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Agrément Certificate
19/5621
Product Sheet 2

SIKA LIQUID-APPLIED WATERPROOFING SYSTEMS

SIKALASTIC 8800 PROTECTED ROOF WATERPROOFING SYSTEM

This Agrément Certificate Product Sheet(1) relates to the Sikalastic(2) 8800 Protected Roof Waterproofing System, based on a spray-applied polyurea waterproofing membrane, for use in protected flat roof specifications, including those with zero falls.

(1) Hereinafter referred to as 'Certificate'.
(2) Sikalastic 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

Weathertightness — the system will resist the passage of moisture into the interior of a building (see section 6).

Properties in relation to fire — the use of the system may enable a roof to be unrestricted under the national Building Regulations (see section 7).

Adhesion — the adhesion of the system is sufficient to resist the effects of any likely wind suction and the effects of thermal or other minor movement likely to occur in practice (see section 8).

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

Durability — under normal service conditions, the system will provide a durable roof waterproofing with a service life in excess of 25 years (see section 11).

The BBA has awarded this Certificate to the company named above for the system described herein. This system 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

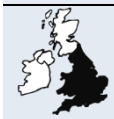
Hardy Gielser
Chief Executive Officer

Date of Second issue: 24 November 2022

Originally certificated on 14 February 2019

Regulations

In the opinion of the BBA, the Sikalastic 8800 Protected Roof Waterproofing System, 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:		The system, when used with suitable surface protection, may enable a roof to be unrestricted under this Requirement. See section 7 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The system will enable a roof to satisfy this Requirement. See section 6 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The system is acceptable. See section 11 and the *Installation* part of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)(2)**	**Durability, workmanship and fitness of materials**
Comment:		The system comprises acceptable materials and satisfies the requirements of this Regulation. See sections 10.1 and 11 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	2.8	Spread from neighbouring buildings
Comment:		The system, when used with suitable surface protection, can be regarded as having a low vulnerability and may enable a roof to be unrestricted under this Standard, with reference to clause 2.8.1(1)(2). See section 7 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system 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 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The system 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.
Regulation:	**12**	**Building standards applicable to conversions**
Comment:		All comments given for the system under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1(1)(2) and Schedule 6(1)(2).

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).

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

Regulation:	**23(1)(a) (b)(i)**	**Fitness of materials and workmanship**
Comment:		The system comprises acceptable materials and satisfies the requirements of this Regulation. See section 11 and the *Installation* part of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The system will enable a roof to satisfy the requirements of this Regulation. See section 6 of this Certificate.

Regulation:	**36(b)**	**External fire spread**
Comment:		The system, when used with suitable surface protection, may enable a roof to 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) 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: 3 *Delivery and site handling* (3.2 to 3.4) of this Certificate.

Additional Information

NHBC Standards 2022

In the opinion of the BBA, the Sikalastic 8800 Protected Roof Waterproofing System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs, terraces and balconies*.

In addition, in the opinion of the BBA, the system 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 system.

Technical Specification

1 Description

1.1 The Sikalastic 8800 Protected Roof Waterproofing System is a liquid-applied waterproofing system based on a rapid-cure, spray-applied polyurea elastomeric waterproofing membrane and a range of primers.

1.2 The system comprises:

- Sikalastic 8800 — a two-part, spray-applied polyurea based waterproofing membrane
- Sikafloor 161 — a two-part epoxy primer for use on cementitious substrates prior to the application of Sikalastic 8800 for use at air and substrate temperatures between 10 and 30°C
- Sikafloor 151 — a two-part epoxy primer for use on cementitious substrates prior to the application of Sikalastic 8800 for use at air and substrate temperatures between 10 and 30°C
- Sika Concrete Primer — a two-part, rapid curing polyurea based primer for use on cementitious substrates prior to application of Sikalastic 8800 for use at air and substrate temperatures between 5 and 30°C
- SikaCor Zinc R — a two-part epoxy-based primer for use on metal substrates prior to the application of Sikalastic 8800
- Sikalastic 810 — a two-part polyurethane adhesion promoting coating for bond bridging between coats of Sikalastic 8800
- Sika Thinner C — a solvent mixture for use with Sikalastic 810 for bond bridging between coats of Sikalastic 8800. The product can also be used as a cleaning solvent.

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

- specialist primers
- specialist sealants
- protection boards/membranes
- drainage boards/membranes
- concrete repair systems
- surface finishes.

Details of suitable products/specifications may be obtained from the Certificate holder.

2 Manufacture

2.1 The system components are manufactured by batch-blending processes.

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 systems of the manufacturers have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by SGS (Certificate CH18/1439) and SQS (Certificate H31982).

3 Delivery and site handling

3.1 The system is delivered to site in sealed containers with each component packed separately in the specified mix proportions. Each pack is labelled with the Certificate holder's name, product name, component identification, batch number, date of manufacture/expiry date and health and safety information.

3.2 The system components are available in the pack weights given in Table 1.

Table 1 Pack weights and storage life

Component	Packaging Type	Pack size	Shelf life (months)
Sikalastic 8800			
Part A	Metal drums	212 kg	12
Part B	Metal drums	191 kg	12
Sika Concrete Primer			
Part A	Metal cans	3.5 or 9.0 ℓ	12
Part B	Metal cans	1.0 or 2.5 ℓ	12
Sikafloor 161			
Part A	Metal cans or drums	23.7 or 220 kg	24
Part B	Metal cans or drums	6.3 or 177 kg	24
Sikafloor 151			
Part A	Metal cans or drums	25.5 or 255 kg	24
Part B	Metal cans or drums	4.5 or 180 kg	24
SikaCor Zinc R			
Part A	Metal cans	14.1 kg	12
Part B	Metal cans	0.9 kg	12
Sikalastic 810			
Part A	Metal cans	9.0 kg	12
Part B	Metal cans	4.5 kg	12
Sika Thinner C	Metal cans	3.0 ℓ	12

3.3 The system components should be stored in cool, dry conditions in unopened sealed containers away from chemicals and sources of ignition. When stored in accordance with the Certificate holder's instructions, the products will have a shelf life as detailed in Table 1.

3.4 The Certificate holder has taken the responsibility of classifying and labelling the system components 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 the Sikalastic 8800 Protected Roof Waterproofing System.

Design Considerations

4 General

4.1 The Sikalastic 8800 Protected Roof Waterproofing System is satisfactory for use as a fully adhered waterproofing layer on new and existing flat (including those with zero fall) protected roof specifications, eg inverted roofs, terraces, podium decks and covered walkways for pedestrian access. The system has not been assessed for use in unprotected exposed specifications.

4.2 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2018 and, where appropriate, *NHBC Standards* 2022, Chapter 7.1.

4.3 Pedestrian access roofs are defined for the purpose of this Certificate as those not subject to vehicular traffic.

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.

4.5 Zero fall roofs are defined for the purpose of this Certificate as those having a finished fall of between 0 and 1:80. Reference should also be made to the appropriate clauses of Liquid Roofing and Waterproofing Association (LRWA) Note 7 — *Specifier Guidance for Flat Roof Falls.*

4.6 Structural decks to which the system is 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.

4.7 The drainage systems for inverted roofs and zero fall roofs must be correctly designed, and the following points should be addressed:

- provision made for access for maintenance purposes
- for zero fall roofs, it is particularly important to identify the correct drainage points, to ensure that drainage is sufficient and effective
- additional guidance for inverted roof specifications is given in BBA Information Bulletin No 4 Inverted roofs — *Drainage and U value corrections.*

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

- as described in the relevant clauses of BS 6229 : 2018, or
- the subject of a current BBA Certificate and used in accordance with that Certificate.

4.9 The Certificate holder must be consulted for advice on suitable protection (eg pavers), depending on the use of the roof.

4.10 The system has been assessed for use on the following substrates:

- concrete primed with Sika Concrete Primer, Sikafloor 151 or Sikafloor 161
- steel primed with SikaCor Zinc R.

4.11 Detailing requirements, eg at service penetrations, movement joints, must be evaluated on a case-by-case basis. The Certificate holder has standard details or can advise of suitable details for a particular application.

4.12 The NHBC requires that the roof membranes, once installed, be inspected in accordance with *NHBC Standards* 2022, Chapter 7.1, Clause 7.1.11, including the use of an appropriate integrity test, where required. Any damage to the membrane is repaired in accordance with section 14 of this Certificate and reinspected.

5 Practicability of installation

The system is installed by installers approved by the Certificate holder.

6 Weathertightness

The system will adequately resist the passage of moisture into the interior of a building and will enable a roof to comply with the requirements of the national Building Regulations.

7 Properties in relation to fire

7.1 The system, when used in protected or inverted roof specifications, including an inorganic covering listed in the Annex of Commission Decision 2000/553/EC, will enable a roof to be unrestricted, with respect to the proximity of relevant boundaries, under the national Building Regulations.

7.2 The designation and permissible areas of use of other specifications will be confirmed by reference to the requirements of the documents supporting the national Building Regulations.

8 Adhesion

The adhesion of the system to the substrates given in section 4.10 is sufficient to resist the effects of wind suction, thermal cycling or other minor structural movements likely to occur in service. Acceptable adhesion to other substrates must be confirmed by test.

9 Resistance to mechanical damage

9.1 The system can accept, without damage, the foot traffic and light concentrated loads associated with installation and maintenance. Care should be taken to avoid puncture by sharp objects or concentrated loads.

9.2 The system achieved a result of I_4 with respect to dynamic indentation and L_4 with respect to static indentation when tested in accordance with EOTA TR006 and EOTA TR007, respectively.

9.3 The system is capable of accepting minor structural movement while remaining weathertight.

10 Maintenance

10.1 The roof system must be the subject of six-monthly inspections and maintenance in accordance with the recommendations of BS 6229 : 2018, Chapter 7 and the manufacturer's own maintenance requirements, where relevant, to ensure continued satisfactory performance.

10.2 Any damage should be repaired in accordance with section 14 and the Certificate holder's instruction.

11 Durability

Under normal service conditions, the system will function effectively as a roof waterproofing for a period in excess of 25 years.

12 General

12.1 Installation of the Sikalastic 8800 Protected Waterproofing System must be carried out in accordance with the relevant requirements of BS 8000-0 : 2014, BS 8000-4 : 1989, BS 6229 : 2018, the Certificate holder's instructions and this Certificate.

12.2 Concrete structures should be designed and built in accordance with BS EN 1992-1-1 : 2004 and its UK National Annex.

12.3 Substrates to which the system is to be applied must be sound, clean, free from laitance and corrosion, dry and free from ice and frost.

12.4 Concrete surfaces must be free from sharp projections such as nail heads and concrete nibs. Power floated concrete must be shot blasted or mechanically abraded to help ensure the primer can penetrate into the surface. The Certificate holder's advice must be sought for the suitability of the substrate to receive the system and for suitable cleaning procedures, including the use of a proprietary surface cleaner/fungicidal wash where required.

12.5 Steel substrates should be cleaned of all corrosion by shot-blasting or other suitable method.

12.6 Defects such as large cracks must be repaired prior to application of the system in accordance with the Certificate holder's instructions.

12.7 A minimum curing period of 28 days is normally required before new concrete surfaces are primed. The Certificate holder must be consulted for advice if priming is to be carried out before this period. The Certificate holder's instructions must be observed with respect to maximum moisture content levels in the substrate.

12.8 The substrate temperatures must exceed the dew-point by more than 3°C during application and hardening. The Certificate holder's product data sheets must be followed for minimum and maximum application temperatures.

12.9 Previously coated areas must be checked for integrity and adequate adhesion to the substrate. Adhesion checks must be carried out to ensure that the system is compatible with the existing surfaces. The Certificate holder must be consulted for details of suitable test methods and requirements before use. If the substrate requires preparing after bond testing the appropriate methods, such as high pressure washing, captive shot blasting or other mechanical abrasive methods, can be used. Advice must be sought from the Certificate holder.

12.10 To assess the suitability of a substrate to receive the system, bond tests should be carried out generally in accordance with BS EN 1542 : 1999, in consultation with the Certificate holder. If bonding problems occur, advice should be sought from the Certificate holder.

12.11 The system build-up specification is detailed in Table 2.

Table 2 Sikalastic 8800 Protected Roof Waterproofing System – build-up specification

Product	Application rate ($kg \cdot m^{-2}$)
Primer	
Sika Concrete Primer	0.35(1)
Sikafloor 161 or Sikafloor 151	0.35(1)
SikaCor Zinc R	0.250 – 0.335
Sikalastic 8800 waterproofing membrane	≥ 2.1(2)

(1) Typical coverage rate per coat. Actual coverage will depend on surface roughness and porosity.
(2) To achieve a dry film thickness of ≥ 2.0 mm.

12.12 Following installation, the treated surface must be tested using a non-destructive test, eg holiday test, before the system is enclosed. Damaged areas must be repaired in accordance with section 14.

13 Procedure

Priming

13.1 Sika Concrete Primer, Sikafloor 161, Sikafloor 151 and SikaCor Zinc R must be prepared and mixed in accordance with the Certificate holders instructions using a suitable slow speed drill fitted with a suitable mixing paddle.

13.2 Sika Concrete Primer, Sikafloor 161 and Sikafloor 151 are applied to the prepared concrete substrate using a short-piled roller or brush. Sikafloor 161 and Sikafloor 151 can also be applied by squeegee.

13.3 SikaCor Zinc R is best applied using suitable spray equipment.

13.4 If necessary, a second coat of primer should be applied to ensure the minimum application rate is achieved and that a continuous pore free primer film is achieved.

13.5 The primer coat must be allowed to dry prior to overcoating with Sikalastic 8800 waterproofing membrane ensuring that any minimum/maximum dry times are observed in accordance with the Certificate holder's instructions.

Sikalastic 8800 waterproofing membrane

13.6 Sikalastic 8800 waterproofing membrane is applied using suitable air driven or electrical plural component heated spray equipment to achieve a minimum dry film thickness of 2 mm.

13.7 Prior to spraying, the Part B component must be thoroughly stirred using a suitable drum stirrer until a homogenous colour is achieved.

13.8 Both components must be heated and maintained at between 65 and 70°C during spraying.

13.9 The product temperature, accuracy of the dosage and adequacy of the mixing must be monitored regularly throughout the process by the installer.

13.10 At day joints, a 100 mm overlap of new material over clean existing membrane should be ensured. A light coat of Sikalastic 810, mixed in accordance with the Certificate holder's instructions, is applied at a rate of approximately 0.05 $kg \cdot m^{-2}$ to the clean existing Sikalastic 8800 membrane to act as a bond bridge.

14 Repair

14.1 Any damage to the system must be repaired as soon as possible to ensure that the integrity of the waterproofing is maintained.

14.2 Minor damage to the system can be repaired by removing loose material by abrading the surface of the affected area and surrounding installation to allow an overlap of 100 mm onto sound well bonded coating. A light coat of Sikalastic 810, mixed in accordance with the Certificate holder's instructions, is applied at a rate of approximately 0.05 $kg \cdot m^{-2}$ to the clean and sound existing Sikalastic 8800 membrane to act as a bond bridge. The system is then installed to the original specification as described in section 13.

14.3 In situations where maintenance or repair of any of the components in the roof structure are necessary, the Certificate holder should be consulted for advice on an appropriate repair method.

15 Tests

Tests were carried out and the results assessed to determine:

- delamination strength
- resistance to dynamic impact
- resistance to static indentation
- resistance to fatigue cycling
- tensile characteristics
- water absorption
- effect of long term water exposure (for 180 days at 23°C)
- effect of short term exposure to UV-A (20 $MJ \cdot m^{-2}$)
- effect of heat ageing (for 100 days at 80°C)
- characterisation by IR
- characterisation by thermogravimetric analysis.

16 Investigations

16.1 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.

16.2 Test reports from independent test laboratories were assessed to establish:

- dry film thickness by consumption
- watertightness (2.5 bar water pressure maintained for 72 hours)
- water vapour transmission rate
- crack bridging ability.

Bibliography

BS 6229 : 2018 *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 construction sites — Code of practice for waterproofing*

BS EN 1062-7 : 2004 *Paints and varnishes — Coating materials and coating systems for exterior masonry and concrete — Determination of crack bridging properties*

BS EN 1542 : 1999 *Products and systems for the protection and repair of concrete structures — Test methods — Measurement of bond strength by pull-off*

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 *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 1992-1-1 : 2004 + A1 : 2014 *Eurocode 2 — Design of concrete structures — General rules and rules for buildings*
NA + A2 : 14 to BS EN 1992-1-1 : 2004 + A1 : 2014 UK National Annex to *Eurocode 2 — Design of concrete structures — General rules and rules for buildings*

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

ISO 1923 : 1981 *Cellular plastics and rubbers — Determination of linear dimension*

17 Conditions

17.1 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.

17.2 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.

17.3 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.

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

17.5 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.

17.6 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.