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Agrément Certificate  
**03/4009**  
Product Sheet 2

### PERMATEC HOT-APPLIED MONOLITHIC ROOFING AND WATERPROOFING SYSTEMS

### PERMATEC ECOWRAP HOT-APPLIED MONOLITHIC MEMBRANE WATERPROOFING SYSTEM

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to the PermaTEC EcoWrap Hot-Applied Monolithic Membrane Waterproofing System, for use on new or existing horizontal and vertical surfaces as a tanking or damp-proof membrane.

(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 structure (see section 7).

**Resistance to mechanical damage** — the system will accept the limited foot traffic and loads associated with installation, and the loads and effects of thermal and other minor movement likely to occur in service (see section 8).

**Durability** — under normal service conditions the system will remain waterproof for the design service life of the structure in which it is incorporated (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 Sixth issue: 6 April 2017

John Albon — Head of Approvals

Originally certificated on 24 September 2003

Construction Products

Claire Curtis-Thomas

Chief Executive

*The BBA is a UKAS accredited certification body — Number 1113. 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 PermaTEC EcoWrap Hot-Applied Monolithic Membrane 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:	C2(b)	Resistance to moisture
Comment:		Tests for water resistance indicate that the system will enable a roof to meet this Requirement. See section 7.1 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The system is acceptable. See section 10 and the <i>Installation</i> part of this Certificate.



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

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The use of the system satisfies the requirements of this Regulation. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	3.4	Moisture from the ground
Comment:		Tests for water resistance indicate that the system will enable a structure to meet the requirements of this Standard, with reference to clauses 3.4.2 <sup>(1)(2)</sup> and 3.4.7 <sup>(1)(2)</sup> . See section 7.1 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 the system under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . (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 10 and the <i>Installation</i> part of this Certificate.
Regulation:	28(a)	Resistance to moisture and weather
Comment:		Tests for water resistance indicate that the system will enable a structure to satisfy the requirements of this Regulation. See section 7.1 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* (3.1, 3.3 and 3.4) and 12 *Procedure* (12.3) of this Certificate.

# Additional Information

## NHBC Standards 2017

NHBC accepts the use of the PermaTEC EcoWrap Hot-Applied Monolithic Membrane Waterproofing System, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapters 5.1 *Substructure and ground bearing floors* and 5.4 *Waterproofing of basements and other below ground structures*.

Where Grade 3 protection is required and the below ground wall retains more than 600 mm (measured from the top of the retained ground to the lowered finished floor level) the system should be used in combination with either a type B or type C waterproofing protection.

# Technical Specification

## 1 Description

1.1 The PermaTEC EcoWrap Hot-Applied Monolithic Membrane Waterproofing System is based on a formulated hot-applied membrane made from a combination of refined bitumen, synthetic rubbers and other additives. The membrane is applied in two layers to provide a waterproofing layer with a nominal coating thickness of 6 mm.

1.2 The membrane is used in conjunction with a range of reinforcement membranes and protection membranes and boards, including:

- PermaFLASH-R — a 55 g·m<sup>-2</sup> polyester reinforcing scrim
- PermaFLASH-D150 — a 1.25 mm thick and 150 mm wide flexible detailing sheet, used as a reinforcement layer over cracks, construction joints and changes in materials, and where minor movement may occur
- PermaFLASH-D500 — a 1.25 mm thick and 500 mm wide flexible detailing sheet, used as a reinforcement at rainwater outlets
- PermaGUARD-F — a 180 g·m<sup>-2</sup> sand-surfaced, polyester-based bitumen membrane protection layer
- PermaGUARD-M — a 180 g·m<sup>-2</sup> slate-surfaced, high-performance torch-applied bitumen membrane protection layer for use on details which will not be covered by the surface finishes
- PermaGUARD-HDPB — a high-density polymeric protection board
- PermaGUARD-PB — a protection board fabricated with a bituminous core sandwiched between two layers of non-woven glassfibre reinforcement
- IKO PermaTEC High Penetration Primer — a brush- or roller-applied bituminous priming solution used in the preparation of cementitious surfaces prior to the application of the membrane
- IKO PermaTEC Polymer Primer — a brush- or roller-applied synthetic rubber-based priming solution used in the preparation of cementitious surfaces prior to the application of the membrane

1.3 IKO Plasdrain, a range of drainage boards, is also used with the system but is outside the scope of this Certificate.

## 2 Manufacture

2.1 The PermaTEC EcoWrap compound is manufactured by heating and blending bitumen, process oils, fillers and other additives in a temperature-controlled cycle. Protection membranes are manufactured by traditional continuous coating processes, and other components of the system are purchased to agreed specifications.

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 IKO PLC has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by BSI (Certificate FM 595512) and BS EN ISO 14001 : 2004 by Lucideon (Certificate 24700).

## 3 Delivery and site handling

3.1 The PermaTEC EcoWrap compound is delivered to site in 12 kg blocks covered with EcoWrap heat-dispersible film.

3.2 Reinforcing and protection layers are packaged with labels bearing the product trade name and should be stored under cover and kept dry.

3.3 IKO PermaTEC High Penetration Primer and IKO PermaTEC Polymer Primer are delivered to site in 25 litre cans.

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 PermaTEC EcoWrap Hot-Applied Monolithic Membrane Waterproofing System.

### 4 Environmental information

- 4.1 The PermaTEC waterproofing membrane compound has a recycled content of 45% by mass of the total product.
- 4.2 The recycled materials are described as limestone filler and ground rubber crumb, the latter manufactured from post-consumer vehicular tyres. Post-consumer material is defined in BS EN ISO 14021 : 2001, and the Waste & Resources Action Programme (WRAP) 'Rules of Thumb' Guide to Recycled Content in Construction Products.
- 4.3 The recycled content has been calculated in accordance with BS EN 14021 : 2001 by expressing the input mass of recycled material as a percentage of the total input mass for the product.
- 4.4 The source and quantity of recycled material added to the product is verified by the BBA as part of post-Certification auditing.

### 5 Use

- 5.1 The PermaTEC EcoWrap Hot-Applied Monolithic Membrane Waterproofing System is satisfactory for use as a membrane for above- and below-ground waterproofing within a structure of concrete, brickwork and blockwork as a fully-bonded Type A waterproofing protection, as defined in BS 8102 : 2009, or as a damp-proof membrane for solid floors.
- 5.2 The membrane is compatible with concrete, brickwork and blockwork substrates and is resistant to those chemicals likely to occur in service.
- 5.3 Where contact with material used as a damp-proof course is likely, consideration must be given to the thermal stability of that material, owing to the high temperatures reached during installation of the membrane.

### 6 Practicability of installation

The system should only be installed by contractors who have been trained and approved by the Certificate holder. Details of these are available from the Certificate holder.

### 7 Weathertightness



7.1 The system will adequately resist the passage of moisture into the structure and enable the structure to comply with the relevant requirements of the national Building Regulations.

7.2 The system is impervious to water and will act as a waterproofing layer capable of accepting minor structural movement.

### 8 Resistance to mechanical damage

- 8.1 The system can accept the limited foot traffic and light concentrated loads associated with installation and maintenance. Reasonable care is required to avoid puncture by sharp objects or concentrated loads.
- 8.2 The system can accommodate the minor structural movement likely to occur in service.

### 9 Maintenance

As the system is confined within the structure and has satisfactory durability (see section 10), maintenance is not required.

### 10 Durability



The PermaTEC EcoWrap Hot-Applied Monolithic Membrane Waterproofing System, when fully protected and subjected to normal service conditions, will provide an effective barrier to the transmission of moisture for the design service life of the structure in which it is incorporated.

## Installation

### 11 General

- 11.1 The PermaTEC EcoWrap Hot-Applied Monolithic Membrane Waterproofing System must be installed in accordance with the relevant requirements of BS 8102 : 2009, CP 102 : 1973, the Certificate holder's instructions and this Certificate.
- 11.2 Concrete or screeded surfaces should have a smooth finish, free from loosely-adhering material and sharp protrusions. Concrete should be dry and dust free. Surfaces must be conditioned with IKO PermaTEC High Penetration Primer or IKO PermaTEC Polymer Primer in accordance with the Certificate holder's instructions, and allowed to dry before application of membrane.
- 11.3 Vertical surfaces of brickwork, blockwork and, if necessary, masonry, should be rendered to provide an even surface. Brickwork or blockwork not rendered must be pointed flush to give a smooth surface without sudden changes in level. Surfaces must be conditioned with IKO PermaTEC High Penetration Primer or IKO PermaTEC Polymer Primer in accordance with the Certificate holder's instructions, and allowed to dry before application of membrane.

11.4 The membrane must be covered with a protection layer, in accordance with the Certificate holder's instructions, immediately after installation.

## 12 Procedure

12.1 Blocks of the membrane are heated in a mechanically-agitated melter, which must have a double jacket containing either air or a heat transfer mineral oil, and be fitted with thermometers to measure the melt and air/oil temperatures.

12.2 The nominal temperature range for the molten membrane is 160°C to 180°C. The temperature of the melt must not exceed 190°C.

12.3 The molten membrane is discharged from the melter into a suitable container and applied to the surface using a long-handled squeegee for horizontal surfaces and a suitable spreader for vertical surfaces.

12.4 When used over construction joints or other minor cracks the membrane must be reinforced with PermaFLASH-D150. The Certificate holder must be consulted for suitable details at expansion joints.

12.5 The first layer of the molten PermaTEC EcoWrap membrane should have a nominal thickness of 3 mm.

12.6 PermaFLASH-R polyester reinforcing scrim should be embedded by lightly brushing it into the first layer of the membrane whilst it is still warm and tacky. The reinforcement overlaps should be at least 75 mm and fully sealed by the PermaTEC EcoWrap membrane.

12.7 The second layer of PermaTEC EcoWrap membrane, applied over the top of the reinforcement, should have a nominal thickness of 3 mm.

12.8 The membrane must be protected immediately with the specified PermaGUARD protection layer in accordance with the Certificate holder's instructions.

12.9 When used for internal tanking, the membrane should be loaded against back pressure in accordance with BS 8102 : 2009.

## 13 Repair

Any damage to the system must be repaired as soon as possible, before being confined within the structure. The system may be repaired by removing the damaged area and reinstating the system to the original specification. The advice of the Certificate holder should be sought.

## Technical Investigations

### 14 Tests

14.1 Characterisation tests were carried out on the compound to establish fines, penetration, flow and resilience.

14.2 Characterisation tests were carried out on PermaFlash-R and Permaflash-D to establish thickness, mass per unit area and tensile properties.

14.3 Tests were conducted on samples of the system and/or system components, and the results assessed to determine:

- water vapour permeability
- watertightness
- low temperature flexibility
- resistance to fatigue
- resistance to dynamic indentation (system including Permaguard-PB protection)
- resistance to static indentation (system including Permaguard-PB protection)
- effect of heat ageing
- effect of exposure to surface water.

### 15 Investigations

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.

## Bibliography

BS 8102 : 2009 *Code of practice for protection of below ground structures against water from the ground*

BS EN 14021 : 2001 *Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling)*

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

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

CP 102 : 1973 *Code of practice for protection of buildings against water from the ground*

## 16 Conditions

16.1 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.

16.2 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.

16.3 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.

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

16.5 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.

16.6 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.