Technical Datasheet

# Visqueen Low Permeability Gas Membrane

## Features & benefits

- BBA certified - third party accreditation
- Complies with NHBC Foundation's NF94 guidance for use in Type A and Type B membrane locations in reinforced cast in situ suspended floor slabs and rafts
- Complies with NHBC Amber 1 - suitable for low gas risk NHBC housing sites
- Supplied centre folded - reduces the risk of cracks in screed and limits creases
- Also provides radon and damp proof membrane protection
- Dual jointing methods - lap joints can be taped or heat welded

## Product description

Visqueen Low Permeability Gas Membrane is a flexible 0.5mm thick thermoplastic membrane. The product is yellow in colour and supplied 4m x 12.5m in a centre folded roll.

The membrane is manufactured from virgin polymer.

## Approvals and standards

- Third party accreditation (BBA 13/5069)
- Complies with NHBC Foundation's NF94 guidance for use in Type A and Type B membrane locations in reinforced cast in situ suspended floor slabs and rafts
- Conforms to the specification requirements of NHBC Amber 1 applications
- Conforms to the specification requirements of BR 211:2023
- UKCA UKNI CE to EN 13967:2017
- Visqueen certified with Quality Management System ISO 9001:2015
- Visqueen certified with Occupational Health and Safety System ISO 45001:2018
- Visqueen certified with Environmental Management System ISO 14001:2015

## Usage

Visqueen Low Permeability Gas Membrane can be used as a high performance radon membrane and/or damp proof membrane positioned within the ground floor construction either above or below the structural floor slab.

Radon, carbon dioxide and methane protection – NHBC NF94 guidance:
Visqueen Low Permeability Gas Membrane when installed with either taped or welded joints complies with NHBC Foundation's NF94 publication, Hazardous ground gas - an essential guide for housebuilders, in Type A membrane locations in cast in situ monolithic reinforced ground bearing rafts and reinforced cast in situ suspended floor slabs with minimal penetrations. Visqueen Low Permeability Gas Membrane also complies with this guidance when installed with welded joints in Type B membrane locations in cast in situ monolithic reinforced ground bearing rafts and reinforced cast in situ suspended floor slabs with minimal penetrations. For site or zone characteristic gas situations of CS4 and above, contact Visqueen Technical Services.

Carbon dioxide and methane protection – NHBC Traffic Light System:
Visqueen Low Permeability Gas Membrane is suitable to prevent the ingress of harmful levels of ground gases for housing applications where NHBC are the warranty provider and the site has been classified as Amber 1. In this application, the membrane is used above a precast suspended segmental subfloor, e.g. beam and block floor.

The product is not intended for use where there is a risk of hydrostatic pressure.

## System components

- VisqueenPro Double Sided Jointing Tape, 50mm x 10m
- Visqueen Gas Resistant Foil Lap Tape, 75mm x 50m
- VisqueenPro Detailing Strip, 300mm x 10m, 500mm x 10m
- Visqueen Top Hat Units
- Visqueen TreadGUARD 1500, 1m x 2m
- Visqueen TreadGUARD 300, 2m x 75m

## Storage and handling

Visqueen Low Permeability Gas Membrane should be stored horizontally, under cover in its original packaging.

Care should be taken when handling the product in line with current manual handling regulations.

## Preparation

Visqueen Low Permeability Gas Membrane should be installed on a smooth continuous substrate free from irregularities such as voids or protrusions e.g. grouted beam and block floor, 50mm thick sand blinding, or smooth concrete blinding.

The membrane can be cut with a sharp retractable safety knife or robust scissors.



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## Installation

Visqueen Low Permeability Gas Membrane should be loose laid on the substrate. The membrane should be clean and dry at the time of jointing. It should be overlapped by at least 150mm, bonded with Visqueen Pro Double Sided Jointing Tape and sealed with Visqueen Foil Lap Tape. In demanding site conditions seal lap joints with Visqueen Ultimate GR Lap Tape. Alternatively lap joints can be heat welded to achieve an effective seal. The overlap in the barrier is typically 100mm and when hand welding, a 35mm weld is normally achieved. When hand welding, a roller must be used.

Airtight seals should be formed around all service entry points. Visqueen Preformed Top Hat Units are available for sealing service entry pipes. The base of the top hat and the upstand should be bonded using Visqueen Pro Double Sided Jointing Tape and sealed with Visqueen Foil Lap Tape. The upstand should be secured with the supplied jubilee clip. Alternatively VisqueenPro Detailing Strip can be used to seal service entry points. The upstand should be secured with a jubilee clip.

Forming an effective barrier to gases may give rise to complex three-dimensional detailing where, it is recommended Visqueen Preformed Units are used e.g. corners. Alternatively VisqueenPro Detailing Strip can be used to seal awkward junctions.

If the membrane is punctured or perforated a patch of the same material should be lapped at least 150mm beyond the limits of the puncture and either heat welded or bonded with Visqueen Pro Double Sided Jointing Tape and sealed with Visqueen Foil Lap Tape. Alternatively a patch can be formed using VisqueenPro Detailing Strip and lapped at least 150mm beyond the extents of the puncture.

Long periods of exposure to ultraviolet light will reduce the effectiveness of the membrane. The membrane should be covered by a protective layer immediately after installation to prevent damage from following trades, ultraviolet light, etc. Care should be taken to ensure that the membrane is not punctured, stretched or displaced when applying a screed or final floor covering. A minimum thickness of 50mm screed is recommended. When reinforced concrete is to be laid over the membrane the wire reinforcements and spacers must be prevented from puncturing the membrane. Where there is a high risk of potential damage, the membrane should be covered with Visqueen TreadGuard protection, screed, or other approved protection material before positioning the reinforcement.

## Usable temperature range

It is recommended that Visqueen Low Permeability Gas Membrane and all associated system components should not be installed below 5°C

## Additional information

When used in full radon protection areas, a Visqueen Radon Sump or subfloor ventilation system maybe required. To assist build sequencing, Visqueen Zedex CPT DPC is available for gas protection through masonry wall constructions.
For additional detailing information, contact Visqueen Technical Services +44 (0) 333 202 6800.

The information in this datasheet was correct at the time of publication. It is the user's responsibility to obtain the latest version of the datasheet as it is updated on a regular basis. The information contained in the latest datasheet supersedes all previously published editions.

| Propertry | Test method | Units | Compliance criteria | Result |
|---|---|---|---|---|
| Visible defects | BS EN 1850 -2 | - | Pass/Fail | Pass |
| Length | BS EN 1848-2 | m | -10%/+10% | 12.5 |
| Width | BS EN 1848-2 | m | -2.5%/+2.5% | 4 |
| Straightness | BS EN 1848-2 | - | Pass/Fail | Pass |
| Thickness | BS EN 1849-2 | mm | -12%/+12% | 0.5 |
| Tensile strength - MD | BS EN 12311 | N/mm² | MLV | 15 |
| Tensile strength - TD | BS EN 12311 | N/mm² | MLV | 15 |
| Tensile elongation - MD | BS EN 12311 | % | MLV | 400 |
| Tensile elongation - TD | BS EN 12311 | % | MLV | 400 |
| Joint strength | BS EN 12317-2 | N | MDV | 298 |
| Watertightness to 2kPa for 24 hours | BS EN 1928 | - | Pass/Fail | Pass |
| Resistance to impact | BS EN 12691 | mm | >MLV | 200 |
| Durability (artificial ageing) | BS EN 1296 and | - | Pass/Fail | Pass |



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|---|---|---|---|---|
| | BS EN 1928 | | | |
| Durability chemical resistance | BS EN 1847 | - | Pass/Fail | Pass |
| Resistance to tearing (nail shank) CD | BS EN 12310-1 | N | MDV | 333 |
| Resistance to tearing (nail shank) MD | BS EN 12310-1 | N | MDV | 335 |
| Radon permeability | SP Test Method | $m^2/s$ | MDV | $5.477 \times 10^{-12}$ |
| Radon transmittance | SP Test Method | m/s | MDV | 1.095 x 10-8 |
| Carbon dioxide permeability | IS0 2782 | m/s/Pa | MDV | 2.8 x 10-17 |
| Methane gas transmission rate | ISO 15105-1 | $ml/m^2/day/atm$ | MDV | 213 |
| Reaction to fire | BS EN 13501-1 | Class | MDV | F |
| Water vapour resistance | BS EN 1931 | MNs/g | MDV | 1445 |
| Water vapour - permeability/ density flow rate | BS EN 1931 | $g/m^2/d$ | MDV | 0.1239 |
| Equivalent air layer thickness | BS EN 1931 | SD in m | MDV | 290 |
| Water vapour resistance factor | BS EN 1931 | u | MDV | 615,000 |
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## Health and safety information

Refer to the Visqueen Low Permeability Gas Membrane safety datasheet (SDS).

## About Visqueen

Visqueen is a leading provider of construction membrane technologies and design-based solutions for ground gas, structural waterproofing, damp proofing and fire protection.

We offer complete support at every stage of the specification, including the supply chain process. As the UK's principal technical authority, we are best placed to ensure that the principal designer and contractor specify the most technically suited, durable, and competitive solution to guarantee their project is protected for the lifetime of the building.

Visqueen is at the forefront of advanced membrane technology and innovation in the construction industry, earning the trust and loyalty of specifiers throughout the UK and Europe.

For more information, visit visqueen.com or contact our sales office at +44 (0) 333 202 6800 or enquiries@visqueen.com

## Complete Range, Complete Solution




Passive Fire Protection | Gas Protection | Damp Proof Membrane | Air and Vapor Control | Stormwater | Damp Proof Course | Temporary Protection

## Visqueen Technical Support



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# Visqueen Low Permeability Gas Membrane

Visqueen offer a comprehensive full nationwide technical support. Our team of CSSW qualified technical support managers provide on site design-based solutions for specifiers, contractors and builders merchants, and will ensure that from design stage to installation the project is fully risk assessed and the specification is approved by all stakeholders.

Our Technical Office, can design, prepare and manage CAD detailing, together with assisting in quantity take offs, while offering advice on technical installations and product selection.

## Competency & Design

Visqueen promotes competency in building design by ensuring that its technical team possesses the necessary skills, knowledge, experience, and ethical practices. The company adopts the "golden thread of information," ensuring all project data is digitally secure and accessible throughout a building's lifecycle. This approach aligns with the Building Safety Act and aims to foster accountability and compliance with evolving regulations, providing clients with confidence in the safety and reliability of their projects.

## Visqueen CPD Seminars

Visqueen's CPD Seminars offer insights into Building Regulations, Standards, and industry guidance related to damp proofing, hazardous ground gas protection, and structural waterproofing. These one-hour seminars are tailored for construction design professionals and delivered by our Technical Support Managers. Visit our website to book a free CPD.

## Visqueen Contract Design Services

Visqueen Contract Design Services offers a bespoke design service led by our team of Certified Surveyors in Structural Waterproofing (CSSW), providing experienced and specialised waterproofing design expertise for complex projects. We provide comprehensive support throughout the entire project, ensuring that all work meets the requirements of warranty providers and adheres to the highest standards of quality, reliability and current legislation.

## Visqueen Training Academy

Based at our Derbyshire facility, the Visqueen Training Academy offers a variety of training programs across the UK. These include one-day product awareness sessions for distributors and builders' merchants, and intensive two-day courses for hands-on product installation training. Contact us for more information.



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