

Visqueen Radon R400 Membrane

Features and benefits

- BBA certified - third party accreditation
- 0.4mm (1600 gauge) thick - complies with new BBA regulations for radon protection membranes in line with BS8485:2015+A1:2019
- Conforms to BR 211:2023 - industry guidance for radon protection
- Also provides damp proof membrane protection
- Dual jointing methods - lap joints can be taped or heat welded

Product description

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

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 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 Single Sided Tape, 75mm x 25m
- Visqueen Gas Resistant Foil Lap Tape, 75mm x 50m
- Visqueen GR Lap Tape, 150mm x 10m
- Visqueen Top Hat Units
- Visqueen Preformed Units
- VisqueenPro Detailing Strip, 300mm x 10m, 500mm x 10m
- Visqueen Radon Sump

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Storage and handling

Visqueen Radon R400 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 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, use Visqueen GR Lap Tape in place of Visqueen Pro Single Sided Tape or Visqueen Gas Resistant Foil Lap Tape.

Installation

Visqueen Radon R400 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 Visqueen Pro Double Sided Tape and sealed with either Visqueen Pro Single Sided Tape or Visqueen Gas Resistant Foil Lap Tape.

Alternatively lap joints can be heat welded to achieve an effective seal. Welded lap joints can be less than 150mm provided the joint integrity is not compromised.

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 Visqueen Pro Double Sided Tape and sealed with either Visqueen Pro Single Sided Tape or Visqueen Gas Resistant Foil Lap Tape. The upstand should be secured with the supplied jubilee clip.

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 Visqueen Pro 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 Visqueen Pro Double Sided Tape and sealed with either Visqueen Pro Single Sided Tape or Visqueen Gas Resistant Foil Lap Tape. Alternatively a patch can be formed using Visqueen Pro 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.

When used in full radon protection areas, a Visqueen Radon Sump or subfloor ventilation system maybe required. For further guidance contact Visqueen Technical Services +44 (0) 333 202 6800.

Usable temperature range

It is recommended that Visqueen Radon R400 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 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.

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Property	Test method	Units	Compliance criteria	Result
Width	BS EN 1848-2	m	-2.5%/+2.5%	4
Length	BS EN 1848-2	m	-10%/+10%	20
Thickness	BS EN 1849-2	mm	-12%/+12%	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/mm ²	>MLV	15
Tensile Strength - CD	BS EN 12311	N/mm ²	>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
Water vapour transmission - permeability	BS EN 1931	g/m ² /d	MDV	0.14
Radon Transmission Rate	SP Test Method	m ² /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 safety datasheet (SDS).

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About Visqueen

The Visqueen name has long been recognised as one of the leading manufacturers of high quality advanced membrane technologies and design based solutions by specifiers, distributors, builders merchants and contractors throughout the UK and Europe.

For further guidance on the Visqueen services shown below, please refer to the relevant section of the Visqueen website (www.visqueen.com) or contact Visqueen Technical Services on +44 (0) 333 202 6800 or enquiries@visqueen.com

Complete Range, Complete Solution



Structural Waterproofing



Gas Protection



Damp Proof Membrane



Tapes



Damp Proof Course



Stormwater



Vapour Control

Visqueen Technical Support

Visqueen combine an extensive product portfolio with industry leading levels of service and support which includes guidance over the phone, bespoke CAD drawings to help with complex detailing, electronic NBS specifications and access to a dedicated team of highly knowledgeable and experienced field based Technical Support Managers.

Visqueen Technical Support is available to all our customers including architects, specifiers, distributors, builders merchants, contractors and end users. All of our technical team have been awarded the industry recognised qualification Certificated Surveyor in Structural Waterproofing (CSSW).

Visqueen CPD Seminars

The Visqueen Continuing Professional Development (CPD) Seminars provide up-to-date information on changes within Building Regulations/Building Standards and nationally recognised industry guidance affecting damp proofing, water vapour control, hazardous ground gas protection and below ground structural waterproofing.

The one hour seminars have been produced for design specialists within the construction sector and are delivered by our team of Technical Support Managers.

Visqueen Training Academy

Based at our manufacturing facility in Derbyshire, the Visqueen Training Academy is available to support Visqueen customers throughout the UK by providing a wide range of both theory and practical skills related training.

Courses include one day product awareness training for our distributors and builders merchants to help them in their day-to-day jobs, through to intensive two day courses giving detailed hands-on training in the practical skills required for safe and robust product installation.