

## Visqueen Building Products

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Agrément Certificate  
No 94/3059

### ZEDEX HIGH PERFORMANCE DAMP-PROOFING SYSTEM

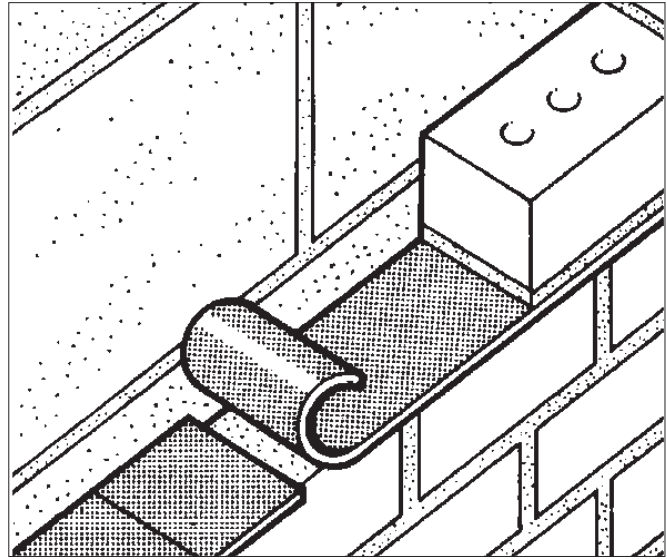
### PRODUCT SHEET 1 — ZEDEX HIGH PERFORMANCE DAMP-PROOF COURSE

#### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to the Zedex High Performance Damp-proof Course, a flexible sheet material, 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 may be used in conjunction with beam and block flooring.

#### 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

**Behaviour under load** — the products will not extrude under load, up to the point of compressive failure of the wall (see section 5).

**Resistance to water and water vapour** — the products will provide an effective barrier against liquid water and water vapour (see section 6).

**Compatibility with other materials** — within normal construction, the products are compatible with all materials with which it will be in contact, with the exception of timber preservatives based on creosote or tar oils (see section 7).

**Durability** — when properly specified and installed, the products in normal circumstances, will remain effective during the lifetime of the building (see section 9).

The BBA has awarded this Agrément Certificate for the Zedex High Performance Damp-proof Course to Visqueen Building Products Ltd as fit for its intended use provided it is installed, used and maintained as set out in this Agrément Certificate.

On behalf of the British Board of Agrément

Head of Approvals  
— Materials

Chief Executive

Date of First issue: 26 October 1994  
Date of Third issue: 25 July 2008

*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](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 Zedex High Performance Damp-proof Course, 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 2000 (as amended) (England and Wales)

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 5.1 of this Certificate.
Requirement:	C2(a)(b)	Resistance to 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 Requirement. See section 6 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The products are acceptable. See section 9 and the Installation part of this Certificate.



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

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The use of the products satisfy the requirements of this Regulation. See sections 8, 9 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards — construction
Standard:	1.1(a)(b)	Structure
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, with reference to clauses 1.1.1 <sup>(1)(2)</sup> and 1.1.3 <sup>(1)(2)</sup> . See section 5.1 of this Certificate.
Standard:	3.4	Moisture from the ground
Standard:	3.10	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, with reference to clauses 3.4.1 <sup>(1)(2)</sup> and 3.10.1 <sup>(1)(2)</sup> . See section 6 of this Certificate.
Regulation:	12	Building standards — conversions
Comment:		All comments given for the products under Regulation 9, 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) 2000 (as amended)

Regulation:	B2	Fitness of materials and workmanship
Comment:		The products are acceptable materials. See section 9 and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The products do not normally require maintenance. See section 8 of this Certificate.
Regulation:	C4(a)	Resistance to ground moisture and weather
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 6 of this Certificate.
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 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: 1 *Description* (1.2).

# Non-regulatory Information

## NHBC Standards 2007

NHBC accepts the use of the Zedex High Performance Damp-proof Course, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.1 *External masonry walls*.

# Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, the Zedex High Performance Damp-proof Course, when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual, Section 3 Substructure, Sub-section dpc and dpm* (page 107).

## General

This Certificate relates to the Zedex High Performance Damp-proof Course, flexible sheet materials, for use as horizontal, vertical, or stepped dpc's including cavity trays, in either solid or cavity walls of brick, block, stone or concrete.

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

## Technical Specification

### 1 Description

1.1 The 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 The rolls are manufactured to dimensions given in Table 1.

Table 1 Nominal dimensions

Characteristic (units)	Grade	
	800	1100
Nominal thickness (mm)	0.8	1.1
Nominal weight (kgm <sup>-2</sup> )	0.750	1.035
Roll length (m)	20	20
Range of roll widths (mm) <sup>(1)</sup>	100 to 1500	100 to 1500
Colour <sup>(2)</sup>	white, black, sandstone, brown and terracotta	

(1) Widths cut to order.

(2) Other colours available.

1.3 Quality control on the finished products include checks on dimensions, appearance, and tensile strength/elongation at break.

### 2 Delivery and site handling

2.1 The products are 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 Rolls may be stored either on end or on their sides and under cover.

## Assessment and Technical Investigations

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

## Design Considerations

### 3 Use

3.1 The Zedex High Performance Damp-proof Course when correctly specified and installed in accordance with this Certificate, provides satisfactory horizontal, vertical, or stepped damp-proof coursing (including cavity trays) in either solid or cavity walls of brick, block, stone or concrete. General standards of good design practice are given in BS 5628-3 : 2005.

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

### 4 Practicability of installation

The products can be installed by experienced bricklayers following the instructions given in the *Installation* part of this Certificate.

### 5 Behaviour under load

5.1 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 the 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.

5.2 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.

## 6 Resistance to water and water vapour



When correctly specified and installed the products will provide an effective barrier against liquid water and water vapour either from a source external to the structure, or from one part of the structure to another.

## 7 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 about the compatibility with materials in contact, the advice of the Certificate holder's should be sought.

## 8 Maintenance



As the products are confined within the wall cavity and have suitable durability (see section 9), maintenance is not required.

## 9 Durability



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

# Installation

## 10 General

10.1 Installation of the Zedex High Performance Damp-proof Course must follow normal good practice for the detailing of damp-proof courses, as set out in BS 5628-3 : 2005, and must be in accordance with the relevant clauses of BS 8000-3 : 2001, BS 8215 : 1991, BRE Digest 380 *Damp-proof courses*, and the Certificate holder's instructions.

10.2 As with all flexible dpc's care should be taken to avoid impact damage from sharp objects (eg chisel) during installation.

## 11 Handling

11.1 The products are handled and cut as conventional flexible damp-proof courses. A sharp knife is necessary to cut them. Work can be carried out under all weather conditions normal to the construction of walls. The products retain sufficient flexibility to be installed at low temperatures and do not become tacky under warm conditions.

11.2 Installation must follow normal good practice. The products retain sufficient flexibility to be used at the lowest temperature at which walls are normally built and do not become tacky in warm, ambient weather conditions.

## 12 Installation practice

12.1 The following installation practices are essential:

- the dpc must extend through the full thickness of the wall or wall lead, including pointing, applied rendering or other facing materials
- the dpc must be laid on a wet, even bed of mortar, and perforations in adjacent courses of brickwork must be completely filled with mortar
- the dpc must not be damaged by cavity cleaning after installation.

12.2 When using the products with boot lintels or similar constructions, it is recommended that the products are installed to follow the lintel profile.

### Beam and block flooring

12.3 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:

- the minimum bearing of the beam recommended by the flooring system manufacturer is achieved
- the dead and applied loads upon the dpc via the beam do not exceed  $2.5 \text{ Nmm}^{-2}$
- 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
- 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.

## 13 Cleaning cavities

As with most other damp-proof course materials, damage can occur during cleaning of mortar droppings from the damp-proof course unless care is taken. The following recommendations should prevent damage occurring:

- cavity battens should be used to prevent excessive amounts of mortar droppings reaching the damp-proof course
- mortar droppings should be removed before they have had time to harden
- implements such as steel rods should never be used for cleaning
- damp-proof courses and cavity trays should be examined for damage as work proceeds.

## Technical Investigations

### 14 Tests

Samples of the Zedex High Performance Damp-proof Course (800  $\mu\text{m}$ ) were obtained from the Certificate holder for the purpose of testing. Tests performed by the BBA, which give typical results for the materials, are in Tables 2 and 3.

Table 2 Physical properties — general

Test (units)	Mean result	Method <sup>(1)</sup>
Weight ( $\text{kgm}^{-2}$ )	0.8	direct measurement
Water vapour permeability [ $\text{gm}^{-2}$ (24 h <sup>-1</sup> )] (25°C/75% RH)	0.21	BS 3177
Water vapour resistance ( $\text{MNsg}^{-1}$ ) (25°C/75% RH)	976	BS 3177
Water absorption (%)	0.16	BS 2782-4.430A
Resistance to water pressure (6 metre head)	satisfactory	MOAT 27 : 5.1.4
Resistance to impact 0°C 23°C	satisfactory satisfactory	T1/13 <sup>(2)</sup>

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

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

Table 3 Physical properties — directional

Test (units)	Mean result		Method <sup>(1)</sup>
	Longitudinal	Transverse	
Tensile strength ( $\text{Nmm}^{-2}$ ) unaged (500 mm min <sup>-1</sup> ) heat aged <sup>(2)</sup> water soak <sup>(3)</sup>	11.4 11.2 11.6	11.3 11.7 11.8	BS 2782-3.320A
Elongation at break (%) unaged (500 mm min <sup>-1</sup> ) heat aged <sup>(2)</sup> water soak <sup>(3)</sup>	691 688 680	761 803 788	BS 2782-3.320A
Low temperature flexibility (°C) unaged heat aged <sup>(2)</sup> water soak <sup>(3)</sup>	-20 -20 -20	-20 -20 -20	MOAT 27 : 5.4.2
Trouser tear ( $\text{Nmm}^{-1}$ )	117.9	118.7	BS 2782-3.360B
Nail tear (N)	317	287	MOAT 27 : 5.4.1
Dimensional stability (%)	-0.37	-0.29	MOAT 27 : 5.1.6.1

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

(2) Heat aged 56 days at 60°C.

(3) Water soaked 28 days at 23°C.

### 15 Investigations

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

15.2 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.

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

## Bibliography

- BS 2782-3.320A to 320F : 1976 *Methods of testing plastics — Mechanical properties — Tensile strength, elongation and elastic modulus*
- BS 2782-3.360B : 1991 *Methods of testing plastics — Mechanical properties — Determination of tear resistance of plastics film and sheeting by the trouser tear method*
- BS 2782-4.430A to 430D : 1983 *Methods of testing plastics — Chemical properties — 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 5628-3 : 2005 *Code of practice for the use of masonry — Materials and components, design and workmanship*
- BS 8000-3 : 1989 *Workmanship on building sites — Code of practice for masonry*
- BS 8215 : 1991 *Code of practice for design and installation of damp-proof courses in masonry construction*
- BS DD 86-1 : 1983 *Damp-proof courses — Methods of test for flexural bond strength and short term shear strength*

## 16 Conditions

16.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

16.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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 In granting this Certificate, the BBA is not responsible for:

- 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 the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

16.5 Any information relating to the manufacture, supply, installation, use and maintenance 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 and maintained. It does 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; 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. 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 manufacture, supply, installation, use and maintenance of this product/system.

