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Agrément Certificate
98/3454
Product Sheet 1

IKOPRO SYNTHAPRUFE DAMP-PROOFING

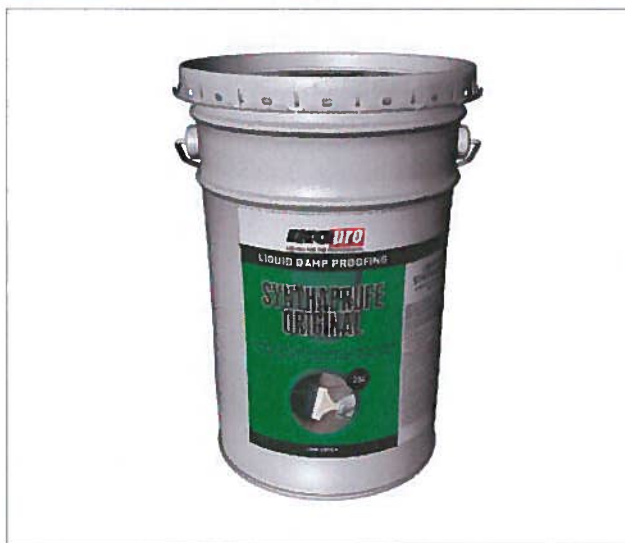
IKOPRO SYNTHAPRUFE ORIGINAL

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to IKOpro Synthaprufe Original, a sandwich membrane for use as waterproofing above and below ground structures of concrete, brickwork, blockwork or masonry, or to form a damp-proof membrane for solid floors.

AGRÉMENT 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 water and water vapour — the product will resist the passage of moisture into the structure (see section 5).

Resistance to mechanical damage — the product will accept the limited foot traffic and loads associated with installation and in service (see section 6).

Durability — under normal service conditions the product will provide an effective barrier to the transmission of moisture for the life of the structure in which it is incorporated (see section 8).

The BBA has awarded this Agrément Certificate to the company named above for the product described herein. The product 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

Simon Wroe
Head of Approvals — Materials

Greg Cooper
Chief Executive

Date of First issue: 27 June 2011

Originally certificated on 19 February 1998

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, IKOpro Synthaprufe Original, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2010 (England and Wales)

Requirement:	C2(a)	Resistance to moisture
Comment:		The product will enable a structure to meet this Requirement. See section 5.1 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is acceptable. See section 8.1 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The product satisfies the requirements of this Regulation. See section 8.1 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	3.4	Moisture from the ground
Comment:		The product will enable a structure to satisfy the requirements of this Standard, with reference to clauses 3.4.1 ⁽¹⁾⁽²⁾ , 3.4.2 ⁽¹⁾⁽²⁾ , 3.4.6 ⁽¹⁾⁽²⁾ and 3.4.7 ⁽¹⁾⁽²⁾ . See section 5.1 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The product 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 – conversions
Comment:		Comments made in relation to the product 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) 2000 (as amended)

Regulation:	B2	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 8.1 and the <i>Installation</i> part of this Certificate.
Regulation:	C4(a)	Resistance to ground moisture and weather
Comment:		The product will enable a structure to satisfy the requirements of this Regulation. See section 5.1 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 section: 2 *Delivery and site handling* (2.1) of this Certificate.

Non-regulatory Information

NHBC Standards 2011

NHBC accepts the use of IKOpro Synthaprufe Original, when installed and used in accordance with this Certificate, as meeting NHBC Standards Chapter 5.1 *Substructure and ground bearing floors* clauses M8 *Damp-proof membrane* (for use below the slab and in sandwich constructions) and M10 *Tanking materials* (for use as part of an external basement tanking system).

Technical Specification

1 Description

- 1.1 IKOpro Synthaprufe Original is a blend of bitumen emulsion containing synthetic rubber latex.
- 1.2 The following ancillary products are for use with IKOpro Synthaprufe Original:
 - Hyload Protection Board — a flexible polymeric board for protecting against mechanical damage, pedestrian or vehicular traffic and damage caused by backfilling
 - Reinforcing Fabric — a lightweight polyester fleece for reinforcing at points of weakness such as details at angles.
- 1.3 Quality control checks are performed on the raw materials, during manufacture, and on the final product.

2 Delivery and site handling

- 2.1 The product is delivered to site in 5 litre cans or 25 litre drums. Each container bears the product name, manufacturer's name and the BBA identification mark bearing the number of this Certificate.
- 2.2 The product must be stored in sealed containers at temperatures of 5°C to 25°C. Unopened containers have an expected shelf-life of 18 months.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on IKOpro Synthaprufe Original.

Design Considerations

3 General

- 3.1 IKOpro Synthaprufe Original is satisfactory for use as waterproofing above and below ground structures of concrete, brickwork, blockwork or masonry, or as a damp-proof membrane for solid floors.
- 3.2 The product is compatible with the substrates listed in section 3.1 and is resistant to those chemicals likely to occur in normal service conditions.
- 3.3 The membrane must be protected immediately after installation so that it does not achieve temperatures where slippage due to softening can occur.

4 Practicability of installation

The product is designed to be installed by a competent contractor experienced with this type of product.

5 Resistance to water and water vapour

 5.1 When used within an appropriate waterproofing design in accordance with the relevant codes of practice, the product will adequately resist the passage of moisture from the ground into the structure and enable a structure to comply with the requirements of the national Building Regulations:

England and Wales — Approved Document C, Requirement C2(a), Section 4.7

Scotland — Mandatory Standard 3.4, clauses 3.4.1, 3.4.2, 3.4.6 and 3.4.7

Northern Ireland — Regulation C4(a).

5.2 The product is impervious to water and will give a waterproof layer capable of accepting minor structural movements without damage.


6 Resistance to mechanical damage

- 6.1 The bond between the product and substrate is satisfactory.
- 6.2 When installed the product is capable of accommodating the minor movements likely to occur under normal service conditions.
- 6.3 The product can be damaged by sharp objects and care should be taken, particularly when the membrane is exposed during construction and backfilling or screeding operations.
- 6.4 Provided sufficient care is taken the product will not be damaged by normal foot traffic.

7 Maintenance

As the product is confined and has suitable durability, maintenance is not required. Any damage occurring during installation must be repaired, prior to installation of any protection, in accordance with section 11.

8 Durability

 8.1 IKOpro Synthaprufe Original, when used within an appropriate waterproofing design in accordance with the relevant codes of practice, fully protected and subjected to normal service conditions, will provide an effective barrier to the transmission of liquid water and water vapour for the design life of the structure in which it is incorporated.

8.2 The product is not affected by contact with an alkaline substrate.

Installation

9 General

9.1 Installation of IKOpro Synthaprufe Original must generally be in accordance with the relevant requirements of CP 102 : 1973, Section 2, or BS 8102 : 2009 and the manufacturer's application instructions.

9.2 New concrete, screeds or renderings should have a trowelled, lightly tamped or brushed finish, and be free from defects. Brickwork, blockwork or masonry should be flush pointed or finished with a sand/cement render. Defects in existing surfaces should be made good. All surfaces must be clean, sound and slightly dampened before installation.

9.3 The product must not be applied to exposed surfaces in wet conditions (ie rain or standing water), at temperatures below 5°C, or if these conditions are likely to occur before the membrane has dried.

10 Procedure

10.1 The product should be applied by brush in a single stroke to concrete floors and walls at, above or below ground level. Horizontal applications must be carried a minimum of 150 mm up all walls and be joined to the existing damp-proof course. Where no dpc is present, the treatment should be extended above the finished floor level.

Concrete floors

10.2 The basecoat is applied at a rate of 1 litre per m². When dry, a second coat is applied at a rate of 1 litre per 1.5 m². At temperatures in excess of 10°C with a relative humidity of less than 80%, the drying time will be approximately six hours; however, prevailing conditions may reduce or extend the drying period.

10.3 The second coat should be blinded with clean, sharp sand while still tacky, followed (when dry), by a finishing screed not less than 50 mm thick.

Internal walls

10.4 The membrane should be applied as described in section 10.2, except that three equal coats at a rate of 1 litre per 2 m² are used.

10.5 The final coat should be blinded with clean, sharp sand while still tacky, followed (when dry), by a minimum of two coats of a gypsum plaster specification, to a total thickness of 12 mm.

Retaining walls

10.6 The membrane should be applied as described in section 10.2, except that three coats at a rate of 1 litre per 2 m² are used. While the third coat is still tacky, it should be faced with Hyload Protection Board, to provide protection against backfilling.

Details

10.7 Where the structure is penetrated by features such as pipes or conduits, the technical advice of the Certificate holder must be sought.

10.8 Angles should be pre-treated with a coat of IKOpro Synthaprufe Original extending 175 mm either side, applied at a rate of 1 litre per m². A strip of Reinforcing Fabric, 300 mm wide, is then embedded into the product while still wet, using a brush lightly charged with IKOpro Synthaprufe Original.

10.9 The advice of the Certificate holder should be sought on detailing at expansion and construction joints.

11 Repair

The product is repaired by recoating the damaged area at the appropriate rate for the application prior to the installation of any protection.

Technical Investigations

12 Tests

Samples of IKOpro Synthaprufe Original were obtained from the Certificate holder for testing. The results of the tests carried out by the BBA are summarised in Table 1.

Table 1 Physical properties – general

Test (units)	Mean result	Method
Water vapour transmission ($\text{g}\cdot\text{m}^{-2}\cdot\text{day}^{-1}$)	1.64	BS 3177 (75% RH/25°C)
Water vapour resistance ($\text{MN}\cdot\text{s}\cdot\text{g}^{-1}$)	125	BS 3177 (75% RH/25°C)
Tensile strength at maximum load ($\text{N}\cdot\text{mm}^{-2}$)		BS 2782-3.320A (100 mm·min ⁻¹)
control	0.02	
water soak ⁽¹⁾	0.05	
heat aged ⁽²⁾	0.09	
Elongation at maximum load (%)		BS 2782-3.320A (100 mm·min ⁻¹)
control	90	
water soak ⁽¹⁾	340	
heat aged ⁽²⁾	480	
Elongation at break (%)		BS 2782-3.320A (100 mm·min ⁻¹)
control	>900	
water soak ⁽¹⁾	420	
heat aged ⁽²⁾	630	
Low temperature flexibility (°C)	-15	MOAT 27 : 5.4.2
Resistance to static indentation rigid substrate	L_1	MOAT 27 : 5.1.9
Tensile bond strength ($\text{N}\cdot\text{mm}^{-2}$)	0.38	T1/14 ⁽³⁾
Chisel impact		T1/13 ⁽³⁾
tested at 0°C	full penetration	
tested at 23°C	full penetration	

(1) Water soak 28 days at 23°C.

(2) Heat aged 56 days at 60°C.

(3) BBA test method.

13 Investigations

13.1 The manufacturing process was examined, including the methods adopted for quality control, and details were obtained of the quality and composition of the material used.

13.2 A demonstration of the application of the material by the manufacturer was witnessed to assess the practicability of installation.

Bibliography

BS 2782-3.320A to 320F : 1976 *Methods of testing plastics – Mechanical properties – Tensile strength, elongation and elastic modulus*

BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*

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

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

MOAT No 27 : 1983 *General Directive for the Assessment of Roof Waterproofing Systems*

Conditions of Certification

14 Conditions

14.1 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.

14.2 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.

14.3 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.

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

14.5 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
- individual 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.

14.6 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.