Technical Datasheet

Visqueen Radon R400 Membrane

Features & benefits

- BBA certified - third party accreditation
- 0.4mm (1600 gauge) thick - complies with BBA regulations for radon protection membranes
- Conforms to BR 211:2023 - industry guidance for radon protection
- Also provides damp proof membrane protection
- Dual jointing methods - depending upon specification, lap joints can be taped or heat welded

Product description

Visqueen Radon R400 Membrane is a flexible 0.4mm thick thermoplastic membrane. The product is red in colour and supplied 4m x 20m in a multi-folded roll.

The membrane is manufactured from virgin polymer.

Approvals and standards

- Third party accreditation (BBA 13/5069)
- 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 Radon R400 Membrane is used to prevent the ingress of radon in both basic and full radon protection areas. The membrane can be positioned within the ground floor construction either above or below the structural 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
- VisqueenPro Detailing Strip, 300mm x 10m
- VisqueenPro Single Sided Tape, 75mm x 25m
- Visqueen Top Hat Units
- Visqueen NF-Detailing Strip, 300mm x 10m
- Visqueen NF-60 Lap Tape, 60mm x 45m
- Visqueen NF-150 Lap Tape, 150mm x 10m

Storage and handling

Visqueen Radon R400 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 Radon R400 Membrane should be installed on a smooth continuous surface e.g. grouted beam and block floor, a compacted blinding layer e.g. 50mm thick sand blinding, or smooth concrete blinding. The substrate should be free from irregularities such as voids or protrusions.

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

When installing the membrane in demanding site conditions, or where specified, use Visqueen NF-150 Lap Tape to seal lap joints.

Installation

Visqueen Radon R400 Membrane should be loose laid on the substrate. The membrane should be clean and dry at the time of jointing. Joints should be overlapped by at least 150mm, bonded with VisqueenPro Double Sided Tape and sealed with either VisqueenPro Single Sided Tape or Visqueen NF-60 Lap Tape.

Alternatively lap joints can be heat welded to achieve an effective seal. The overlap in the membrane 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 should be used for sealing service entry pipes. The base of the top hat and the upstand should be bonded using VisqueenPro Double Sided Tape and sealed with either VisqueenPro Single Sided Tape or Visqueen NF-60 Lap Tape. The upstand should be secured with the supplied jubilee clip. Alternatively VisqueenPro Detailing Strip or Visqueen NF-Detailing Strip can be used to seal service entry points. The upstand should be secured with a jubilee clip.

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Forming an effective barrier to radon may give rise to complex three-dimensional detailing where, it is recommended Visqueen Preformed Units are used e.g. corners. Alternatively VisqueenPro Detailing Strip or Visqueen NF-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 bonded with VisqueenPro Double Sided Tape and sealed with either VisqueenPro Single Sided Tape or Visqueen NF-60 Lap Tape. Alternatively a patch can be formed using VisqueenPro Detailing Strip or Visqueen NF-Detailing Strip and lapped at least 150mm beyond the extents of the puncture.

When the gas protection measures are to conform with the requirements of NHBC NF94 guidance, please ensure acceptance of VisqueenPro Detailing Strip by all stakeholders prior to use.

Long periods of exposure to ultraviolet light will reduce the effectiveness of the membrane. The membrane should be covered by a protective layer e.g. Visqueen TreadGuard protection or other approved protection material, 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 during or post installation.

When used in full radon protection areas, a Visqueen Radon Sump or subfloor ventilation system maybe required. For further guidance contact Visqueen Technical Office on 0333 202 6800.

Usable temperature range

It is recommended that Visqueen Radon R400 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 radon protection through masonry wall constructions.
For internal and external corners Visqueen Preformed Corner Units should be used see PFU-553.
For additional detailing information, contact Visqueen Technical Office on 0333 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.

Property	Test method	Units	Compliance criteria	Result
Width	BS EN 1848-2	m	-1	4
Length	BS EN 1848-2	m	-1	20
Thickness	BS EN 1849-2	mm	-1	0.4
Straightness	BS EN 1848-2	-	Pass/Fail	Pass
Visible defects	BS EN 1850 -2	-	Pass/Fail	Pass
Tensile Strength - MD	BS EN 12311	N/mm²	>MLV	15
Tensile Strength - CD	BS EN 12311	N/mm²	>MLV	15
Tensile Elongation - MD	BS EN 12311	%	>MLV	400
Tensile Elongation - CD	BS EN 12311	%	>MLV	400
Joint Strength	BS EN 12317-2	N	>MLV	245
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 BS EN 1928	-	Pass/Fail	Pass
Durability (alkali)	Annex C	-	Pass/Fail	Pass
Resistance to tearing (nail shank) MD	BS EN 12310-1	N	MDV	250
Resistance to tearing (nail shank) CD	BS EN 12310-1	N	MDV	250
Resistance to static loading	BS EN 12730	Kg	>MLV	Pass-20kg
Water vapour transmission - resistance	BS EN 1931	MNs/g	MDV	1262

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Water vapour transmission - permeability	BS EN 1931	g/m²/d	MDV	0.14
Radon Transmission Rate	SP Test Method	m²/s	MDV	$8x10^{-12}$
Radon Permeability	SP Test Method	m/s	MDV	$21x10^{-9}$
Reaction to Fire	BS EN 13501-1	Class	MDV	F
Equivalent air layer thickness	BS EN 1931	m	MDV	256
Water vapour resistance factor	BS EN 1931	u	MDV	601,000

Health and safety information

Refer to Visqueen Radon R400 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

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

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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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