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Agrément Certificate
No 90/2432
*Third issue**

Designated by Government to issue European Technical Approvals

HYDROTECH MONOLITHIC MEMBRANE 6125 DAMP-PROOFING SYSTEM

Couche d'étanchéité
 Feuchtigkeitssperre

Product




Hydrotech Monolithic Membrane used at Exchange Square, Broadgate, London

- THIS CERTIFICATE RELATES TO THE HYDROTECH MONOLITHIC MEMBRANE 6125 DAMP-PROOFING SYSTEM, A ONE-PART, HOT-APPLIED, RUBBERISED BITUMINOUS MEMBRANE.
- The system is for use on new or existing horizontal and vertical surfaces to form a sandwich membrane for above-ground and basement waterproofing on a structure of concrete, brickwork, blockwork or masonry, or to form a damp-proof membrane for solid floors.
- Hydrotech is manufactured by Hydrotech Membrane Corporation, Canada, and marketed in the UK by Alumasc Exterior Building Products Ltd. The system is installed by trained contractors (using specialist equipment) approved by Alumasc Exterior Building Products Ltd.

Regulations

1 The Building Regulations 1991 (as amended) (England and Wales)

 The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the compliance of damp-proof membranes with the Building Regulations. In the opinion of the BBA, the Hydrotech Monolithic Membrane 6125 Damp-proofing System, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements.

Requirement: C4	Resistance to weather and ground moisture
Comment:	Tests for water resistance on the membrane indicate that the material will meet this Requirement. See section 8.1 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The system comprises acceptable materials. See section 13 of this Certificate.

Electronic Copy

2 The Building Standards (Scotland) Regulations 1990 (as amended)



In the opinion of the BBA, the Hydrotech Monolithic Membrane 6125 Damp-proofing System, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations as listed below.

Regulation:	10	Fitness of materials
Standard:	B2.1	Selection and use of materials and components
Comment:		The system comprises acceptable materials. See section 13 of this Certificate.
Regulation:	17	Preparation of sites and resistance to moisture
Standard:	G2.6	Resistance to moisture from the ground
Comment:		The system can enable a floor to satisfy the requirements of this Standard. See section 8.1 of this Certificate.

3 The Building Regulations (Northern Ireland) 1994 (as amended)



In the opinion of the BBA, the Hydrotech Monolithic Membrane 6125 Damp-proofing System, if used in accordance with the provisions of this Certificate, will satisfy the various Building Regulations as listed below.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The system comprises acceptable materials. See section 13 of this Certificate.
Regulation:	C5	Resistance to ground moisture and weather
Comment:		Tests for water resistance of the membrane indicate that it can enable a floor to satisfy the requirements of this Regulation. See section 8.1 of this Certificate.

4 Construction (Design and Management) Regulations 1994

Information in this Certificate may assist the client, planning supervisor, designer and contractors to address their obligations under these Regulations.

See sections: 6 *Delivery and site handling* (6.1 and 6.2), 15 *Procedure* (15.2).

Technical Specification

5 Description

5.1 The Hydrotech Monolithic Membrane 6125 Damp-proofing System is manufactured by heating and blending bitumen, processing oils, fillers and other additives.

5.2 Flex-Flash F is a 50 gm⁻² spunbonded polyester fabric, for use as a reinforcement to the membrane.

5.3 Ancillary products used with Hydrotech include:

Flex-Flash UN — a 1.5 mm thick uncured Neoprene membrane for use to reinforce the membrane at joints where movement is likely to occur, and for details and upstands. Flex-Flash UN may be replaced by similar material approved by the Certificate holder.

Hydrotech Surface Conditioner or other Certificate holder approved bitumen conditioner — for surface conditioning concrete and brickwork surfaces.

The following separation/protection layer products can be used:

Vertical applications

Hydrogard 10 — lightweight protection sheet
Hydrogard 20 — standard protection sheet
Hydrogard 30 — heavy duty protection sheet
Hydrogard 40 — root repellent protection sheet
bitumen composite protection board (refer to Alumasc Exterior Building Products Ltd if used in excess of 2 m above horizontal deck surface)
other material approved for use by the Certificate holder.

Horizontal decks

Hydrogard 10 — lightweight protection sheet
Hydrogard 20 — standard protection sheet
Hydrogard 30 — heavy duty protection sheet
Hydrogard 40 — root repellent protection sheet
bitumen composite protection board
other material approved for use by the Certificate holder.

5.4 Quality control checks are performed on incoming raw materials, during production, and on the finished product. Checks include:

penetration
viscosity
flow
flexibility
toughness.

6 Delivery and site handling

6.1 Hydrotech is delivered to site in 226 kg drums bearing the product name, the manufacturer's name and the BBA identification mark incorporating the number of this Certificate.

6.2 Each drum contains 10 cakes individually double-wrapped in a disposable polythene film. Each cake has a nominal weight of 22.6 kg.

6.3 Unused cakes should be stored in the sealed drums. The material is not affected by the temperatures likely to occur during storage.

6.4 Reinforcing materials should be stored under cover and kept dry.

7 General

7.1 The Hydrotech Monolithic Membrane 6125 Damp-proofing System is satisfactory for use as a sandwich membrane, for above- and below-ground waterproofing within a structure of concrete, brickwork, blockwork or masonry, or as a damp-proof membrane for solid floors.

7.2 The membrane is compatible with the substrate and is resistant to those chemicals likely to occur in normal practice.

7.3 Where contact with materials used as damp-proof courses is likely, consideration must be given to the thermal stability of that material, due to the high temperatures reached during installation.

8 Weathertightness



8.1 It is confirmed from test data that the membrane will adequately resist the passage of moisture to the inside of the building and so comply with the relevant requirements of the national Building Regulations:

England and Wales

Approved Document C4, Requirement C4, Section 5.1

Scotland

Regulation 17, Standard G2.6

Northern Ireland

Regulation C5.

8.2 The membrane is impervious to water and, when used in accordance with this Certificate, will act as a waterproofing layer capable of accepting minor structural movements without damage.

9 Adhesion

9.1 Tests indicate that the adhesion of the membrane to substrates is satisfactory.

9.2 The membrane can accommodate the minor structural movement likely to occur under normal service conditions when the product is used over construction or bridging joints (the methods described in section 15.4 should be followed).

10 Resistance to puncture

10.1 Tests indicate that provided no sharp objects are present on its surface prior to and during installation of the protective layer, the membrane will not be damaged by normal foot traffic.

10.2 Whilst the membrane can withstand distributed loads, it can be damaged by concentrated point loads and these should be avoided.

11 Effects of temperature

The membrane can be installed in the lowest site working temperatures likely to be experienced in

12 Maintenance and repair

Damage to the membrane can be adequately repaired by patching, in accordance with the manufacturer's installation manual.

13 Durability



The Hydrotech Monolithic Membrane 6125 Damp-proofing System, when 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.

Installation

14 General

14.1 The Hydrotech Monolithic Membrane 6125 Damp-proofing System must be installed in accordance with the relevant requirements of CP 102 : 1973 and BS 8102 : 1990.

14.2 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 should be conditioned with Hydrotech Surface Conditioner or other Certificate holder approved bitumen conditioner (at a coverage rate of between $8 \text{ m}^{-2}\text{l}^{-1}$ and $16 \text{ m}^{-2}\text{l}^{-1}$) and allowed to dry before application of membrane.

14.3 Vertical surfaces of brickwork and blockwork should be rendered to provide an even surface. Brickwork or blockwork not rendered must be flush pointed to give a smooth surface without sudden changes in level.

14.4 The membrane must be covered with a protective layer, in accordance with manufacturer's instructions, as soon as possible after installation.

15 Procedure

15.1 Hydrotech is heated in a propane-fired, mechanically agitated heater, which has a double jacket containing a heat transfer mineral oil, and fitted with thermometers to measure the melt and oil temperatures. Air-jacketed melters may also be used.

15.2 The nominal temperature range for the molten Hydrotech is between 175°C and 218°C , although, in certain circumstances, it can be used between 160°C and 230°C . The temperature of the melt should never exceed 230°C .

15.3 The melt is discharged from the heater into a container capable of holding the melt, and applied to the substrate using long-handled, rubber-bladed squeegees.

17 Other investigations

17.1 The manufacturing process was examined including the methods adopted for quality control.

17.2 Visits were made to sites to assess the practicability of installation.

Table 3 Physical properties — reinforced membrane

Test (units)	Method*	Mean result
Mass per unit area ⁽¹⁾ (kgm ⁻²)	MOAT 31 : 6B	27
Dimensional stability ⁽²⁾	MOAT 27 : 5.1.6.1	+0.32
Low temperature flexibility (°C)	MOAT 27 : 5.4.2	
Flex-Flash F		-28 ⁽³⁾
Flex-Flash UN		-28 ⁽³⁾
Aged ⁽⁴⁾		
Flex-Flash F		-20
Flex-Flash UN		-
Aged ⁽⁵⁾		
Flex-Flash F		-5
Flex-Flash UN		>+10

(1) Using Flex-Flash F as reinforcement.

(2) Using Flex-Flash UN as reinforcement.

(3) -28°C was lowest temperature tested.

(4) Aged 56 days at 70°C.

(5) Aged 180 days at 70°C.

- No measurement carried out.

*The test documents are listed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

Table 4 Service performance — reinforced membrane

Test (units)	Method*	Mean result
Water vapour permeability ⁽¹⁾ 75% RH/25°C [gm ⁻² (24h) ⁻¹]	BS 3177	0.18
Water vapour resistance (MNs ^g ⁻¹)	BS 3177	1140
Resistance to cracking at 0°C	DOT spec, Part C(iv)	No cracks
Flex-Flash F		No cracks
Flex-Flash UN		No cracks
at 20°C		
Flex-Flash F		No cracks
Flex-Flash UN		No cracks
Resistance to cyclic movement ⁽²⁾ unaged	MOAT 31 : 6K	No damage after 500 cycles
aged ⁽³⁾		No damage after 200 cycles
Chisel impact 10°C	DOT spec, Part C(v)	All impacts 2
0°C		All impacts 3
Screed resistance		No visible penetration
Slip resistance (mm)	MOAT 27 : 5.1.7	
4 days		30
7 days		30
Resistance to static indentation	MOAT 27 : 5.1.9	
Flex-Flash F		L ₁
Flex-Flash UN		L ₃
Resistance to peel concrete substrate	MOAT 27 : 5.1.3	34
7 days water immersion concrete substrate		24

(1) Membrane reinforced with Flex-Flash F.

(2) Membrane reinforced with Flex-Flash UN.

(3) Aged 28 days at 70°C.

*The test documents are listed in the *Bibliography*. Numbers in the tables refer to the sections/parts of the various documents.

Bibliography

BS 2000 *Methods of test for petroleum and its products*

Part 58 : 1983 — *Softening point of bitumen (Ring and Ball)*

BS 2782 *Methods of testing plastics*

Part 4 *Chemical properties*

Methods 430A to 430D : 1983 *Determination of water absorption at 23°C. Determination of water absorption at 23°C with allowance for water-soluble matter. Determination of boiling water absorption. Determination of boiling water absorption with allowance for water-soluble matter*

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

BS 8102 : 1990 *Code of practice for protection of 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 *Directive for the Assessment of Roof Waterproofing systems*

MOAT No 31 : 1984 *Special Directives for the Assessment of Reinforced Homogeneous Waterproof Coverings of Styrene-Butadiene-Styrene (SBS) Elastomer Bitumen*

ASTM D 3407-78 *Joint Sealants, hot-poured, for concrete and asphalt pavements*

DOT spec, Part C *Department of Transport checks and tests for Bridge Deck Waterproofings*

Conditions of Certification

18 Conditions

18.1 This Certificate:

- (a) relates only to the product that is described, installed, used and maintained as set out in this Certificate;
- (b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;
- (c) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;
- (d) is copyright of the BBA.

18.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, shall be construed as references to such publication in the form in which it was current at the date of this Certificate.

18.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabricating process(es) thereof:

- (a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;

(b) continue to be checked by the BBA or its agents; and

(c) are reviewed by the BBA as and when it considers appropriate.

18.4 In granting this Certificate, the BBA makes no representation as to:

- (a) the presence or absence of any patent or similar rights subsisting in the product or any other product;
- (b) the right of the Certificate holder to market, supply, install or maintain the product; and
- (c) the nature of individual installations of the product, including methods and workmanship.

18.5 Any recommendations relating to the use or installation of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the installation and use of this product.



In the opinion of the British Board of Agrément, the Hydrotech Monolithic Membrane 6125 Damp-proofing System is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 90/2432 is accordingly awarded to Alumasc Exterior Building Products Ltd.

On behalf of the British Board of Agrément

A handwritten signature in black ink, appearing to read 'P. C. Newson'.

Date of Third issue: 8th May 2000

Chief Executive

**Original Certificate issued 13th March 1990, with a Second issue on 24th September 1997. This revised version issued to include change of Certificate holder's name, address, telephone and facsimile numbers, reference to the revised Building Regulations and associated text, the inclusion of the CDM Regulations and new Conditions of Certification.*