire Curtis-Thomas

Originally certified on 3 June 2009

Construction Products

Chief Executive

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, Sika-Trocal SGK Adhered Membrane, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the 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 suitable substructures the use of the product will enable a roof to be unrestricted under this Requirement. See section 7 of this Certificate.
Requirement: C2(b)	Resistance to moisture
Comment:	The product will enable a roof to meet this Requirement. See section 6.1 of this Certificate.
Regulation: 7	Materials and workmanship
Comment:	The product is acceptable. See section 11 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:	Use of the product satisfies the requirements of this Regulation. See sections 10 and 11 and the <i>Installation</i> part of this Certificate.
Regulation: 9	Building standards applicable to construction
Standard: 2.8	Spread from neighbouring buildings
Comment:	On suitable non-combustible substructures the use of the product can be regarded as having a low vulnerability under clause 2.8.1 ⁽¹⁾⁽²⁾ of this Standard. See section 7 of this Certificate.
Standard: 3.10	Precipitation
Comment:	The product, including joints, will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.7 ⁽¹⁾⁽²⁾ . See section 6.1 of this Certificate.
Standard: 7.1(a)	Statement of sustainability
Comment:	The product can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation: 12	Building standards applicable to conversions
Comment:	All comments given for this product under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



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

Regulation: 23(a)(i)(iii)(b)(i)	Fitness of materials and workmanship
Comment:	The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation: 28(b)	Resistance to moisture and weather
Comment:	The product, including joints, will enable a roof to satisfy the requirements of this Regulation. See section 6.1 of this Certificate.
Regulation: 36(b)	External fire spread
Comment:	On suitable substructures the use of the product will be unrestricted under the requirements of this Regulation. See section 7 of this Certificate.

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, Principal Designer/CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See sections: 1 *Description* (1.1), 3 *Delivery and site handling* (3.2) of this Certificate.

Additional Information

NHBC Standards 2014

NHBC accepts the use of Sika-Trocal SGK Adhered Membrane, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs and balconies* and 7.2 *Pitched roofs*.

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 13956 : 2012. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Registered Contractors Scheme⁽¹⁾

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

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

Technical Specification

1 Description

1.1 Sika-Trocal SGK Adhered Membrane is a glassfibre-reinforced PVC roof waterproofing membrane with a polyester fleece backing, and is manufactured to the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Sika-Trocal SGK
Thickness (mm)	1.5
Thickness including fleece (mm)	2.4
Mass per unit area* (g·m ⁻²)	2.1
Roll length (m)	15
Roll width (m)	2.0
Colour	
upper	light grey, slate grey
lower	medium grey
Tensile strength* (N/50 mm)	
longitudinal	≥ 650
transverse	≥ 600
Elongation* (%)	
longitudinal	≥ 50
transverse	≥ 50
Tear resistance* (N)	
longitudinal	150
transverse	150
Watertightness*	pass
Low temperature foldability* (°C)	≤ -25

1.2 Ancillary items necessary for installation of the product and included in this assessment are:

- Sika C300 Polyurethane Adhesive — for bonding the membrane to the surface of the substrate
- Sika-Trocal S and SG — sheets for use for detailing work (eg edges and upstands), as recommended by the Certificate holder.

1.3 Other items which may be used with the product, but which are outside the scope of this Certificate, are:

- Sika-Trocal HD WBP — a layer of embossed plasticised PVC, for welding to Sika-Trocal SGK as a slip-resistant walkway to clearly define the walkway routes, available in dark grey
- Sika-Trocal corner pieces — S membrane preformed corner pieces, for ensuring the waterproofing integrity of the corner detail
- Sika-Trocal metal sheets — 0.6 mm thick galvanized steel sheet, the upper side coated with a 0.8 mm thick layer of plasticised PVC, coloured light grey and slate grey, used to produce profiles for perimeter flashings, connections and fixings
- Sika-Trocal S-Vap 500E vapour check — a polyethylene sheet offering resistance to the passage of water vapour into the roof construction from below
- Sika-Trocal S-Vap 5000E SA — a self-adhesive vapour control layer for use on substrates
- Sika-Trocal C200 Adhesive — polyurethane-based, humidity-hardening, one-pack adhesive for use with insulation boards
- A Décor Profile SE — PVC profile to imitate a traditional standing-seam metal roof.

2 Manufacture

2.1 Sika-Trocal SGK is manufactured by laminating two calendered plasticised PVC sheets sandwiching a plastisol saturated glassfibre restraint matrix. The polyester fleece is thermally bonded to the underside, and the sheet is cut to width and reeled onto cardboard cores.

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 Sika Trocal GmbH Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by SQS (Certificate 31982).

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

3 Delivery and site handling

3.1 The product is delivered to site in rolls on pallets either with a corrugated cardboard outer or wrapped in polythene film. The wrapper bears the Certificate holder's name, product identification, roll width and length, colour and the BBA logo incorporating the number of this Certificate.

3.2 Rolls should be stored horizontally under cover and on a clean, level surface in a dry environment. Pallets may be stacked to a maximum of three high.

3.3 The ancillary items should be stored in a similar environment.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Sika-Trocal SGK Adhered Membrane.

Design Considerations

4 General

4.1 Sika-Trocal SGK Adhered Membrane is satisfactory for use as adhered roof waterproofing on pitched, flat and curved roofs with limited access.

4.2 Sika-Trocal SGK can be applied to vertical surfaces up to 1 m. For other applications, the Certificate holder's advice regarding the fire performance should be sought.

4.3 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, special precautions, such as additional protection to the membrane, must be taken.

4.4 Flat roofs are defined for the purpose of this Certificate as those having a minimum finished fall of 1:80. 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. Pitched roofs are defined as those having falls in excess of 1:6.

4.5 Decks to which the product is to be applied must comply with the relevant requirements of BS 6229 : 2003, BS 8217 : 2005 and, where appropriate, *NHBC Standards 2014*, Chapter 7.1 *Flat roofs and balconies* and Chapter 7.2 *Pitched roofs*.


4.6 Insulation materials used in conjunction with the product must meet the requirements stated by the Certificate holder and must be one of the following:

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

5 Practicability of installation

The product must only be installed by installers who have been trained and approved by the Certificate holder. The records relating to this will be audited by the BBA as part of its programme of surveillance on the Certificate.

6 Weathertightness

 6.1 Results of tests confirm that the membrane and joints in the membrane, when completely sealed and consolidated, will adequately resist the passage of moisture to the inside of the building and so meet the requirements of the national Building Regulations.

6.2 The product is impervious to water and, when used in the system described, will achieve a weathertight roof capable of accepting minor structural movement without damage.

7 Properties in relation to fire



7.1 The following systems will be unrestricted under the national Building Regulations:

- one layer of 1.5 mm Sika-Trocal SGK membrane, fully bonded to 145 mm thick glassfibre fabric faced high-density mineral fibre insulation board using Sika-Trocal C300 Polyurethane adhesive, and a layer of bituminous felt as a vapour control layer adhered with liquid bitumen to 18 mm thick exterior grade plywood
- one layer of 1.5 mm Sika-Trocal SGK membrane, fully bonded to 100 mm mineral faced PIR insulation board using Sika-Trocal C300 Polyurethane adhesive, and a layer of self-adhesive bituminous felt as a vapour control layer adhered to 18 mm thick exterior grade plywood.

7.2 The designation of other specifications (eg when used on combustible substrates) should be confirmed by:

England and Wales — test or assessment in accordance with Approved Document B, Appendix A, Clause A1

Scotland — test to conform to Mandatory Standard 2.8, clause 2.8.1⁽¹⁾⁽²⁾

(1) Technical Handbook (Domestic)

(2) Technical Handbook (Non-Domestic)

Northern Ireland — test or assessment by a UKAS-accredited laboratory or an independent consultant with appropriate experience.

8 Resistance to wind uplift

8.1 The adhesion of an adhered system to a substrate will normally be limited by the cohesive strength of the substrate. On decking or bituminous felt, the adhesion of the membrane using Sika C300 adhesive is sufficient to resist the effect of wind suction, thermal cycling or minor structural movements occurring in practice.

8.2 Where the product is adhered to insulation boards, the resistance to wind uplift will be dependent on the cohesive strength of the insulation and the method by which it is secured to the roof deck. This should be taken into account when the insulation material is selected.

9 Resistance to foot traffic

Results of tests indicate that the product can withstand, without damage, the limited foot traffic and light concentrated loads associated with installation and maintenance. Where traffic in excess of this is envisaged, such as for maintenance of roof-mounted plant or for regular access to plant rooms, walkways must be provided (eg using Sika-Trocal HD WBP), as recommended by the Certificate holder. Reasonable care should be taken, however, to avoid puncture by sharp objects or concentrated loads.

10 Maintenance



Roofs covered with the product should be the subject of annual inspections, as is good practice with all roof waterproofing systems, to ensure continued security and performance.

11 Durability



Sika-Trocal SGK Adhered Membrane has been used in the United Kingdom since 1972. Accelerated weathering tests and performance in use confirm that satisfactory retention of physical properties is achieved. The product will have a life in excess of 35 years.

12 Reuse and recyclability

The product comprises polyvinyl chloride, polyester fleece and glass, which can be recycled.

Installation

13 General

13.1 Installation of Sika-Trocal SGK must be carried out by trained and licensed installers in accordance with the Certificate holder's instructions and the relevant clauses of BS 8000-0 : 2014 and BS 8000-4 : 1989.

13.2 The product may be laid in conditions normal to roofing work and should not be laid in wet or damp weather, nor at temperatures below 5°C, unless suitable precautions are taken.

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

13.4 The membrane is mechanically fastened at the perimeters by standard details, and any joints are lapped and solvent or heat welded, in accordance with the Certificate holder's instructions.

14 Procedure

14.1 The substrate will not require priming, with the exception of some existing bituminous surfaces and some nonstandard surfaces. In these cases, the Certificate holder's advice should be sought.

14.2 The membrane is unrolled onto the substrate and folded back for half the length of the roll, exposing the underside.

14.3 The Sika C300 Polyurethane Adhesive is applied in strips onto the substrate at a rate of 200 g·m⁻² to 300 g·m⁻² and spread evenly with a squeegee.

14.4 The surface is lightly misted with a water spray to activate the adhesive. The membrane is laid back into position and allowed to settle by its own weight.

14.5 A range of PVC laminated metal trims is available for completing edge details. These are fixed in accordance with the Certificate holder's instructions.

15 Repair

In the event of damage, repairs must be carried out in accordance with the Certificate holder's instructions. A patch of the membrane is applied, extending at least 50 mm beyond the defect. The damaged area is cleaned back to the unweathered material and the patch is hot-air or solvent welded to the roofing sheet.

Technical Investigations

16 Tests

An assessment was made of data to BS EN 13956 : 2012 in relation to:

- dimensions and tolerances
- water vapour transmission
- tensile strength and elongation
- tear resistance
- low-temperature flexibility
- resistance to impact
- resistance to static loading
- joint strength
- watertightness
- dimensional stability.

17 Investigations

17.1 A re-evaluation was made of the data and investigations on which the previous Certificate 91/2649 was based.

17.2 Existing data on the fire performance of the product were examined.

17.3 Data were examined on ageing of other Sika-Trocal membranes using the same PVC compound.

17.4 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.

17.5 Visits were made to sites in progress to assess the methods of application.

17.6 Visits were made to existing sites to assess the product's performance in use.

17.7 A survey of known users of Sika-Trocal SGK was carried out to assess the product's performance in use.

17.8 A reassessment of the *Durability* statement was made, based on visits to old existing sites and results of tests conducted on unaged and naturally-aged materials

Bibliography

BS 6229 : 2003 *Flat roofs with continuously supported coverings — Code of practice*

BS 8000-0 : 2014 *Workmanship on construction sites — Introduction and general principles*

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

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

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

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

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.