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Agrément Certificate

21/5865

Product Sheet 1

SIKALASTIC ROOFPRO ONE SOLVENT-FREE ROOF WATERPROOFING SYSTEMS

SIKALASTIC D-20 ROOFPRO ONE

This Agrément Certificate Product Sheet⁽¹⁾ relates to Sikalastic D-20 RoofPro One⁽²⁾, consisting of a silane-terminated polyurethane, for use as a polyester-reinforced waterproofing on flat roofs with limited access.

(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 building (see section 6).

Properties in relation to fire — the system can 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 limited foot traffic and loads associated with installation and maintenance (see section 9).

Durability — under normal service conditions, the system will provide a durable waterproof covering with a service life of at least 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

Date of First issue: 31 March 2021

Hardy Giesler
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 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.

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Regulations

In the opinion of the BBA, Sikalastic D-20 RoofPro One, 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(1)	External fire spread
Comment:		The system, in some circumstances, is restricted by this Requirement. See section 7.3 of this Certificate.
Requirement:	B4(2)	External fire spread
Comment:		On suitable substructures, the use of the system can enable a roof to be unrestricted under this Requirement. See sections 7.1 and 7.2 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The system can 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 <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 system satisfies the requirements of this Regulation. See sections 10.1 and 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.6	Spread to neighbouring buildings
Comment:		The system is restricted under clause 2.6.4 ⁽¹⁾⁽²⁾ of this Standard in some circumstances. See section 7.4 of this Certificate.
Standard:	2.8	Spread from neighbouring buildings
Comment:		The system, when applied to a non-combustible substrate, can be regarded as having low vulnerability under clause 2.8.1 ⁽¹⁾⁽²⁾ of this Standard. See sections 7.1 and 7.2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The use of 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 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:		Comments in relation to the system 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)(b)(i)	Fitness of materials and workmanship
Comment:		The system is acceptable. See section 11 and the <i>Installation</i> part of this Certificate
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The use of the system can enable a roof to satisfy the requirements of this Regulation. See section 6 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		On suitable substructures, the use of the system can enable a roof to be unrestricted under the requirements of this Regulation. See sections 7.1 and 7.2 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: *3 Delivery and site handling* of this Certificate.

Additional Information

NHBC Standards 2021

In the opinion of the BBA, Sikalastic D-20 RoofPro One, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards, Part 7 Roofs, Chapter 7.1 Flat roofs, terraces and balconies*.

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

Technical Specification

1 Description

1.1 Sikalastic D-20 RoofPro One consists of the following components:

- Sikalastic D-20 RoofPro One — a one-part, solvent-free, isocyanate-free, moisture-triggered, silane terminated polyurethane
- Sikafleece 120 — a needle-punched polyester reinforcement
- Sika Bonding Primer — a two-part primer for the preparation of porous substrates
- Sikalastic Metal Primer — a two-part primer for the preparation of metal substrates.

1.2 The characteristics of Sikalastic D-20 RoofPro One are given in Table 1.

Table 1 Characteristics

Characteristics (unit)	Value
density at +20°C (kg·ℓ ⁻¹)	1.35
solids content by volume (%)	97
solids content by weight (%)	98
colours	grey

1.3 A proprietary carrier membrane is used over substrates with joints, such as insulation boards or plywood decking, and beneath the system. Contact the Certificate holder's Technical Services for further advice.

2 Manufacture

2.1 Sikalastic D-20 RoofPro One and primers are manufactured by a batch-blending process.

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 Liquid Plastics has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 and BS EN ISO 14001 : 2004 by BSI (Certificates FM 12504 and EMS 588023 respectively).

3 Delivery and site handling

3.1 Sikalastic D-20 RoofPro One is delivered to site in 5 (6.75 kg) or 15 litre (20.25 kg) tins bearing the product's name, batch number and the BBA logo incorporating the number of this Certificate.

3.2 Sikalastic D-20 RoofPro One should be stored in a dry, shaded area, above freezing point and away from ignition sources. Storage temperatures of between greater than 0 and 25°C will give the product a shelf-life of 12 months; at higher temperatures, the shelf-life will reduce progressively.

3.3 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 Sheets.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Sikalastic D-20 RoofPro One.

Design Considerations

4 General

4.1 Sikalastic D-20 RoofPro One is satisfactory for use as a waterproofing system on flat and pitched roofs with limited access on:

- concrete (primed and unprimed)
- asphalt (primed)
- bituminous roofing membranes, including mineral surfaced
- non-mineralised bitumen roofing membranes on plywood
- galvanized steel (primed)
- liquid-applied bituminous roof coatings
- aluminium paint
- polyisocyanurate (PIR) foam insulation boards in conjunction with a Sika approved carrier membrane
- existing polyurethane coated roofs.

4.2 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2018, BS 8217 : 2005 and, where appropriate, NHBC Standards 2021, Chapter 7.1.

4.3 The liquid components must not be applied directly to, nor come into contact with, polystyrene insulation products.

4.4 Limited access roofs are defined for the purposes 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.

4.5 Flat roofs are defined for the purpose of this Certificate as those having a minimum finished fall of 1:80.

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

4.7 When designing flat roofs, 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.

4.8 The NHBC requires that the roof membranes, once installed, be inspected in accordance with of NHBC Standards 2021, Chapter 7.1, Clause 7.1.12, including the use of an appropriate integrity test, where required. Any damage to the membrane is repaired in accordance with section 15 of this Certificate and reinspected.

5 Practicability of installation

Installation of the system must be carried out only by specialist roofing contractors trained and approved by the Certificate holder.

6 Weathertightness



The system will adequately resist the passage of moisture to the inside of the building and so satisfy the relevant requirements of the national Building Regulations.

7 Properties in relation to fire



7.1 When tested to DD CEN/TS 1187 : 2012, and classified in accordance with BS EN 13501-5 : 2005:

- a system comprising a primed 12 mm plywood substrate, a layer of S-Vap 7000E DP⁽¹⁾ vapour control layer, a 25 mm thick Decotherm⁽¹⁾ polyisocyanurate board bonded with a polyurethane adhesive, a coating of Sika Primer 610⁽¹⁾, a layer of S-Vap 7000E DP⁽¹⁾ acting as a carrier membrane, a base coat of Sikalastic D-20 RoofPro One at an application rate of 1.3 $\ell\cdot\text{m}^{-2}$, a layer of Sikafleece 120, and a top coat of Sikalastic D-20 RoofPro One at an application rate of 0.7 $\ell\cdot\text{m}^{-2}$ achieved a B_{ROOF}(t4) classification
- a system comprising a 9 mm calcium silicate board, a base coat of Sikalastic D-20 RoofPro One at an application rate of 1.3 $\ell\cdot\text{m}^{-2}$ and a top coat of Sikalastic D-20 RoofPro One at an application rate of 0.7 $\ell\cdot\text{m}^{-2}$ achieved a B_{ROOF}(t4) classification.

(1) Outside the scope of this Certificate.

7.2 The designation of other specifications should be confirmed by reference to the requirements of the documents supporting the national Building Regulations.



7.3 The system, when used in pitches of greater than 70°, excluding upstands, should not be used on buildings in England and Wales that have a storey at least 18 m above ground level and which contain: one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools.



7.4 The system, when used in pitches of greater than 70°, excluding upstands, should not be used on buildings in Scotland that have a storey at least 11 m above ground level.

8 Adhesion

The adhesion of the system to the substrates indicated in section 4.1 is sufficient to resist the effects of any wind suction, elevated temperatures, thermal shock or minor movement likely to occur in practice.

9 Resistance to mechanical damage

9.1 The system can accept, without damage, the limited foot traffic and light concentrated loads associated with installation and maintenance. However, reasonable care should be taken to avoid puncture by sharp objects or concentrated loads (see Table 2).

<i>Table 2 Dynamic and static indentation</i>			
Test	Result	Method	
Dynamic indentation			
unaged			
hard substrate ⁽¹⁾ at 20°C	I ₃	EOTA TR006	
hard substrate ⁽¹⁾ at -30°C	I ₄		
soft substrate ⁽²⁾ at 20°C	I ₃		
heat aged ⁽³⁾			
hard substrate ⁽¹⁾ at -30°C	I ₃		
UV aged ⁽⁴⁾			
hard substrate ⁽¹⁾ at -10°C	I ₄		
low temperature cure (2°C):			
hard substrate ⁽¹⁾ at 20°C	I ₄		
high temperature cure (40°):			
hard substrate ⁽¹⁾ at 20°C	I ₄		
Static indentation			
unaged			
hard substrate ⁽¹⁾ at 23°C	L ₄	EOTA TR007	
hard substrate ⁽¹⁾ at 90°C	L ₄		
soft substrate ⁽²⁾ at 23°C	L ₃		
water exposure ⁽⁵⁾			
hard substrate at 90°C ⁽¹⁾	L ₄		
(1) Steel substrate.			
(2) Carrier membrane on PIR insulation.			
(3) Heat aged at 80°C for 200 days.			
(4) UV aged at 60°C for an exposure of 1000 MJ·m ⁻² .			
(5) Water exposure at 60°C for 180 days.			

9.2 The system is impervious to water and, when used as described, will give a weathertight roofing capable of accepting minor movement without damage.

10 Maintenance



10.1 The system should be the subject of six monthly inspections and maintenance in accordance with BS 6229 : 2018, Chapter 7, to ensure continued satisfactory performance.

10.2 Where damage has occurred, it should be repaired in accordance with section 15 and the Certificate holder's instructions.

11 Durability



When installed, Sikalastic D-20 RoofPro One, will achieve an initial life expectancy of at least 25 years.

12 General

12.1 Installation of the system must be carried out in accordance with the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989, Liquid Roofing and Waterproofing Association (LRWA) Note 7 – Specifier Guidance for Flat Roof Falls, the Certificate holder's instructions and this Certificate. Installation must be carried out only by specialist roofing contractors trained and approved by the Certificate holder.

12.2 The system must be at a temperature of, or greater than, 10°C for airless spray applications. All components must be applied when the air and substrate temperatures are greater than 5°C. Special precautions may be necessary when temperatures exceed 40°C, as shown in the Certificate holder's Technical Data Sheets.

12.3 Detailing (eg upstands) is carried out in accordance with the Certificate holder's instructions.

13 Site and surface preparation

13.1 Substrates on which the system is to be applied must be properly prepared in accordance with the Certificate holder's instructions.

13.2 Adhesion to substrates will depend on the condition and cleanness of the substrate. Substrates must be visibly dry, sound and free from loose materials or contamination (eg moss or algae).

13.3 The surface must be prepared to remove loose or flaking materials, but the substrate must be visibly dry before application of the system.

13.4 Damaged areas of the substrate (eg blistered bitumen) must be removed, replaced or repaired. Substrate defects (eg shallow-bottomed cracks and indentations) must be filled. The Certificate holder can advise on suitable filling materials.

13.5 Deck surfaces must be free from sharp projections, such as concrete nibs.

13.6 Gutters and outlets must be checked to ensure that they are, and remain, clear of all debris.

13.7 All points of potential weakness such as splits, cracks, joints and crazed surfaces must be additionally reinforced in accordance with the Certificate holder's instructions prior to application of the system.

13.8 Priming, if required, is with the appropriate primer in accordance with the Certificate holder's recommended coverage rates.

14 Application

14.1 Application can be by brush, roller or spray. Brush application is normally used only for small roof areas and for embedding the Sikafleece 120 reinforcement into the waterproofing.

14.2 Prior to application, checks must be made to ensure that the substrate is dry (ie free from rainwater, surface condensation and frost) and that the prevailing weather and site conditions are correct. The following normal limitations apply:

- application must not take place when the relative humidity is in excess of 95%, or in fog. The temperature/humidity must be such that there is no risk of surface condensation occurring before or during application
- the primer, where used, must be cured
- the wind speed must be such that it does not interfere with the application or cause overspray. No attempt to spray should be made if the wind speed exceeds $6.7 \text{ m}\cdot\text{s}^{-1}$ (15 mph), unless precautions such as the use of wind barriers are taken.

14.3 Only areas that can be sprayed to the full thickness before weather changes occur should be attempted.

14.4 The system is applied at the coverage rate for a smooth texture substrate given below. The advice of the Certificate holder on coverage rates for intermediate, rough, porous and undulating substrates must be sought. Sikafleece 120 is embedded in the first coat while the membrane is still wet. Once the first coat is partially cured the second coat is applied:

base coat	1.3 $\ell \cdot m^{-2}$
reinforcement	Sikafleece 120
top coat	0.7 $\ell \cdot m^{-2}$
finished thickness	2.1 to 2.3 mm.

14.5 Random tests are carried out on the finished coating surface by cutting out small areas to measure finished cured thickness. Test areas must be repaired after the sample is taken.

15 Repair

The repair of minor damage to the system can be achieved effectively by cleaning back to the unweathered material and recoating the damaged area with the membrane at the application rates stated in section 14.4.

Technical Investigations

16 Tests

16.1 Existing test data were assessed to determine:

- water vapour transmission
- watertightness
- tensile strength and elongation
- delamination strength on
 - concrete
 - galvanized steel
 - Sikalastic D-20 RoofPro One
- dynamic indentation
- static indentation
- resistance to fatigue movement
- crack bridging
- low service temperature properties
- high service temperature properties
- effect of temperature on cure
- resistance to heat ageing
- resistance to UV ageing
- resistance to water ageing
- variation in application temperature.

16.2 Identification tests were carried on the system components.

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 external fire performance and reaction to fire were evaluated.

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 13501-5 : 2005 + A1 : 2009 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*

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

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

DD CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*

EOTA TR006 : 2004 *Determination of the resistance to dynamic indentation*

EOTA TR007 *Determination of the resistance to static indentation*

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.