

## Visqueen Building Products

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Agrément Certificate  
**15/5208**  
Product Sheet 2

### VISQUEEN WATERPROOFING MEMBRANES

### VISQUEEN GAS RESISTANT SELF ADHESIVE MEMBRANE

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Visqueen Gas Resistant Self Adhesive Membrane, a self-adhesive, polymer-modified bitumen membrane, incorporating an aluminium foil layer on a polymer backing film, for use as a gas-resistant damp-proof and waterproof membrane and as an internally- or externally-applied tanking membrane.

(1) Hereinafter referred to as 'Certificate'.

#### 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, including joints, will resist the passage of moisture into a structure (see section 6).

**Resistance to underground gases** — the product is capable of restricting the ingress of radon, carbon dioxide and methane into the structure (see section 7).

**Resistance to mechanical damage** — the product will accept, without damage, the limited foot traffic and loads associated with installation, and the effects of thermal and other minor movement likely to occur in practice (see section 8).

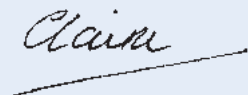
**Adhesion** — the adhesion of the product to the substrate and to itself is satisfactory (see section 9).

**Effects of temperature** — the product remains flexible and capable of being formed at the minimum recommended temperatures (see section 10).

**Durability** — under normal service conditions the product will provide an effective barrier to water and water vapour for the life of the structure in which it is installed (see section 12).

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

Date of First issue: 20 April 2015

John Albon — Head of Approvals  
Construction Products

Claire Curtis-Thomas  
Chief Executive

*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.*

# Regulations

In the opinion of the BBA, Visqueen Gas Resistant Self Adhesive Membrane, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



## The Building Regulations 2010 (England and Wales) (as amended)

<b>Requirement:</b>	C1(2)	Preparation of site and resistance to contaminants
<b>Comment:</b>		The product, including joints, can contribute to a structure satisfying the Requirement. See sections 7.1 and 7.2 of this Certificate.
<b>Requirement:</b>	C2 (a)	Resistance to moisture
<b>Comment:</b>		The product, including joints, will enable a structure to satisfy this Requirement. See section 6.1 of this Certificate.
<b>Regulation:</b>	7	Materials and workmanship
<b>Comment:</b>		The product is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.



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

<b>Regulation:</b>	8(1)	Durability, workmanship and fitness of materials
<b>Comment:</b>		The product can contribute to a construction satisfying this Regulation. See section 12 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	9	Building standards applicable to construction
<b>Standard:</b>	3.1	Site preparation – harmful and dangerous substances
<b>Comment:</b>		The product, including joints, can contribute to satisfying the requirements of this Standard with regard to the control of effects of methane and carbon dioxide, with reference to clause 3.1.6 <sup>(1)(2)</sup> . See section 7.1 of this Certificate.
<b>Standard:</b>	3.2	Site preparation – protection from radon gas
<b>Comment:</b>		The product, including joints, can contribute to satisfying the requirements of this Standard, with reference to clause 3.2.2 <sup>(1)(2)</sup> . See section 7.1 of this Certificate.
<b>Standard:</b>	3.4	Moisture from the ground
<b>Comment:</b>		The product, including joints, will enable a structure to satisfy the requirements of this Standard, with reference to clause 3.4.7 <sup>(1)(2)</sup> . See section 6.1 of this Certificate.
<b>Standard:</b>	7.1(a)	Statement of sustainability
<b>Comment:</b>		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.
<b>Regulation:</b>	12	Building standards applicable to conversions
<b>Comment:</b>		All comments given for the product under Regulation 9, Standards 1 to 6 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) 2012

<b>Regulation</b>	23(a)(i)(iii)(iv)(b)(i)	Fitness of materials and workmanship
<b>Comment:</b>		The product is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	26(1)(2)	Site preparation and resistance to contaminants
<b>Comment:</b>		The product, including joints, can contribute to a structure satisfying this Regulation with regards to radon, methane and carbon dioxide. See section 7.1 of this Certificate.
<b>Regulation:</b>	28(a)	Resistance to moisture and weather
<b>Comment:</b>		The product, including joints, will enable a structure to satisfy the requirements of this Regulation. See section 6.1 of this Certificate.

## Construction (Design and Management) Regulations 2015

## Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, Principal Designer/CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.2 and 3.5) of this Certificate.

# Additional Information

## NHBC Standards 2014

NHBC accepts the use of Visqueen Gas Resistant Self Adhesive Membrane provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards* Chapter 4.1 *Land quality – managing ground conditions* and Chapter 5.1 *Substructure and ground bearing floors*, clause 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.

## CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 13969 : 2004. An asterisk (\*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

# Technical Specification

## 1 Description

1.1 Visqueen Gas Resistant Self Adhesive Membrane is a self-adhesive, SBS polymer-modified bitumen membrane incorporating an aluminium foil layer on a polymer backing film, and with the nominal characteristics given below:

Thickness*(mm)	1.2
Width (m)	1
Length(m)	20
Tensile strength*(N per 50 mm)	
longitudinal	230 ± (5%)
transverse	235 ± (5%)
Elongation* (%)	
longitudinal	33± (5%)
transverse	36± (5%)
Low temperature flexibility (°C)	≤-20
Watertightness* (60kPa)	pass.

1.2 The following ancillary items are available for use with the membrane:

- Visqueen High Performance Tanking Primer — a modified-bitumen solution used to prepare substrates prior to application of the membrane in demanding site conditions
- Visqueen Protect&Drain — used to protect the membrane during backfilling operations and also to promote drainage of water away from the structure
- Visqueen TreadGUARD 1500 — protection board
- Visqueen Top Hats – for effectively sealing service and pipe penetrations
- Visqueen Detailing Strip – for effectively sealing complex junctions and stanchions.

1.3 The following ancillary items are available for use with the membrane but are outside the scope of the Certificate:

- Visqueen Pile Cap Sealer — a specialised formulation for waterproofing ground pile caps
- Visqueen VX25 Waterstop — a sodium bentonite hydrophilic waterstop designed to prevent the ingress of water through cast in-situ concrete construction joints
- Visqueen VX90 Waterstop — a sodium bentonite hydrophilic waterstop designed to act as an active reinforcement strip at internal 90° angles and changes of direction, and to seal around pile cap penetrations
- Visqueen Waterstop Mastic — used to secure and seal Visqueen VX Waterstops in in-situ concrete vertical joints and pile cap applications.

## 2 Manufacture

2.1 The membrane is manufactured using traditional coating and laminating techniques.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

### 3 Delivery and site handling

- 3.1 Visqueen Gas Resistant Self Adhesive Membrane is delivered to site in boxed rolls on a pallet. Each roll is wrapped in a pre-printed film bearing the company details, product name and the BBA logo incorporating the number of this Certificate.
- 3.2 Each roll has a nominal weight of 25 kg and must be stored in an upright position at a temperature between 5°C and 40°C in dry warehouse conditions. When correctly stored, the product will have a shelf-life of 24 months.
- 3.3 Visqueen TreadGUARD 1500 protection boards are delivered to site in sheets stored flat on pallets.
- 3.4 Visqueen High Performance Tanking Primer is delivered to site in 5 litre cans.
- 3.5 Visqueen High Performance Tanking Primer is classified under *The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP4)/Classification, Labelling and Packaging of Substances and Mixtures (CLP Regulation) 2009* as 'harmful' and 'highly flammable', with a flashpoint of 39°C, and must be stored in accordance with *The Dangerous Substances and Explosive Atmospheres Regulations 2002*. Containers bear the appropriate hazard warnings.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Visqueen Gas Resistant Self Adhesive Membrane.

## Design Considerations

### 4 Use

- 4.1 Visqueen Gas Resistant Self Adhesive Membrane is satisfactory for use as a damp-proof and waterproof membrane for solid concrete floors and underground structures and for internally- and externally-applied tanking below ground in accordance with the relevant clauses of CP 102 : 1973, Section 3, and BS 8102 : 2009, provided it is fully supported and protected. It will also restrict the ingress of radon and landfill gases into the building.
- 4.2 Buildings in areas of risk from radon and/or landfill gas(es) should be constructed in accordance with the recommendations of:
- BRE Report 211 *Radon : guidance on protective measures for new dwellings*,
  - BRE Report 212 *Construction of new buildings on gas-contaminated land* and
  - BRE Report 414 *Protective measures for housing on gas-contaminated land*.
- 4.3 The product is compatible with concrete, smooth brick and blockwork or screeded substrates, and is resistant to those chemicals likely to be present in normal service conditions. However, care must be taken to prevent contact with pitch, oils and other hydrocarbons.
- 4.4 The membrane must always be fully protected from mechanical damage and exposure to UV radiation immediately after it is installed, in accordance with the Certificate holder's instructions.

### 5 Practicability of installation

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

### 6 Resistance to water and water vapour



6.1 The product, including joints when completely sealed and consolidated, will adequately resist the passage of moisture to the inside of the building and so meet the requirements of the national Building Regulations.

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

### 7 Resistance to underground gases



7.1 The product is capable of restricting the ingress of radon, methane and carbon dioxide into a building.

7.2 In BRE Reports 211 and 212 it is recommended that a 300 µm thick polyethylene sheet is the minimum required for a gas-resistant membrane. It is generally accepted that other materials with comparable or higher gas resistance are suitable, provided they can withstand the construction process. In the opinion of the BBA, when protected the product meets this recommendation.

7.3 When installed in accordance with BRE Report 414, the membrane will be compliant with the recommendations made in CIRIA C665 : 2007 *Assessing risks posed by hazardous ground gases to buildings*, BS 8485 : 2007, BRE Report 211 and *NHBC Standards*. Guidance is given in the *Ground Gas Handbook 2009* and the Certificate holder's technical literature.

## 8 Resistance to mechanical damage

8.1 When installed the membrane is capable of accommodating the minor movement likely to occur under normal service conditions.

8.2 The product can be punctured by sharp objects and care must therefore be taken in handling building materials and equipment over the exposed surface.

8.3 Provided there are no sharp objects present on the membrane surface prior to and during installation of the protective layer, the product will not be damaged by normal foot traffic.

## 9 Adhesion

The adhesion of the product to the substrate and to itself, with joints as described in this Certificate, is satisfactory.

## 10 Effects of temperature

10.1 The product remains flexible at the minimum recommended installation temperature.

10.2 At low temperatures, temporary batten support at the top of the membrane is recommended prior to protection and backfilling.

## 11 Maintenance

As the product is confined and has suitable durability (see section 12) maintenance is not required. However, any damage occurring before enclosure must be repaired (see section 16).

## 12 Durability



The membrane, when fully protected and subjected to normal service conditions, will provide an effective barrier to the transmission of liquid water and water vapour, radon, methane and carbon dioxide for the life of the structure in which it is incorporated.

## Installation

## 13 General

13.1 Buildings in areas of risk from landfill gas should be designed and constructed in accordance with BRE Report 211, BRE Report 376 *Radon : Guidance on protective measures for new dwellings in Scotland*, BRE Report 413 *Radon : Guidance on protective measures for dwellings in Northern Ireland*, BRE Report 414 and the recommendations laid out in BRE Report 212.

13.2 Where the product is required to act as a gas-resistant membrane, particular care should be taken to ensure that it is incorporated into the building as part of a complete system to prevent the ingress or build-up of contaminants. This may require additional methods such as sumps and ventilation.

13.3 An initial site survey must be carried out by a suitably-qualified individual to establish the required level of protection.

13.4 The membrane must be installed in accordance with the relevant requirements of BS 8102 : 2009, CP 102: 1973, and the Certificate holder's instructions. Additional guidance on the use of damp-proof membrane material is available in BS 8000-4 : 1989.

13.5 Concrete or screeded surfaces must have a smooth finish, free from loosely-adhering material and sharp protrusions. The substrate must be dry and dust-free.

13.6 Vertical surfaces of brickwork, blockwork and, if necessary, masonry, 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.

13.7 The membrane can be installed in all normal site conditions. The air temperature should be above 5°C and below 35°C to prevent the risk of surface condensation.

13.8 The membrane must be covered by a screed or other protective layer as soon as possible after installation. If blockwork protection is used, care must be taken to avoid damage to the membrane during construction.

## 14 Procedure

14.1 Surfaces must be primed with Visqueen High Performance Tanking Primer, typically at a coverage rate of between 6 and 8 m<sup>2</sup> per litre, and allowed to dry before the application of the membrane.

14.2 The release film is removed prior to applying the membrane to the prepared substrate. In all cases, as the sheet is laid the membrane must be pressed firmly from the middle to prevent trapping air.

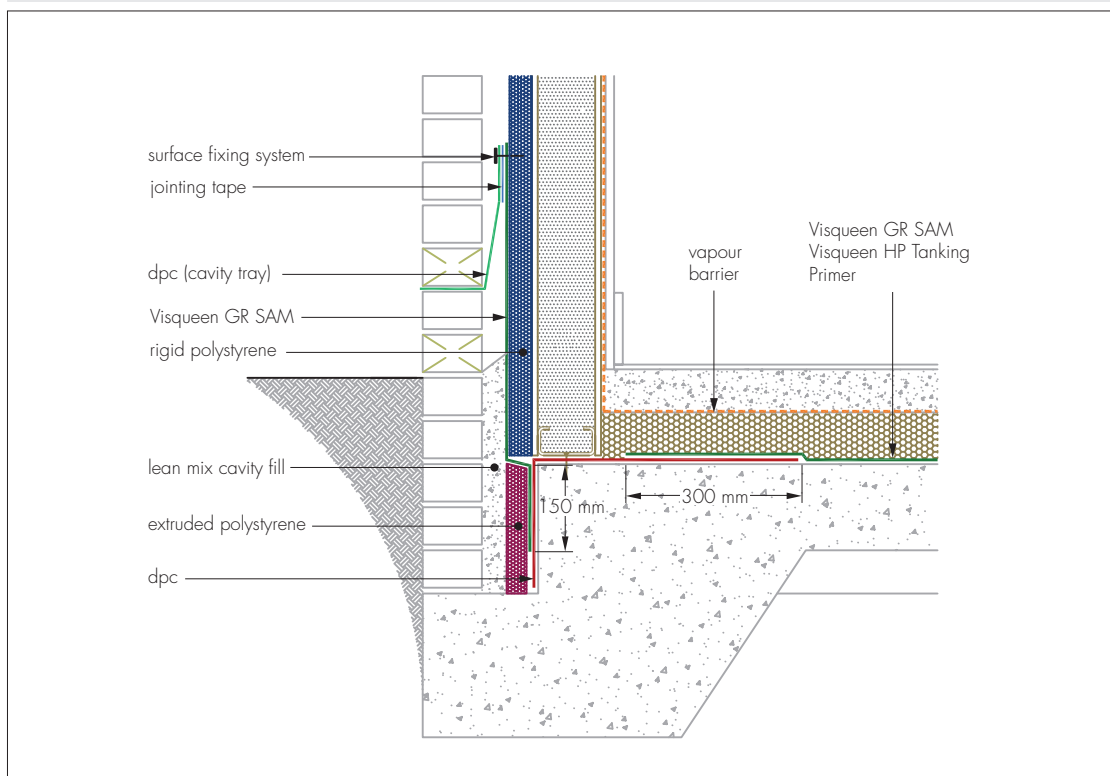
14.3 Overlaps should be a minimum of 150 mm. The surface to be overlapped should be dust-free and the membrane pressed down to ensure a watertight bond.

## 15 Application

### Solid concrete floors

15.1 It is essential that the membrane in the floor should be continuous with the damp-proof course in the surrounding walls. This is achieved by continuing the membrane up internal wall surfaces to tie in with the damp-proof course. A sand/cement screed or Visqueen TreadGUARD 1500 protection layer should be laid immediately after the installation to prevent damage (see Figure 1).

Figure 1 Typical perimeter detail, metal frame stud framing system



### External tanking

15.2 When the foundation block extends beyond the concrete structure, the membrane should be applied to the horizontal surface and extended up the outer face of the wall and cut into it.

15.3 A protection wall of brickwork, blockwork, Visqueen Protect&Drain or TreadGUARD 1500 should be used against all the membranes, to protect them against puncture during backfilling, or subsequently by the backfill (see Figures 2, 3, and 4).

Figure 2 Typical externally-tanked lift pit

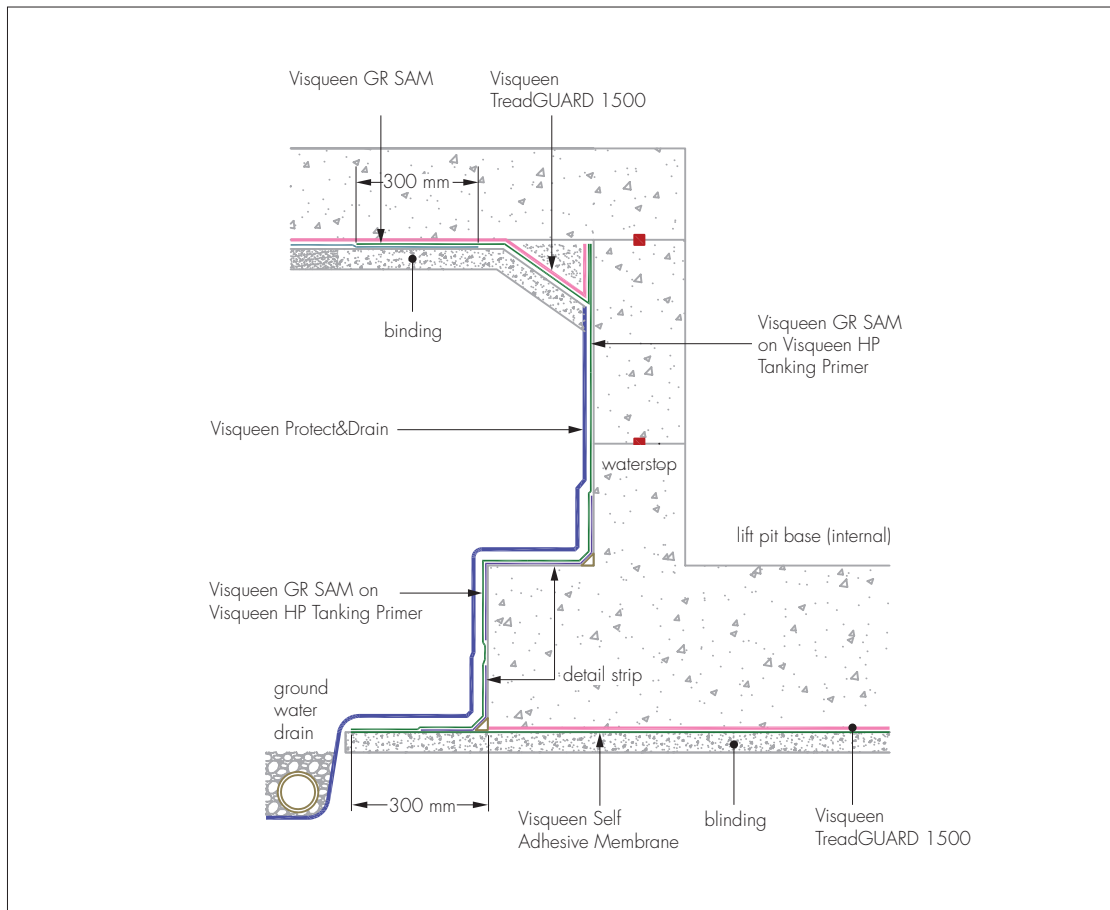


Figure 3 Externally-tanked lift pit (suspended floor)

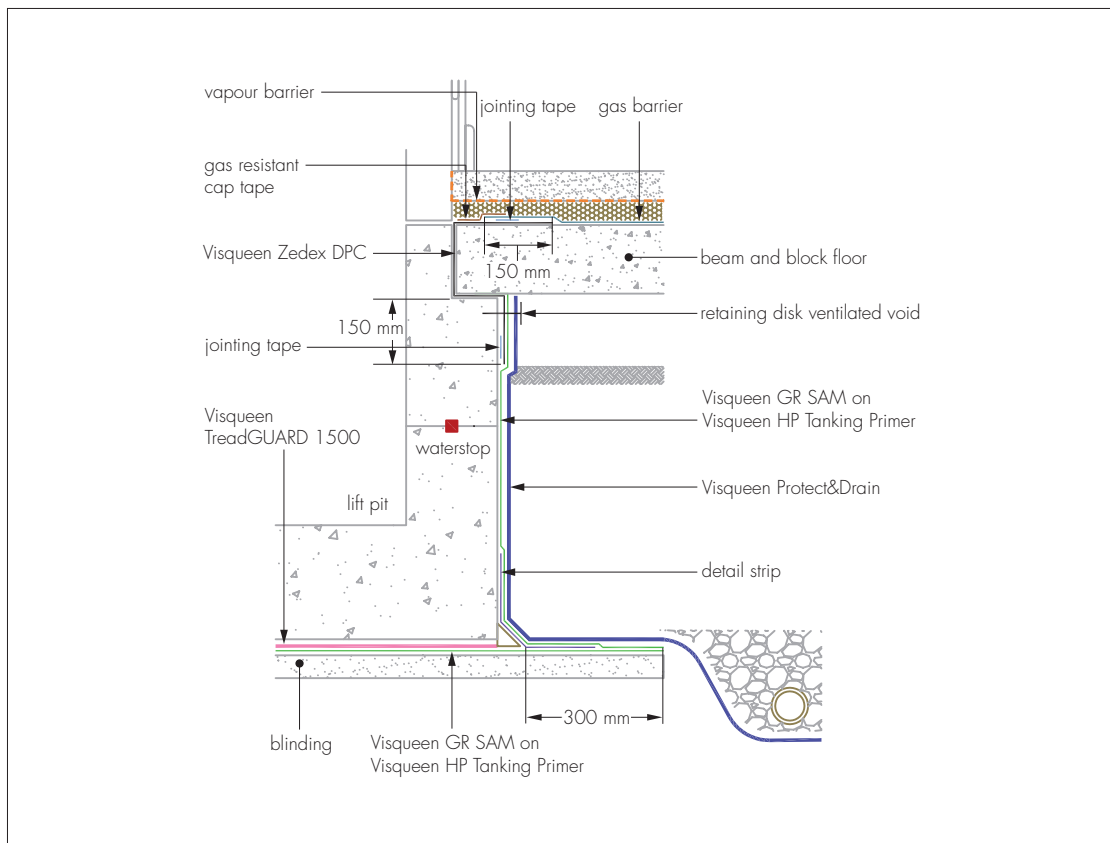
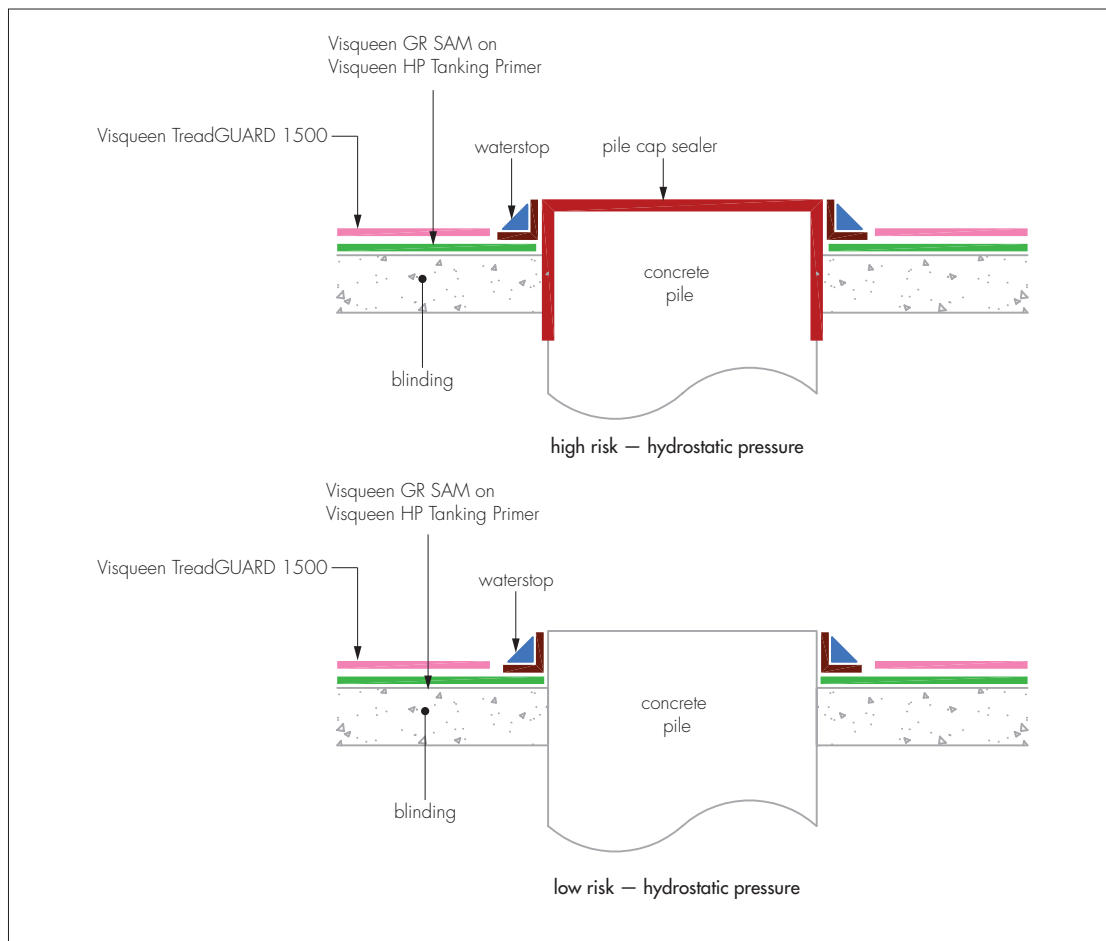




Figure 4 Typical pile cap sealing



### Detailing and service penetrations

15.4 Detailed consideration must be given to all service penetrations in tanking installations including the use of Visqueen Top Hat units. The advice of the Certificate holder must be sought for suitable details and products that are outside the scope of this Certificate.

## 16 Repair

Minor damage to the product can be repaired by patching prior to the application of protection and backfilling. Badly-damaged areas must be replaced prior to the application of protection and backfilling. Once covered, the product cannot be repaired.

## Technical Investigations

### 17 Tests

17.1 Tests were carried out on Visqueen Gas Resistant Self Adhesive Membrane and the results assessed to determine:

- thickness
- resistance to chisel impact
- tensile properties
- impact resistance
- watertightness including joints
- flexibility at low temperature
- resistance to fatigue
- shear strength of joints
- peel strength on concrete.

17.2 An assessment was made of test data to BS EN 13696 : 2004 from independent test laboratories in relation to:

- dimensions\*
- tear resistance\*



- peel resistance of joints\*
- water vapour resistance\*
- tensile properties\*
- dimensional stability\*
- resistance to static loading\*.

## 18 Investigations

18.1 An evaluation was made of the results of test data regarding radon and methane in relation to the product.

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

## Bibliography

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

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

BS 8485 : 2007 *Code of practice for the characterization and remediation from ground gas in affected developments*

BS EN 13969 : 2004 *Flexible sheets for waterproofing — Bitumen damp proof sheets including bitumen basement tanking sheets — Definitions and characteristics*

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

## 19 Conditions

19.1 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.

19.2 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.

19.3 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.

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

19.5 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
- actual 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
- any claims by the manufacturer relating to CE marking.

19.6 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.