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Agrément Certificate

14/5172

Product Sheet 1

## SOPREMA ANTIROCK WATERPROOFING SYSTEMS

### ANTIROCK TRAFFICKED DECK WATERPROOFING SYSTEM

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to the Antirock Trafficked Deck Waterproofing System, a polyester reinforced modified bitumen membrane for use as a protected waterproofing system overlaid with a suitable wearing course on trafficked decks.

(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

**Resistance to moisture** — the system will resist the passage of moisture into a structure (see section 6).

**Resistance to mechanical damage** — the system will accept the traffic loads and effects of thermal and other minor movement likely to occur in practice (see section 7).

**Properties in relation to fire** — the system, protected with a suitable overlay, can enable a roof to be unrestricted under the current Building Regulations (see section 8).

**Durability** — the system will have a service life in excess of 10 years (see section 10).

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: 18 December 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](http://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 Antirock Trafficked Deck 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)

<b>Requirement:</b> B4(2)	<b>External fire spread</b>
<b>Comment:</b>	When used on roof decks with an asphalt or concrete wearing surface, the system will enable a structure to be unrestricted under this Requirement. See section 8 of this Certificate.
<b>Requirement:</b> C2(b)	<b>Resistance to moisture</b>
<b>Comment:</b>	The system will enable a structure to satisfy this Requirement. See section 6 of this Certificate.
<b>Regulation:</b> 7	<b>Materials and workmanship</b>
<b>Comment:</b>	The system is acceptable. See section 10 and the <i>Installation</i> part of this Certificate.



## The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b> 8(1)	<b>Durability, workmanship and fitness of materials</b>
<b>Comment:</b>	The use of the system satisfies the requirements of this Regulation. See sections 9.1 and 10 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b> 9	<b>Building standards applicable to construction</b>
<b>Standard:</b> 2.8	<b>Spread from neighbouring buildings</b>
<b>Comment:</b>	When used on roof deck structure with an asphalt or concrete wearing surface, the deck can be regarded as having low vulnerability under clause 2.8.1 <sup>(1)(2)</sup> of this Standard. See section 8 of this Certificate.
<b>Standard:</b> 3.10	<b>Precipitation</b>
<b>Comment:</b>	The system will enable a structure to satisfy the requirements of this Standard, with reference to clauses 3.10.1 <sup>(1)</sup> and 3.10.7 <sup>(1)</sup> . See section 6 of this Certificate.
<b>Standard:</b> 7.1(a)	<b>Statement of sustainability</b>
<b>Comment:</b>	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.
<b>Regulation:</b> 12	<b>Building standards applicable to conversions</b>
<b>Comment:</b>	Comments made in relation to the system under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)</sup> and Schedule 6 <sup>(1)(2)</sup> . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



## The Building Regulations (Northern Ireland) 2012

<b>Regulation:</b> 23(a)(i)(iii)(iv)(b)(i)	<b>Fitness of materials and workmanship</b>
<b>Comment:</b>	The system is acceptable. See section 10 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b> 28(b)	<b>Resistance to moisture and weather</b>
<b>Comment:</b>	The system can enable a structure to meet this Regulation. See section 6 of this Certificate.
<b>Regulation:</b> 36(b)	<b>External fire spread</b>
<b>Comment:</b>	When used on roof decks with an asphalt or concrete wearing surface, the system will enable a roof to be unrestricted under the requirements of this Regulation. See section 8 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* (3.1, 3.3, 3.4 and 3.6) and 12 *Precautions* of this Certificate.

## 1 Description

1.1 The Antirock Trafficked Deck Waterproofing System comprises a range of two nominal 4 mm thick polymer-modified bitumen, torch-on waterproofing membranes reinforced with a nominal 180 g·m<sup>-2</sup> polyester reinforcement. The membranes are finished on the top surface with a light grey mineral finish and include a nominal 100 mm wide seldge without mineral finish. The seldge is protected with either a PET release film or thermofusible film. The underside of the membrane is finished with a thermofusible film.

1.2 The membranes are marketed under the trade names of Antirock Bridge and Trafikrock. The nominal characteristics of the membranes are:

Thickness (mm)	≥4.0
Watertightness	Pass
Water absorption (%)	0.75
Bond strength (MPa)	≥0.7
Shear bond strength (MPa)	≥0.3
Tensile strength (N/50 mm)	
longitudinal	≥550
transverse	≥400
Tensile elongation (%)	
longitudinal	≥30
transverse	≥30
Low temperature flexibility (°C)	≤-4
Resistance to compaction of a coarse bituminous mixture	Pass
Flow resistance (°C)	≥80

1.3 Ancillary items included in this assessment are:

- Aquadere TP and Appret Antirock Emulsion — bitumen emulsion primers
- Elastocol 500 TP and Appret Antirock — bitumen solution primers

1.4 Bituminous sealant, for sealing/terminating the membrane into chases, may also be used with the system, but is outside the scope of this Certificate. Details of suitable products/specifications may be obtained from the Certificate holder.

## 2 Manufacture

2.1 The membranes are manufactured using conventional blending and continuous bitumen coating 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 Soprema S.A.S and Soprema Inc have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by BSI (Certificates FM 513481 and FM 514061 respectively).

## 3 Delivery and site handling

3.1 The membranes are supplied in rolls of 8m x 1m for manual installation, and 200m x 1m rolls for machine installation, having nominal weights of 45 kg and 1150 kg respectively.

3.2 The rolls are delivered to site on wooden pallets, stored upright and shrink-wrapped for protection. The products must be stored under dry conditions, protected from heat, freezing weather and potential sources of contamination.

3.3 The primers are supplied in the pack sizes detailed in Table 1.

Product	Pack size (litres)	Packs per pallet
Aquadere TP Primer	25, 1000	27, 1
Appret Antirock Emulsion Primer	19	24
Elastocol 500 TP Primer	30	24
Appret Antirock Primer	19, 200	24, 1

3.4 Elastocol 500 TP and Appret Antirock primers are 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 all containers bear the appropriate hazard warnings. Flashpoints and main hazard classifications are given in Table 2.

Component	Flashpoint (°C)	Classification
Elastocol 500 TP Primer <sup>(1)</sup>	25	Harmful, Flammable
Appret Antirock Primer <sup>(1)</sup>	4	Harmful, Highly flammable

(1) These components must be stored in accordance with *The Dangerous Substances and Explosive Atmospheres Regulations 2002*.

3.5 All products must be stored in accordance with the Certificate holder's recommendations, with the product data sheets consulted for correct storage and shelf life details.

3.6 The Certificate holder's material safety data sheets must be consulted for the safe handling of the products.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Antirock Trafficked Deck Waterproofing System.

## Design Considerations

### 4 Use

4.1 The Antirock Trafficked Deck Waterproofing System, applied to a concrete deck laid in accordance with BS EN 1992-1-1 : 2004 and its UK National Annex, is satisfactory for use on trafficked decks subjected to vehicular and pedestrian traffic.

4.2 The system must be overlaid with a suitable asphalt wearing course.

### 5 Practicability of installation

Installation of the system must be carried out by contractors trained and approved by the Certificate holder in accordance with the Certificate holder's Installation Manual.

### 6 Resistance to moisture



6.1 Tests confirm that the system is an effective barrier against the passage of water, is flexible and can accommodate the movement owing to cracking permitted by BS EN 1992-1-1 : 2004 and its UK National Annex.

6.2 The system will have a water vapour resistance commensurate with typical SBS polymer-modified bitumen membranes of this type and will provide a high resistance to the passage of water vapour.

### 7 Resistance to mechanical damage

7.1 The system, when overlaid with an asphalt wearing course, can accept, without damage, the foot and vehicular traffic likely to occur in practice. Where continuous heavy point loading is envisaged, additional protection should be considered and the Certificate holder consulted for advice.

7.2 Where active (movement) joints are encountered, the system must be used in conjunction with suitable expansion joints. The Certificate holder must be consulted for suitable products and design of detailing. These products and details are outside the scope of this Certificate.

### 8 Properties in relation to fire



When used on decks with a suitable asphalt overlay, the deck may be deemed to be of designation B<sub>ROOF</sub>(t4) and will be unrestricted under the national Building Regulations.

## 9 Maintenance



9.1 Installation of the system should be the subject of a planned maintenance programme to ensure that drainage outlets are kept clear.

9.2 Damaged sections of the system or overlay must be repaired in accordance with section 14.

## 10 Durability



The system is durable and will remain effective, provided it is not damaged during subsequent resurfacing operations, and will have a service life in excess of 10 years.

# Installation

## 11 General

11.1 The system must be applied only to prepared concrete substrates that are clean and free from ice, frost, laitance, oil or other contaminants that could impair the adhesion of the system. Suitable concrete finishes include tamped, timber-formed and U4.

11.2 The concrete substrate should be cured for a minimum period of 28 days. The advice of the Certificate holder must be sought where shorter cure periods are envisaged.

11.3 Any imperfections in the concrete deck must be repaired with a material compatible with the system and must be agreed with the Certificate holder.

11.4 The prepared substrate must be primed with the specified primer using a stiff brush or roller, to achieve a target coverage rate of between 150 g·m<sup>-2</sup> and 250 g·m<sup>-2</sup>, or 250 g·m<sup>-2</sup> and 350 g·m<sup>-2</sup> for Aquadere TP, depending on the porosity and surface texture of the concrete. Ponding of the primer must be avoided.

11.5 Installation of the system must only proceed when the air and substrate temperatures are above 2°C and the substrate temperature is above the dew point.

11.6 Adhesion of the waterproofing membrane to the primed concrete, and any repair system(s) used, must be checked prior to installation by random application to ensure that a minimum tensile bond strength of 0.3 MPa is achieved.

## 12 Precautions

Contact with the liquid components of the system may cause irritation to the skin and eyes, and must be avoided. The Certificate holder's instructions and material safety data sheets for the products must be consulted for the safe handling of the products.

## 13 Procedure

13.1 The Antirock membrane is installed using traditional torch-on techniques and in accordance with the Certificate holder's instructions. Alternatively, where possible, the membrane can be laid using the Macaden or Mini-Macaden machines.

13.2 The installation should start at the lowest point ensuring that the overlaps are weathered.

13.3 To avoid corrugation effects, the membrane is unrolled and placed so that it is parallel to the direction of the traffic. On curved parts of the structure, the strips should be arranged, as far as is possible, so that they do not form an angle larger than 60° with the direction of traffic.

13.4 The substrate must be heated strongly during the installation.

13.5 The underside of the membrane is torched, ensuring that the thermofusible film is melted and that a 5 mm to 10 mm bead is exuded either side of the membrane. The bead should be bevelled to provide a smooth transition to the adjacent sheet using a hot spatula.

13.6 Side laps must overlap at least 8 cm, using the mineral-free selvedge as a guide.

13.7 End laps must be at least 15 cm, ensuring that, before welding, the mineral granules are removed from the top surface of the membrane to be covered, and must be staggered to prevent more than three overlaps coinciding.

13.8 All joints must be pressed down with a spatula or roller, and checks must be made to ensure that the overlaps are secure and fully sealed with the exuded compound.

13.9 Upstands must be at least 15 cm and terminated in a sealed chase using a suitable sealant, and may be protected with a suitable flashing detail.

13.10 The membrane must be overlaid with a suitable hot-rolled or mastic asphalt wearing surface as soon as practicable after installation of the membrane and before the membrane is subjected to vehicular trafficking.

## 14 Repair

14.1 Damage to the system, eg cuts, perforations and blisters, can be repaired by cutting out and replacing the damaged area with fresh material to the same specification, ensuring a minimum 8 cm overlap of new material over the existing material. The mineral finish must be removed from the area where the bond is to be made.

14.2 The integrity and adhesion of the repaired section must be checked using organoleptic non-destructive methods.

14.3 Where extensive damage or contamination has occurred, it may be necessary to remove the system from the deck before re-applying. In this case, the Certificate holder must be consulted for advice.

14.4 The asphalt wearing surface must be reinstated once the repair to the system has been completed.

## Technical Investigations

### 15 Tests

15.1 Tests were carried out on the primers and the results assessed to determine:

- viscosity
- density
- drying time
- non-volatile content.

15.2 Tests were carried out on the Antirock compound and the results assessed to determine:

- fines content
- softening point.

15.3 Tests were carried out on the Antirock polyester reinforcement and the results assessed to determine:

- mass per unit area
- tensile characteristics.

15.4 Tests were carried out on the system and the results assessed to determine:

- bond strength
- bond to early age (7 day) concrete
- effect of freeze/thaw
- resistance to chisel impact
- resistance to chloride ion penetration.

### 16 Investigations

16.1 Test data on the membrane and/or system from independent laboratories was assessed to determine:

- mass per unit area
- visible defects
- watertightness
- low temperature flexibility
- tensile characteristics
- creep resistance
- effect of heat ageing
- tensile bond strength
- shear bond strength to support and hot rolled asphalt to membrane
- ability to bridge cracks (dynamic fatigue)
- resistance to compaction of an asphalt layer (coarse bituminous mixture).

16.2 An installation of the system was inspected to confirm the practicability of installing the system manually and by machine using the Mini-Macadem.

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

## Bibliography

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

BS EN 14695 : 2010 *Flexible sheets for waterproofing — Reinforced bitumen sheets for waterproofing of concrete bridge decks and other trafficked areas of concrete — Definitions and characteristics*

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

## 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.