



Visqueen Building Products

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**Agrément
 Certificate
 No 94/3059**
*Second issue**

Designated by Government
 to issue
 European Technical
 Approvals

ZEDEX HIGH PERFORMANCE DAMP-PROOFING SYSTEM

Couche d'étanchéité pour murs
 Feuchtigkeitssperre im Wandbereich

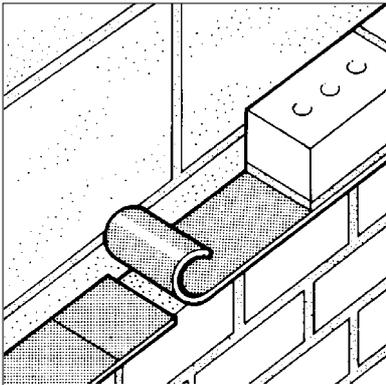
Product

• *THIS CERTIFICATE RELATES TO ZEDEX HIGH PERFORMANCE DAMP-PROOFING SYSTEM.*

• *The products are for use to provide horizontal, vertical or stepped damp-proof courses, in either solid or cavity walls of brick, block, stone or concrete.*

• *The products are manufactured and marketed by Visqueen Building Products.*

These Front Sheets must be read in conjunction with the accompanying Detail Sheets, which provide information specific to the damp-proof course.



Regulations — Detail Sheet 1

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

 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 courses with the Building Regulations. In the opinion of the BBA, Zedex High Performance Damp-proofing System, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements.

Requirement: A1	Loading
Comment:	The products will not extrude under load, up to the point of failure of the wall, and will not adversely affect the ability of a properly designed and built wall to sustain and transmit compression loads. The presence of a dpc can reduce the shear and tensile strength of a wall at that point, and design may need to take account of this. See section 6.1 of these Front Sheets.
Requirement: C4	Resistance to weather and ground moisture
Comment:	Properly installed in a correctly designed structure, the products form effective barriers to the movement of water within the wall, enabling compliance with this Requirement. See section 7 of these Front Sheets.
Requirement: Regulation 7	Materials and workmanship
Comment:	The products are acceptable materials. See section 9 of these Front Sheets.

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

 In the opinion of the BBA, Zedex High Performance Damp-proofing System, 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
Standard: B2.1	Selection and use of materials, and components
Comment:	The products comply with this Standard. See section 9 of these Front Sheets.
Regulation: 11	Structure
Standard: C2.1	Construction
Comment:	The products will not extrude, up to the point of failure of the wall, and will not adversely affect the ability of the properly designed and built wall to sustain and transmit compression loads. See section 6.1 of these Front Sheets.
Regulation: 17	Preparation of sites and resistance to moisture
Standard: G2.6	Resistance to moisture from the ground
Standard: G3.1	Resistance to precipitation
Comment:	Properly installed in a correctly designed structure, the products form an effective barrier to the movement of water within the wall, enabling compliance with these Standards. See section 7 of these Front Sheets.

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



In the opinion of the BBA, Zedex High Performance Damp-proofing System, 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 products are acceptable materials. See section 9 of these Front Sheets.
Regulation:	C5	Resistance to ground moisture
Comment:		Properly installed in a correctly designed structure, the products form an effective barrier to the movement of water within the wall, enabling compliance with this Regulation. See section 7 of these Front Sheets.
Regulation:	D1	Stability
Comment:		The products will not extrude, up to the point of failure of the wall, and will not adversely affect the ability of a properly designed and built wall to sustain and transmit compression loads. See section 6.1 of these Front Sheet.

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 section: 1 *Description* (1.2) of each Detail Sheets.

Design Data

5 General

Zedex High Performance Damp-proofing System, provides satisfactory horizontal, vertical, or stepped damp-proof coursing (including cavity trays) in either solid or cavity walls of masonry. General standards of good design practice are given in BS 5628-3 : 1985.

6 Behaviour under load



6.1 The products will not extrude under load, up to the point of compressive failure of the wall; and will not adversely affect the ability of a properly designed and built wall to sustain and transmit compression. The stability of a wall in respect of lateral loads must be checked in relation to the stresses permitted between the dpc and the mortar. The characteristic stresses for design purposes and further guidelines are available from the Certificate holder.

6.2 The products will withstand considerable movement of the wall, and are unlikely to be

impaired by normally occurring movements up to the point where the wall itself is deemed to have failed.

7 Resistance to water and water vapour



The products will provide effective barriers against liquid water and water vapour either from a source external to the structure or from one part of a structure to another.

8 Compatibility with other materials

The products are compatible with all materials with which they will be in contact within normal construction. They are unlikely to be affected by timber preservatives that are water-based solutions of salts. Where there is doubt in the compatibility with materials in contact, the advice of Certificate holder should be sought.

9 Durability



Artificial ageing tests indicate that a satisfactory retention of physical properties is achieved. When properly specified and installed, Zedex High Performance Damp-proofing System will in normal circumstances remain effective during the lifetime of the building.

Bibliography

BS 5628 *Code of practice for use of masonry*
BS 5628-3 : 1985 *Materials and components, design and workmanship*

Conditions of Certification

10 Conditions

10.1 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.

10.2 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.

10.3 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.

10.4 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.

10.5 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, Zedex High Performance Damp-proofing System is fit for its intended use if used as set out in this Certificate. Certificate No 94/3059 is accordingly awarded to Visqueen Building Products.

On behalf of the British Board of Agrément

Date of Second issue: 25th July 2000

Chief Executive

*Original Certificate issued on 26th October 1994. The amended version includes reference to revised national Building Regulations, addition of CDM Regulations, change of Certificate holder's name and new Conditions of Certification.

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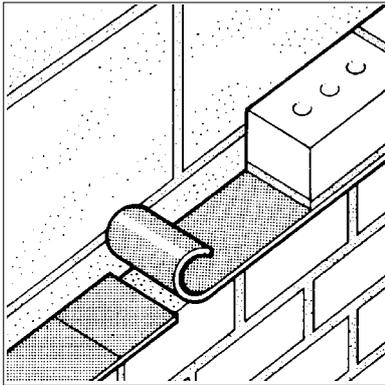
Visqueen Building Products

Certificate No 94/3059

ZEDEX HIGH PERFORMANCE DAMP-PROOF COURSE

DETAIL SHEET 2
Second issue*

Product



• THIS DETAIL SHEET RELATES TO ZEDEX HIGH PERFORMANCE DAMP-PROOF COURSE, FLEXIBLE SHEET MATERIALS, FOR USE TO PROVIDE HORIZONTAL, VERTICAL OR STEPPED DAMP-PROOF COURSES IN EITHER SOLID OR CAVITY WALLS OF BRICK, BLOCK, STONE OR CONCRETE.

• The product must be installed in accordance with the manufacturer's instructions, relevant British Standards, Codes of Practice and this Certificate.

This Detail Sheet must be read in conjunction with the Front Sheets, which give the product's position regarding the Regulations, general information relating to the product and the Conditions of Certification, respectively.

Technical Specification

1 Description

1.1 Zedex High Performance Damp-proof Course is a flexible sheet comprising a mixture of thermoplastic polymers and other additives, extruded into sheet form, reeled into rolls and cut to width.

1.2 Rolls of Zedex High Performance Damp-proof Course are manufactured to the dimensions given in Table 1. The rolls are available in white, black, sandstone, brown and terracotta. Other colours are available upon request.

Table 1 Nominal dimensions

	Dimensions (units)	
	800	1100
Nominal thickness (mm)	0.8	1.1
Nominal weight (kgm ⁻²)	0.750	1.035
Roll length (m)	20	20
Range of roll widths (mm)*	100 to 1500	100 to 1500

*Widths cut to order.

1.3 Quality control on the finished products include checks on:

dimensions
appearance
tensile strength
elongation at break.

2 Delivery to site and storage

2.1 Zedex High Performance Damp-proof Course is delivered to site in rolls, secured with a wrapper bearing the manufacturer's name, product grade and the BBA identification mark incorporating the number of this Certificate.

2.2 The rolls may be stored either on end or on their sides.

Installation

3 General

3.1 Installation of Zedex High Performance Damp-proof Course is similar to that of traditional flexible dpc materials. A sharp knife is necessary to cut the materials. Work can be carried out under all weather conditions normal to the construction of walls. The material retains sufficient flexibility to be installed at low temperatures and does not become tacky under warm conditions.

3.2 Installation must follow normal good practice for the detailing of damp-proof courses, as set out in BS 5628-3 : 1985 and must be in accordance with the relevant clauses of BS 8000-3 : 1989, BS 8215 : 1991, BRE Digest 380 *Damp-proof course*, and the manufacturer's instructions.

3.3 As with all flexible Damp-proof Course's, care should be taken to avoid impact damage (eg chisel) from sharp objects during installation.

4 Procedures

4.1 The product must extend through the full thickness of the wall or wall lead, including pointing, applied rendering or other facing materials.

4.2 The product must be laid on a wet, even bed of mortar, and perforations in adjacent courses of brickwork must be completely filled with mortar.

4.3 The product must not be damaged by cavity cleaning after installation.

4.4 Precautions to be taken during subsequent work are:

- (a) use of cavity battens to prevent mortar droppings from reaching the dpc,
- (b) removal of droppings before they harden
- (c) implements such as steel rods should never be used for cleaning the cavity
- (d) inspection of cavity trays for damage as work proceeds.

4.5 When using the product with boot lintels or similar constructions, it is recommended that the material is installed to follow the lintel profile.

Technical Investigations

The following is a summary of the technical investigations carried out on the Zedex High Performance Damp-proof Course.

5 Tests

A sample of Zedex High Performance Damp-proof Course (800 µm) was obtained from the manufacturer for the purpose of testing. Tests performed by the BBA, which give the typical results for the materials, are summarised in Tables 2 to 3.

Table 2 Physical properties — general

Test (units)	Method*	Mean result
Weight (kgm ⁻²)		0.8
Water vapour permeability [gm ⁻² (24h) ⁻¹]	BS 3177 : 1959 (25°C/75% RH)	0.21
Water vapour resistance (MNsg ⁻¹)	BS 3177 : 1959 (25°C/75% RH)	976
Water absorption (%)	BS 2782 : 430A	0.16
Resistance to water pressure	MOAT 27 : 5.1.4 (6 metre head)	satisfactory
Resistance to impact	T1/13 ⁽¹⁾	
0°C		satisfactory
23°C		satisfactory

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

(1) BBA Test Method T1/13 Resistance to chisel impact of a waterproofing membrane.

Table 3 Physical properties — directional

Test (units)	Method*	Mean results	
		Longitudinal	Transverse
Tensile strength (Nmm ⁻²)	BS 2782 : 320A (500 mm min ⁻¹)		
unaged		11.4	11.3
heat aged ⁽¹⁾		11.2	11.7
water soak ⁽²⁾		11.6	11.8
Elongation at break (%)	BS 2782 : 320A (500 mm min ⁻¹)		
unaged		691	761
heat aged ⁽¹⁾		688	803
water soak ⁽²⁾		680	788
Low temperature flexibility (°C)	MOAT 27 : 5.4.2		
unaged		-20	-20
heat aged ⁽¹⁾		-20	-20
water soak ⁽²⁾		-20	-20
Trouser tear (Nmm ⁻¹)	BS 2782 : 360B	117.9	118.7
Nail tear (N)	MOAT 27 : 5.4.1	196	190
Dimensional stability (%)	MOAT 27 : 5.1.6.1	-0.37	-0.29

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

(1) Heat aged 56 days at 60°C

(2) Water soaked 28 days at 23°C

6 Other investigations

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

6.2 An examination was made of reports of shear and flexure tests carried out to DD 86-1 : 1983. The results were found to be satisfactory.

6.3 An assessment of the compatibility of the product with chemicals it is likely to come into contact with was made.

Bibliography

BS 2782 *Methods of testing plastics*
BS 2782-3 *Mechanical properties*
BS 2782-3 : Methods 320A to 320F :
1976(1986) *Tensile strength, elongation and
elastic modulus*
BS 2782-3 : Method 360B : 1991 *Determination
of tear resistance of plastics film and sheeting by
the trouser tear method*
BS 2782-4 *Chemical properties*
BS 2782-4 : Method 430A : 1983 *Determination
of water absorption at 23°C*

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

BS 5628 *Code of practice for use of masonry*
BS 5628-3 : 1985 *Materials and components,
design and workmanship*

BS 8000 *Workmanship on building sites*
BS 8000-3 : 1989 *Code of practice for masonry*

BS 8215 : 1991 *Code of practice for design and
installation of damp-proof courses in masonry
construction*

DD 86 *Damp-proof courses*
DD 86-1 : 1983 *Methods of test for flexural bond
strength and short term shear strength*

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



On behalf of the British Board of Agrément

Date of Second issue: 25th July 2000

Chief Executive

**Original Detail Sheet issued on 26th October 1994. This amended version includes change of Certificate holder's name and additional product colours.*

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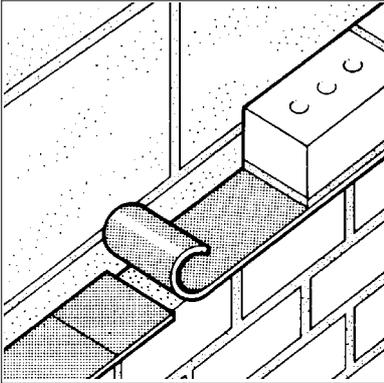
Visqueen Building Products

ZEDEX HOUSING GRADE
DAMP-PROOF COURSE

Certificate No 94/3059

DETAIL SHEET 3

Product



• THIS DETAIL SHEET RELATES TO ZEDEX HOUSING GRADE DAMP-PROOF COURSE.

- The product is for use in new domestic constructions in horizontal, vertical and stepped positions.
- The product has not been assessed for use as cavity trays.
- The product may also be used in conjunction with beam and block flooring.

This Detail Sheet must be read in conjunction with the Front Sheets, which give the product's position regarding the Building Regulations, general information relating to the product, and the Conditions of Certification, respectively.

Technical Specification

1 Description

1.1 Zedex Housing Grade Damp-proof Course is a black sheet material comprising a mixture of thermoplastic polymers and additives.

1.2 The material is manufactured to the dimensions of:

nominal thickness (mm)	0.65
minimum thickness (mm)	0.55
minimum weight/unit area (kgm ⁻²)	0.61
minimum roll length (m)	20.0
standard roll widths (mm)	100 to 1500

1.3 The product is manufactured by compounding, mixing and calendaring the ingredients into a continuous sheet of the required thickness.

1.4 The sheet is cooled and rolled. Each roll is checked for thickness before cutting to the widths and lengths required.

1.5 Quality control on the finished product includes checks on:

thickness
width and length
tensile strength (transverse and longitudinal)
elongation (transverse and longitudinal).

2 Delivery to site and storage

2.1 The product is delivered to site in rolls, secured with a wrapper bearing the manufacturer's name and the BBA identification mark incorporating the number of this Certificate.

2.2 Rolls must be stored on end and under cover.

Design Data

3 General

3.1 Zedex Housing Grade Damp-proof Course provides satisfactory horizontal, vertical, or stepped damp-proof coursing (excluding cavity trays) in new domestic constructions, in either solid or cavity wall using brick, block, stonework or concrete. General standards of good design practice are given in BS 5628-3 : 1985.

3.2 The product may also be used in conjunction with beam and block flooring.

4 General

4.1 Installation of Zedex Housing Grade Damp-proof Course must follow normal good practice for the detailing of damp-proof courses, as set out in BS 5628-3 : 1985, and must be in accordance with the relevant clauses of BS 8000-3 : 1989, BS 8215 : 1991, BRE Digest 380, *Damp-proof course* and the manufacturer's instructions.

4.2 A sharp knife is necessary to cut the product. The product retains sufficient flexibility to be used at the lowest temperatures and weather conditions normal to the construction of walls and does not become tacky in warm conditions.

5 Procedure

5.1 The dpc must extend through the full thickness of the wall leaf, including pointing, applied rendering or other facing material.

5.2 The dpc must be laid on an even bed of mortar, and perforations in adjacent courses of brickwork must be completely filled with mortar.

5.3 All lap joints in the dpc must have a minimum 100 mm overlap and be completely sealed.

5.4 Cavities should be cleaned using traditional methods to ensure no mortar bridging occurs.

5.5 When using the product with boot lintels or similar constructions, it is recommended that the dpc is installed to follow the lintel profile.

Beam and block flooring

5.6 When used with beam and block flooring the dpc may be laid dry on a brick or block wall, provided that the following conditions are met:

- (1) The minimum bearing of the beam recommended by the flooring system manufacturer is achieved.
- (2) The dead and applied loads upon the dpc via the beam do not exceed 2.5 Nmm^{-2} .
- (3) The surface of the wall onto which the dpc and the beam are to be installed is clean, smooth and free from all projections or perforations. Failure to comply with this requirement could lead to perforation of the dpc. If the requirement cannot be met then the dpc should be laid in an even bed of mortar.
- (4) Any loose aggregate is swept from the wall prior to the installation of the dpc, and from the dpc prior to the installation of the beam.

The following is a summary of the technical investigations carried out on Zedex Housing Grade Damp-proof Course.

6 Tests

6.1 Samples of the material were obtained from the manufacturer for testing. The results of tests carried out by the BBA which show typical values for the materials are summarised in Table 1.

Table 2 Product characteristics

Test (units)	Method ⁽¹⁾	Result
Weight per unit area (gm^{-2})	direct measurement	617
Tensile strength (Nmm^{-2})	BS EN ISO 527-1 and 527-3	
machine direction		20.4
cross direction		16.3
Elongation at break (%)	BS EN ISO 527-1 and 527-3	
machine direction		515
cross direction		769
Tear strength (Nmm^{-1})	BS 2782-3 : Method 360B	
machine direction		135
cross direction		149
Dimensional stability (%) free	MOAT 27 : 5.1.6	
machine direction		-2.3
cross direction		+0.6
Water pressure	MOAT 27 : 5.1.4.2	Pass
Water vapour permeability ($\text{gm}^{-2} \text{ day}^{-1}$) 25°C/75% RH	BS 3177	0.3

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

6.2 An examination was made of data on the material relating to:

- resistance to chisel impact on the material built into walling
- long-term point loading
- loading via perforated brick.

7 Other investigations

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 *Methods of testing plastics*
BS 2782-3 *Mechanical properties*
BS 2782-3 : Method 360B : 1980 *Determination of tear strength of sheet and sheeting (trouser tear method)*
BS 3177 : 1959(1995) *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*
BS 5628 *Code of practice for use of masonry*
BS 5628-3 : 1985 *Materials and components, design and workmanship*

BS 8000 *Workmanship on building sites*
BS 8000-3 : 1989 *Code of practice for masonry*
BS 8215 : 1991 *Code of practice for design and installation of damp-proof courses in masonry construction*
BS EN ISO 527 *Plastics. Determination of tensile properties*
BS EN ISO 527-1 : 1996 *General principles*
BS EN ISO 527-3 : 1996 *Test conditions for films and sheets*
MOAT No 27 : 1983 *General Directive for the Assessment of Roof Waterproofing Systems*



On behalf of the British Board of Agrément

Date of issue: 26th February 2001

Chief Executive

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