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BBA APPROVAL INSPECTION TESTING CERTIFICATION
TECHNICAL APPROVALS FOR CONSTRUCTION

Agrément Certificate
14/5158
Product Sheet 1

DECOTHANE ULTRA LIQUID-APPLIED ROOF WATERPROOFING SYSTEMS

DECOTHANE ULTRA 15 ROOF WATERPROOFING SYSTEM

This Agrément Certificate Product Sheet(1) relates to the Decothane Ultra 15 Roof Waterproofing System, a moisture-activated, glassfibre-reinforced aliphatic polyurethane membrane for use on new and existing flat and pitched limited access roofs.

(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 system will resist the passage of moisture into the building (see section 6).

Properties in relation to fire — tests indicate that the system will enable a roof to be unrestricted under 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 foot traffic — 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 10 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: 16 October 2014

Simon Wroe
Head of Approvals — Materials

Claire Curtis-Thomas
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, the Decothane Ultra 15 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:		Test data indicate that on suitable substructures the use of the system will 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:		Tests indicate that the system meets this Requirement. See section 6.1 of this Certificate
Regulation:	7	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:		Use of the system 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:		Test data indicate that 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:		Tests indicate that 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 6.1 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:		All comments given for this 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

Regulation:	23(a)(b)(i)	Fitness of materials and workmanship
Comment:		The system is acceptable. See section 11 and the *Installation* part of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		Tests indicate that the use of the system 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:		Test data indicate that on suitable substructures the use of the system will 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 2007

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

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

See sections: 3 *Delivery and site handling* (3.2 and 3.3) and 13 *Precautions* of this Certificate.

Additional Information

NHBC Standards 2014

NHBC accepts the use of the Decothane Ultra 15 Roof Waterproofing System, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.1 *Flat Roofs and balconies*.

CE marking

The Certificate holder has taken the responsibility of CE marking the system in accordance with European Technical Assessment 14/0331 issued by the BBA under ETAG 005 : 2005, Parts 1 and 6. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Registered office

The registered office of the Certificate holder is Sika Ltd, Watchmead, Welwyn Garden City, Hertfordshire, AL7 1BQ (registered in England under company number 226822).

Technical Specification

1 Description

1.1 The Decothane Ultra 15 Roof Waterproofing System has a finished thickness of 1.5 mm, and consists of the following components:

- Decothane Ultra — a single-component, liquid-applied, moisture-triggered, aliphatic polyurethane
- Quick Cure Primer — a primer for concrete substrates
- Metal Primer — a two-part primer for the treatment of previously untreated metal surfaces and for spot priming of areas of corroded metal after preparation
- Sika Reemat Premium reinforcing mat — a non-woven glassfibre reinforcing mat which is embedded in the urethane while still wet, and available for use in strips to cover individual cracks, joints or details
- Carrier Membrane SA — a self-adhesive membrane for fully bonding over substrates with open joints, such as insulation boards, as a supporting layer
- Skid-Inhibiting Grit — to provide a non-slip finish to the final coat.

1.2 The membranes are available in standard colours of Slate Grey, Shale Grey, Cloud Grey and White.

1.3 The liquid-applied components, at 20°C/52% RH, will be touch-dry in 4 to 6 hours and through-cured in 12 to 18 hours.

1.4 The levels of use categories in accordance with ETAG 005 : 2000 from ETA 14/0331 are:

External fire performance	B_{ROOF}(t1)*, B_{ROOF}(t4)*
Reaction to fire	Euroclass E*
Categorisation by working life	W2* (10 years)
Categorisation by climatic zone	M* (moderate) and S*(severe)
Categorisation by imposed loads	
most compressible substrate	P2*
least compressible substrate	P4*
Categorisation by roof slope	S1* (<5%) to S4* (>30%)
Categorisation by surface temperature	
lowest	TL3* (–20°C)
highest	TH4* (90°C)
Resistance to wind loads	>50 kPa*
Statement on dangerous substances[1]	none contained.

(1) Dangerous substances as listed in the European Commission database.

2 Manufacture

2.1 The liquid components of the systems 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 : 2008 and BS EN ISO 14001 : 2004 by BSI (Certificates FM 588020 and EMS 588023 respectively).

3 Delivery and site handling

3.1 The Decothane Ultra components are delivered to site in 15 litre tins bearing the product's name, batch number and the BBA logo incorporating the number of this Certificate.

3.2 The Decothane Ultra components and primers should be stored in a dry, shaded area, above freezing point and away from ignition sources. Storage temperatures of between 10°C and 25°C will give the product a shelf-life of 9 months; at higher temperatures the shelf-life will reduce progressively. Once opened, tins should be used within two or three days.

3.3 The Decothane Ultra components and primers are all classified under *The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009* (CHIP4)/*Classification, Labelling and Packaging of Substances and Mixtures (CLP Regulation) 2009* and bear the appropriate hazard warning label. The flashpoints and hazard warning label classifications are given in Table 1.

Table 1 Flashpoints and hazard classification

Material	Flashpoint (°C)	Classification
Decothane Ultra	150	Harmful, Dangerous for the environment
Sika Concrete Primer	non-flammable	no classification
Metal Primer (Part A)	43	Irritant, Dangerous for the environment
Metal Primer (Part B)	32	Corrosive, Dangerous for the environment

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Decothane Ultra 15 Roof Waterproofing System.

Design Considerations

4 General

4.1 The Decothane Ultra 15 Roof Waterproofing System is satisfactory for use as a waterproofing layer on new and existing flat and pitched limited access roofs.

4.2 The system is suitable for use on the following substrates:

- concrete (primed and unprimed)
- bituminous roofing felt, including mineral surfaced
- single-ply membranes including PVC, TPO and EPDM (the Certificate holder can recommend an appropriate primer)
- metal
- Carrier Membrane SA
- existing coatings/roof paints
- timber in conjunction with Carrier Membrane SA
- polyisocyanurate (PIR) foam insulation boards in conjunction with Carrier Membrane SA.

4.3 The system 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: for example, Sika Skid-inhibiting Grit incorporated into the final coat, or paving with Decopad Paving Supports.

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

4.6 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.

4.7 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.

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

6.1 Results of test data confirm that the system will adequately resist the passage of moisture to the inside of the building and so meet or comply with the relevant requirements of the national Building Regulations:

England and Wales — Approved Document C, Requirement C2(b), Section 6

Scotland — Mandatory Standard 3.10, clauses 3.10.1(1)(2) and 3.10.7(1)(2)

(1) Technical Handbook (Domestic)

(2) Technical Handbook (Non-Domestic)

Northern Ireland — Regulation 28(b).

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

6.3 To achieve a weathertight coating it is essential that the application rate is as quoted in the Certificate holder's literature for the relevant system.

7 Properties in relation to fire

7.1 When tested to DD CEN/TS 1187 : 2012, and classified in accordance with BS EN 13501 : 2005, a system comprising an 18 mm plywood substrate, S-vap 5000E SA vapour control layer, an 80 mm thick PIR insulation board adhered using polyurethane adhesive, a layer of Primer 600, Carrier Membrane SA, a first coat of Decothane Ultra applied at 1.0 litre per m^2 reinforced with Sika Reemat Premium reinforcement, and a topcoat of Decothane Ultra applied at 0.5 litres per m^2, achieved a B_{ROOF}(t4).

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 1

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.

7.3 A roof incorporating the Decothane Ultra Economy Roof Waterproofing System has been tested to DD CEN/TS 1187 : 2012, Test 1.

8 Adhesion

Tests indicate that the adhesion of the system to the substrates indicated in section 4.2 of this Certificate 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 foot traffic

Tests indicate that 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.

10 Maintenance

10.1 The system must be the subject of annual inspections and maintenance to ensure continued performance in line with good practice.

10.2 Any damage should be repaired in accordance with section 16 and the Certificate holder's instructions.

11 Durability

Accelerated weathering tests confirm that satisfactory retention of properties is achieved. All available evidence indicates that the Decothane Ultra 15 Roof Waterproofing System should achieve an initial life expectancy of at least 10 years.

Installation

12 General

12.1 Installation of the Decothane Ultra 15 Roof Waterproofing System 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 products must be applied when the air and substrate temperatures are greater than 5°C. Special precautions may be necessary when temperatures exceed 35°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 Precautions

13.1 Vapours from the liquid components may cause sensitisation and irritation to the respiratory system, eyes and skin. The system should be used only in areas with sufficient ventilation to prevent the build-up of vapours. Contact with

the skin, eyes and clothing must be avoided. The supplier's instructions and the relevant safety regulations for working procedures must be adhered to at all times.

13.2 The liquid components must not be allowed to enter the waste drainage system. Care must also be taken to prevent vapours entering the inside of the building, eg by closing doors and windows.

14 Site and surface preparation

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

14.2 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).

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

14.4 Damaged areas of the substrate (eg blistered bitumen or roofing felt) must be removed, replaced or repaired. Substrate defects (eg shallow-bottomed cracks and indentations) are filled using Decothane Ultra.

14.5 Deck surfaces must be free from sharp projections such as protruding fixing bolts and concrete nibs.

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

14.7 All points of potential weakness such as splits, cracks, joints and crazed surfaces must be reinforced with additional Sika Reemat Premium reinforcing mat prior to application of the system.

14.8 The Reemat reinforcing mat must first be embedded in an initial application of Decothane Ultra applied at a rate of 1.25 litre per m^2.

14.9 When required, Quick Cure Primer is applied at a minimum rate of 6 to 10 m^2 per litre dependent on the nature of the substrate, prior to application of the membrane.

14.10 On prepared surfaces of bare metal the substrate is primed with Metal Primer applied at a minimum rate of 7 m^2 per litre to 7.5 m^2 per litre.

15 Application

15.1 Application can be by brush, roller or spray. Brush application is normally used only for small roof areas and for embedding the Sika Reemat Premium reinforcing mat into the waterproofing.

15.2 Prior to application, checks must be made to ensure 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
- air and substrate temperatures must be in excess of 5°C
- the Decothane Ultra components are conditioned at a temperature of 10°C or greater, for use in airless spray applications
- 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 $m \cdot s^{-1}$ (15 mph), unless precautions such as the use of wind barriers are taken.

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

15.4 The substrate is primed, where required, and areas requiring extra Sika Reemat Premium reinforcing mat, eg details and upstands, should be treated as described in sections 14.7 and 14.8. The substrate, once dry, will be ready for the main application of the system.

15.5 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. The Sika Reemat Premium reinforcing mat is embedded in the first coat while the membrane is still wet. Once the first coat is partially cured the second coat is applied.

First layer coverage rate in litres per m^2	1.25
Reinforcement	Sika Reemat Premium
Second layer coverage rate in litres per m^2	0.5
Finished thickness (mm)	1.5

15.6 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.

16 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 15.5.

Technical Investigations

17 Tests

17.1 Tests were conducted on Decothane Ultra 15 Roof Waterproofing System and the results assessed to determine:

- water vapour transmission
- resistance to water penetration
- tensile strength and elongation
- tensile bond strength
- static indentation at 23°C and 90°C
- dynamic indentation at –20°C and 23°C
- resistance to fatigue movement
- UV ageing for 10 year equivalent, followed by tensile strength and dynamic indentation
- heat ageing for 10 year equivalent, followed by tensile strength, dynamic indentation and fatigue cycling
- water exposure for 10 year equivalent, followed by tensile bond strength and static indentation.

17.2 Characterisation tests were conducted on the Decothane Ultra resin components as follows:

- infrared spectrum
- viscosity
- density.

18 Investigations

18.1 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.

18.2 Data on fire performance were evaluated.

Bibliography

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

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

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

BS EN ISO 9001 : 2008 *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*

ETAG 005 : 2000 Part 1 *Liquid applied roof waterproofing kits — General*

ETAG 005 : 2000 Part 6 *Liquid applied roof waterproofing kits — Specific stipulations*

19 Conditions

19.1 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.

19.2 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.

19.3 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.

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

19.5 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.

19.6 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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