DATASHEET

Technical Support: 0333 202 6800
LAST UPDATED: 21.11.2019

VISQUEEN RADON MEMBRANE

Radon Membrane

CE Mark to EN 13967:2017







- Independently tested for radon resistance
- BBA Certified
- High resistance to puncture
- Also acts as a Damp Proof Membrane
- Complies with BR 211: 2015

Description

Visqueen Radon Membrane is manufactured from an enhanced blend of polymer films that is suitable for use in the protection of buildings from the ingress of radon gas.

Visqueen Radon Membrane also acts as a damp proof membrane, but is not intended for use where there is the risk of hydrostatic pressure. It is approved for use in Ireland. Visqueen Radon Membrane and ancillary components must be used in accordance with the recommendations in the most recent edition of Building Research Establishment Report BR 211:2015. Visqueen Radon Membrane can be used in most common floor constructions. It is installed in a similar way to a damp proof membrane, but with much greater attention paid to workmanship and detailing in order to achieve effective sealing at all locations.

Assessing The Risk For Your Area

Because the level of risk differs across the country according to local geology, the risk depends on where your site is situated.

The main source of guidance on the risks and solutions is BRE Report BR 211:2015. It includes maps for determining the need for radon protection, as well as detailed information on construction solutions. The maps are used as the basis for determining in general terms the required degree of radon protection (“basic” or “full”) in your area. Essentially, “basic” protection means you need to lay a ground floor radon membrane and “full” protection means that, in addition, you need to make provision for underfloor depressurisation.

Your local authority Building Control Officer or a local Approved Inspector should also be able to help you determine the broad level of risk in your area but, like the maps, they can only give a broad indication. Ultimately, if you are in an area that is potentially at risk, there is no substitute for an assessment close to your actual site – you may be in a pocket where the geology is different from the region as a whole, allowing the required protection to be downgraded from “full” to “basic”, or even making radon protection unnecessary.

Determining The Risk For Your Site

If you are in an area where the maps indicate that no protection is required, there is no need to take further action. However, if the maps indicate the need for “full” protection, it is worth confirming this by requesting a detailed assessment from the British Geological Survey (BGS), which focuses more accurately on your location. This may show that only “basic” protection is necessary on your particular site.

Construction Solutions

Radon Protection

Once you have determined whether you need “basic” or “full” protection, you must check that your preferred ground floor construction gives you the right level of protection. The options are as follows:

Basic Radon Protection

VISQUEEN

ISO 9001:2008 knight international inspectorate UKAS
ISO 14001 knight international inspectorate UKAS
OHSAS 18001 knight international inspectorate UKAS

For “basic” protection, you need to provide an airtight barrier covering the entire ground floor of the building, linked to the damp proof course using cavity trays which prevent radon moving through the wall cavity and into the building. All junctions between the floor membrane and cavity trays should be sealed. You can achieve “basic” protection with both ground supported and suspended (ventilated) concrete ground floors by installing a radon-proof membrane system. With a suspended concrete slab, the space beneath the floor is available to ventilate radon safely away should “full” protection be required.

Full Radon Protection
For “full” protection, you not only need to provide a radon-proof floor membrane, but also an underfloor depressurisation system. Depressurisation can be achieved by natural or mechanical underfloor ventilation through the subfloor space, or from a radon sump if there is no underfloor space. If you prefer to use an in situ slab in contact with the ground, the slab should be supported on the inner leaf. The full system consists of;

- Visqueen Radon Jointing System, prevents radon ingress at joints,
- Visqueen Top Hat Units prevents radon ingress at pipe penetrations,
- Visqueen Radon Sumps, where subfloor depressurisation may be required.

Installation
Visqueen Radon Gas Membrane and ancillary components must be installed in accordance with the recommendations of Building Research Establishment BRE 414 “Protective measures for housing on gas contaminated land”, NHBC guidelines and the Chartered Institute of Environmental Health Ground Gas Handbook. The product is not intended for use where there is the risk of hydrostatic pressure.

The membrane should be installed on a compacted sand blinding layer or smooth concrete float finish allowing adequate overlap for jointing between the sheets and avoiding bridging (i.e. areas of unsupported membrane). For beam and block floor construction, the membrane must be placed above. In areas where high levels of unsupported membrane occur it is recommended that Visqueen Pre Applied Membrane is used. To avoid slip or shear planes and high compressive loadings it is not recommended to take the membrane through the wall. In order to provide a continuous barrier across the cavity Visqueen Zedex CPT DPC should be taken through the blockwork and incorporated below the damp proof course cavity tray in the outer leaf. Laps can be joined together by either using the Visqueen Gas Barrier Jointing System or welded by our specialist onsite contractors.

Jointing The Radon Membrane
Visqueen Radon Membrane should be overlapped by at least 150mm and sealed using Visqueen DPM Double Sided Jointing Tape. The joint should be secured with VisqueenPro Single Sided Jointing Tape. The membrane should be clean and dry at the time of jointing.

In demanding site conditions high performance Gas Resistant (GR) lap tape is available as an alternative to VisqueenPro Single Sided Jointing tape.

Punctures
If the membrane is punctured or perforated then a patch of material with identical thickness should be lapped at least 150mm beyond the limits of the puncture and bonded with Visqueen Double Sided Jointing Tape and sealed with VisqueenPro Single Sided Jointing Tape. Alternatively a patch can be formed using Visqueen Detailing Strip and lapped at least 150mm beyond the limits of the puncture. External and internal corners should be round and reinforced with Visqueen Detailing Strip. Where this is not possible and the three dimensional shapes are complex it is recommended a preformed unit is used.

Covering
Visqueen Radon Membrane should be covered by a protective layer as soon as possible after installation. 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 barrier the wire reinforcements and spacers must be prevented from contacting the barrier. It is recommended that the barrier is covered with Visqueen Protection Boards or screed before

positioning the reinforcement. When underfloor heating is being installed, it is recommended that the barrier is positioned between the blinded hardcore and insulation. This will protect the insulation from moisture and avoid any risk of overheating the membrane.

Storage and Handling

Visqueen Radon Gas Barrier is classified as non-hazardous when used in accordance with the relevant Code of Practice (CP 102:1973). The product is chemically inert and is not affected by acids and alkalis that may be present in the sub-soils. The material is not recommended for uses where it will be exposed to long periods of outdoor weathering as exposure to ultraviolet light will embrittle the product. Weathering will not occur when the membrane is installed in accordance with CP 102:1973. Care should be taken to avoid accidental damage when handling the membrane on site. When the weather is cold all jointing tapes should be kept in a warm and dry place until needed. Installation is not recommended below 5°C.

System Components

- Visqueen Double Sided Jointing Tape: a blue butyl based strip adhesive.
- VisqueenPro Single Sided Jointing Tape: a single sided tape suitable for securing laps.
- Visqueen Foil Backed Lap Tape: a high performance single sided overlap tape for securing laps in demanding conditions.
- Visqueen Zedex CPT High Performance DPC: a co-polymer thermoplastic damp proof course suitable for horizontal, vertical or cavity tray applications. Suitable to prevent the ingress of radon gas.
- Visqueen Preformed Pipe Cloak (Top Hat) Units: a preformed unit providing an effective airtight seal around service pipe penetrations (see Visqueen drawing PFU-105).
- Visqueen Preformed Unit: three-dimensional preformed unit to prevent damp or gas ingress at junctions or complex details. Standard or non standard types as shown on construction drawings.
- Visqueen Gas Resistant Self Adhesive Detailing Strip: self adhesive strip for detailing complex shapes and junctions.
- Visqueen Heavy Duty Protection Boards: providing membrane protection from damage from following trades, positioning of reinforcement, etc.
- Visqueen Radon Sump: providing a depressurisation zone, for use in full radon protection systems.

Technical Data and CE Mark

Visqueen Radon Membrane complies with the requirements and clauses of EN 13967 - Flexible sheets for waterproofing - Plastic and rubber damp proof sheets including plastic rubber basement tanking sheet - Definitions and characteristics.

British Board of Agrement performed the initial inspection of the manufacturing plant and of factory production control and the continuous surveillance, assessment and evaluation of factory production control, and issued the certificate of constancy of conformity of the factory production control. 0836–CPD – 13/F029 applies.

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Product Data

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Product Data

Characteristic	Test method	Units	Compliance criteria	Value or Statement
Visible defects	EN 1850 -2	-	Pass/Fail	Pass
Length	EN 1848-2	m	-10%/+10%	25
Width	EN 1848-2	m	-2.5%/+2.5%	4
Straightness	EN 1848-2	-	Pass/Fail	Pass
Thickness	EN 1849-2	mm	-12%/+12%	0.3
Mass	EN 1849-2		-12%/+12%	271
Tensile Strength - MD	EN EN12311		>MLV	15
Tensile Strength - TD	EN EN12311		>MLV	15
Tensile Elongation - MD	EN EN12311	%	>MLV	400
Tensile Elongation - TD	EN EN12311	%	>MLV	400
Joint Strength	EN12317-2	N	>MLV	144
Watertightness 2kPa	EN 1928	-	Pass/Fail	Pass
Resistance to impact	EN 12691	mm	>MLV	200
Durability (artificial ageing)	EN 1296 and EN 1928	-	Pass/Fail	Pass
Durability Chemical Resistance	EN 1847	-	Pass/Fail	Pass
Resistance to tearing (nail shank) TD	EN 12310-1	N	MDV	190
Resistance to tearing (nail shank) MD	EN 12310-1	N	MDV	205
Resistance to static loading	EN 12730	Kg	>MLV	Pass-20kg
Water vapour transmission - resistance	EN 1931	MNs/g	MDV	1100
Water vapour transmission - permeability	EN 1931		MDV	0.2
Radon Permeability	SP Test Method		MDV	5.77x10-12
Radon Transmittance	SP Test Method	m/s	MDV	1.922x10-8
Reaction to Fire	EN 13501-1	Class	MDV	F

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Appendix A

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About Visqueen

Visqueen is the market leader in the manufacture and supply of structural waterproofing and gas protection systems. Visqueen offers the complete package – a proven, reliable range backed by a technical support service that goes unmatched in the market - everything you would expect from a reputable and ethical company.

Complete Range, Complete Solution

- Structural Waterproofing
- Damp Proof Course
- Damp Proof Membranes
- Gas Protection and Gas Venting
- Vapour Control Layers
- Stormwater Protection

Download Library

- Technical Datasheet
- Standard Details
- Technical Service
- Visqueen Gas Protection Brochure
- NBS Clauses
- BBA Certificates
- Material Safety Datasheets
- Specification Guide

Find your local stockist

Search our directory of Visqueen specification Specialist Centres to locate your nearest Visqueen Partner.

Technical support throughout your project

We are specialists in our field and can help you specify the correct solutions with the necessary performance levels, in accordance with building regulations.

- Nationwide site support team
- Specification advice
- Installation guidance & project sign off
- System design including CAD details

CPD Seminars and Training Academy

Gas Protection CPD
The specification, technical design, and installation of gas protection systems, enabling the sustainable regeneration of brownfield sites.

Structural Waterproofing CPD
The specification, technical design, and installation of structural waterproofing systems for protection against water and damp ingress in both above and below ground projects.

Visqueen Training Academy
We are now able to offer exclusive in depth training opportunities on a wide variety of Visqueen products at our Training Academy.

Visqueen Special Projects
We provide high-level expertise, comprehensive support and experience in all types of waterproofing and gas protection.

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