



Visqueen Building Products

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**Agrément
Certificate
No 94/3009**
*Third issue**

Designated by Government
to issue
European Technical
Approvals

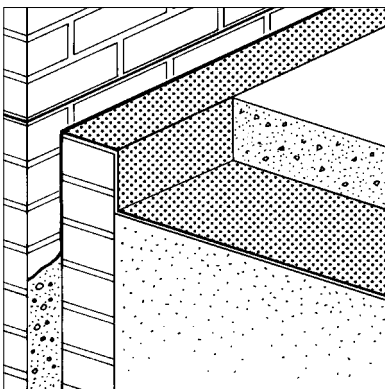
VISQUEEN BUILDING PRODUCTS DAMP-PROOF MEMBRANE

Membrane étanche à l'humidité
Feuchtigkeitssperre

Product


• THIS CERTIFICATE REPLACES CERTIFICATE No 87/1846 AND RELATES TO VISQUEEN BUILDING PRODUCTS DAMP-PROOF MEMBRANE, A LOW-DENSITY POLYETHYLENE MEMBRANE FOR USE IN SOLID CONCRETE GROUND FLOORS NOT SUBJECT TO HYDROSTATIC PRESSURE, TO PROTECT BUILDINGS AGAINST MOISTURE FROM THE GROUND.

- The product is available in thicknesses of 250 µm, 300 µm and 500 µm.
- It is essential that the product is laid in accordance with the recommendations of clause 11 of CP 102 : 1973 or with this Certificate.




Regulations

1 The Building Regulations 2000 (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, Visqueen Building Products Damp-proof Membrane, 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:	The product will meet this Requirement. See sections 8.1 and 8.2 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The product is an acceptable material. See section 13.1 of this Certificate.

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

 In the opinion of the BBA, Visqueen Building Products Damp-proof Membrane, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and related Technical Standards as listed below.

Regulation: 10	Fitness of materials
Standards: B2.1 and B2.2	Selection and use of materials, fittings, and components, and workmanship
Comment:	The product complies with these Standards. See section 13.1 of this Certificate.
Regulation: 17	Resistance to moisture
Standard: G2.6	Preparation of a site and resistance to moisture from ground — Resistance to moisture from the ground
Comment:	The product can enable a floor to satisfy the requirements of this Standard. See sections 8.1 and 8.2 of this Certificate.

3 The Building Regulations (Northern Ireland) 2000

 In the opinion of the BBA, Visqueen Building Products Damp-proof Membrane, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Building Regulations as listed below.

Regulation: B2	Fitness of materials and workmanship
Comment:	The product is an acceptable material. See section 13.1 of this Certificate.
Regulation: C4	Resistance to ground moisture and weather
Comment:	The product can enable a floor to satisfy the requirements of this Regulation. See sections 8.1 and 8.2 of this Certificate.

4 Construction (Design and Management) Regulations 1994 (as amended) Construction (Design and Management) Regulations (Northern Ireland) 1995 (as amended)

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

See section: 5 Description (5.1).

Technical Specification

5 Description

5.1 Visqueen Building Products Damp-proof Membrane is blown film of extruded low-density polyethylene (PE-LD) and has nominal characteristics given in Table 1.

Table 1 Nominal characteristics

	Nominal value			Tolerance (%)
	250	300	500	
thickness (µm)	250	300	500	±12 ⁽¹⁾
roll width (m) ⁽²⁾	2 or 4	2 or 4	2 or 4	±2.5
roll length (m)	25	25	12.5	+10 -0
roll weight (kg)	23	27.6	23	+10 -0
colours ⁽²⁾	black and blue			

(1) Single value ≥ 80% nominal in accordance with Draft MOAT No 61 : January 1998 *Guideline for the assessment of polyethylene damp-proof membranes.*

(2) Other widths and colours are available to order.

5.2 Standard rolls are multi-folded for easier handling. Centre-folded rolls are also available.

5.3 Quality control checks are carried out to determine:

- density
- melt flow indices
- dimensions of finished product.

6 Delivery and storage

6.1 Rolls are supplied on pallets, in wrappers bearing the manufacturer's and product names, and the BBA identification mark incorporating the number of this Certificate.

6.2 Rolls should be stored under cover and protected from sunlight.

Design Data

7 General

7.1 Visqueen Building Products Damp-proof Membrane is suitable for use in concrete floors not subject to hydrostatic pressure, in accordance with the relevant clauses of CP 102 : 1973.

7.2 The product can be installed either as an oversite membrane, between a blinded hard core bed and the base concrete, or as a sandwich membrane in base concrete or between the base concrete and the screed.

7.3 The 300 µm and 500 µm membranes meet the requirements for use as a gas control membrane against radon or on gas-contaminated land in accordance with the recommendations published by the Building Research Establishment (BRE) and the national Building Regulations.

8 Resistance to water and water vapour



8.1 The membranes and the methods of jointing provide an effective barrier to the passage of liquid water and water vapour from the ground.

8.2 The 250 membrane has a nominal sheet thickness of at least 250 µm (1000 gauge) and the 300 and 500 membranes have a nominal sheet thickness greater than 250 µm, and therefore comply with the requirements of the national Building Regulations, if installed in the manner described in the relevant documents, or in accordance with section 14 of this Certificate (Scotland only):

England and Wales

Approved Document C, Requirement C4, Section 3.3

Scotland

Regulation 17, Standard G2.6

Northern Ireland

Regulation C4.

9 Resistance to puncture

The product has a high resistance to puncture. On smooth or blinded surfaces it will not be damaged by normal foot or site traffic (eg wheelbarrows) but care should be taken during installation, particularly when handling building materials and equipment over the surface and when placing concrete or screeds, since the material can be punctured by sharp objects.

10 Site conditions

10.1 The product may be installed in all conditions normal to ground-floor slab construction. Where there is a risk of ground becoming waterlogged, sub-soil drainage must be provided in accordance with CP 102 : 1973.

10.2 The membranes remain flexible in the extremes of temperature likely to occur in practice.

11 Underfloor heating


There will be no adverse effect on the membranes from underfloor heating under normal operating

conditions. The Certificate holder's advice should also be sought.

12 Floor finishes

The type of floor finish to be used may limit the suitability of polyethylene damp-proof membranes; the guidance given in CP 102 : 1973 should be followed.

13 Durability

 13.1 When subject to the normal conditions of use, the membranes will provide an effective barrier to the transmission of liquid water and water vapour for the life of the concrete slab in which they are installed.

13.2 Exposure to ultraviolet light will reduce the effectiveness of the membrane. The membrane should be protected from such exposure during storage and in use.

Installation

14 General

14.1 Installation of Visqueen Building Products Damp-proof Membrane must be in accordance with the manufacturer's instructions, and clause 11 of CP 102 : 1973, the relevant clauses of BS 8000-4 : 1989, or section 15 of this Certificate.

14.2 Unless the base is smooth, a surface blinding of soft sand (or similar material) should be used to prevent puncture of the membrane during installation or when the concrete or screed is being placed.

14.3 Sheets must be clean and free from dirt and grease.

15 Procedure

15.1 Adjacent sheets should be overlapped by at least 150 mm and should be bound with mastic strips and sealed with 100 mm wide girth jointing tape (see Figure 1).

15.2 Alternatively, when it is not possible to keep the sheet dry, a double welted fold should be formed using at least 300 mm of the membrane; it is essential that a weight, eg bricks, is used to maintain the fold in position prior to placing the concrete (see Figure 2).

15.3 Perforations or punctures in the sheets should be patched with sheets of identical thickness, lapped at least 150 mm beyond the limits of the puncture and sealed with double-sided pressure sensitive tape.

15.4 The damp-proof membrane must be continuous with the damp-proof course in the surrounding walls. Where necessary the product should be used as a vertical damp-proof course to link the two.

15.5 The membranes must be covered by a screed or other protective layer as soon as possible after installation. Care should be taken to ensure that the membrane is not stretched or displaced when placing the concrete or screed over the membrane. Sufficient allowance should be made to avoid bridging (ie creating areas of unsupported membrane) during screeding operations, for example at internal angles.

Figure 1 Mastic tape joint

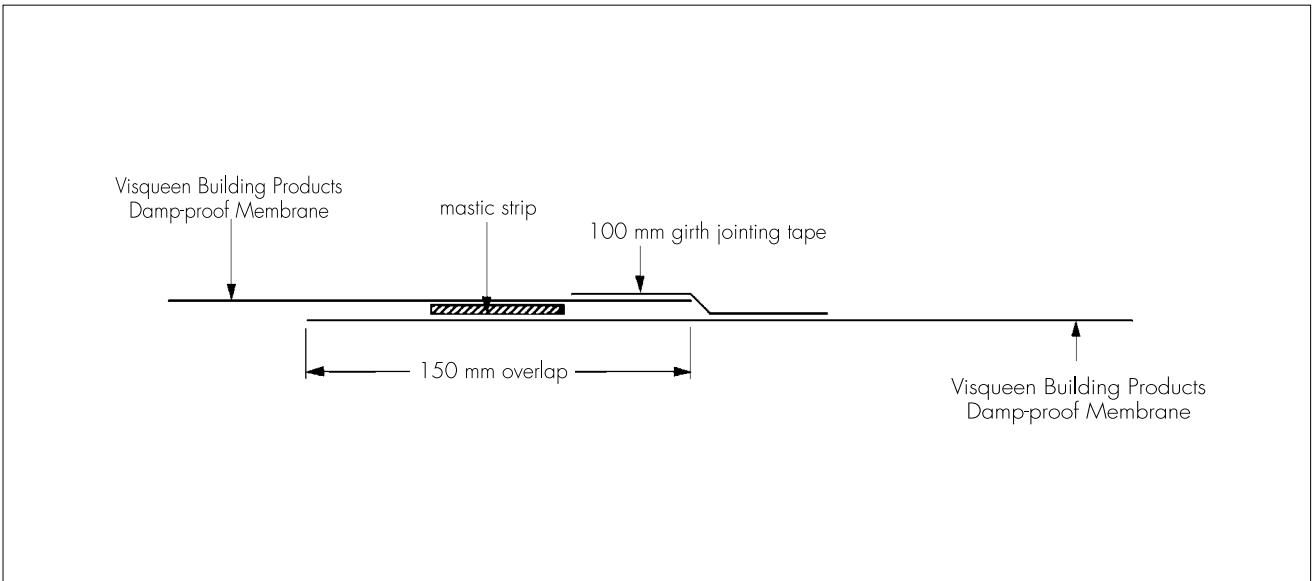
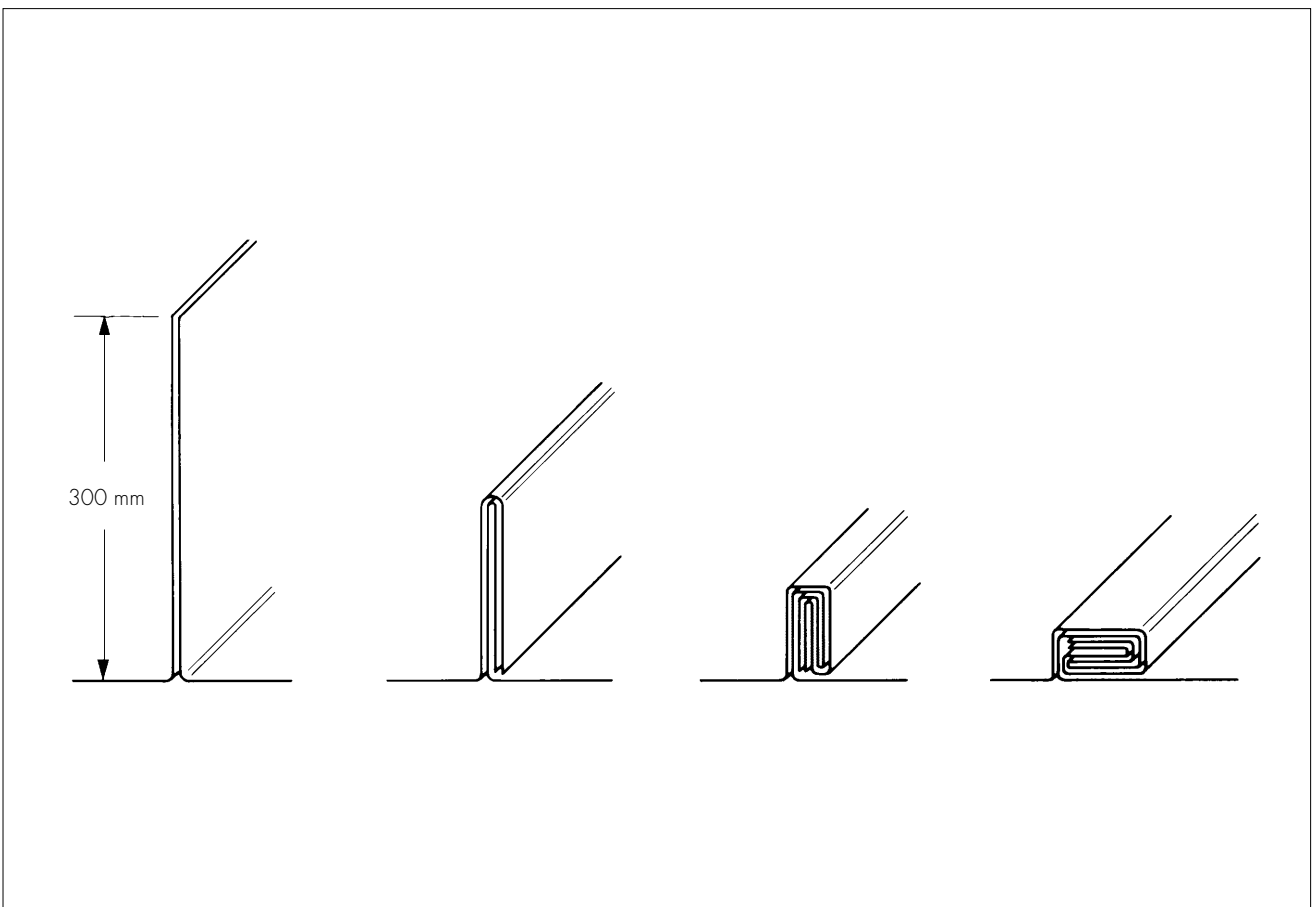


Figure 2 Double welted fold joint



Technical Investigations

The following is a summary of the technical investigations carried out on Visqueen Building Products Damp-proof Membrane.

16 Tests

Samples of membrane were obtained from the manufacturer for testing. A summary of tests showing typical values for the material is detailed in Tables 1 and 2.

Table 1 Physical properties — general

Test (units)	Method ⁽¹⁾	Mean results		
		Nominal thickness of sheets (mm)		
		0.25 ⁽²⁾	0.30 ⁽³⁾	0.50 ⁽³⁾
Thickness (mm)	Direct measurement	0.25	0.31	0.51
Sheet width (m)	Direct measurement	4.00	4.10	3.90
Weight per unit surface area (kgm ⁻²)	Direct measurement	0.28	0.28	0.46
Density (kgm ⁻³)	BS 2782 : 620A	930.0	924.6	—
Melt flow index (190, 45) (g per 120s)	BS 2782 : 720A	0.53	0.30	—
Resistance to water vapour transmission rate (gm ⁻² day ⁻¹)	BS 3177 (25°C/75% RH)	0.40	0.35	—
		resistivity [MNs(gm ⁻¹)]	513.0	586.2

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the document.

(2) Black material tested.

(3) Blue tint material tested.

— = not tested.

Table 2 Physical properties — directional

Test (units)	Method ⁽¹⁾	Mean results		
		Longitudinal	Transverse	
Tensile strength (at break) (Nmm ⁻²)	BS 2782 : 320A Test speed: 100 mm min ⁻¹	controls	24.90	24.70
		heat aged ⁽²⁾	24.90	23.80
		UV aged ⁽³⁾	21.8	23.8
Elongation (at break) (%)	BS 2782 : 320A Test speed: 100 mm min ⁻¹	controls	683	775
		heat aged ⁽²⁾	715	763
		UV aged ⁽³⁾	661	760
Tear resistance (trouser tear) (Nmm ⁻¹)	BS 2782 : 360B	controls	97	140
		heat aged ⁽²⁾	102	141
Tear strength (nail tear) (N)	MOAT 27 : 5.4.1	controls	100	108
		heat aged ⁽²⁾	85	90
Dimensional stability (18 hrs, 60°C)	MOAT 27 : 5.4.1	0.25 mm thickness	-0.10	+0.18
		0.30 mm thickness	+0.14	+0.17
		0.50 mm thickness	+0.80	+0.09
Low temperature flexibility (at -25°C, 20 mm ø mandrel)	MOAT 27 : 5.4.2	satisfactory	satisfactory	

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the document.

(2) Heat aged at 80°C for 56 days.

(3) UV aged for 100 hours in a QUV accelerated agency cabinet (generally in accordance with ASTM G 53-77: 4 hours UV at 45°C, 4 hours condensation at 45°C).

17 Investigations

17.1 A re-examination was made of the data and investigations on which the previous Certificate was based, including surveys of known users.

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

Bibliography

BS 2782-3 : Methods 320A to 320F : 1976

Methods of testing plastics — Mechanical properties — Tensile strength, elongation and elastic modulus

BS 2782-3 : Method 360B : 1991 *Methods of testing plastics — Mechanical properties — Determination of tear resistance of plastics film and sheeting by the trouser tear method*

BS 2782-6 : Method 620B : 1980 *Methods of testing plastics — Dimensional properties — Determination of density of solid plastics excluding cellular plastics (pycnometer method)*

BS 2782-7 : Method 720A : 1997 *Methods of testing plastics — Rheological properties — Determination of the melt mass-flow rate (MRF) and the melt volume-flow rate (MVR) of thermoplastics*

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

BS 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*

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*

ASTM G 53-77 *Standard recommended practice for operating light and water-exposure apparatus (fluorescent UV-condensation type) for exposure of non-metallic materials*

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, Visqueen Building Products Damp-proof Membrane is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 94/3009 is accordingly awarded to Visqueen Building Products.

On behalf of the British Board of Agrément

Date of Third issue: 31st March 2003

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

Chief Executive

**Original Certificate issued 29 March 1994. This amended version includes revised national Building Regulations, addition of CDM Regulations, addition of blue colour to product and reference to Draft MOAT No 61: January 1998 tolerance in Table 1.*

Electronic Copy

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front page).
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Certificate, including validity and
scope, tel: Hotline 01923 665400,
or check the BBA website.