

IV.156.22.Membrane
Date: 18th August 2023

Cropston Properties
25 Linden Lane
Kirkby Muxloe
Leicester
LE9 2EG

Dear James,

RE: Membrane Validation, Plots 1 – 5, The Outwoods, Burbage

Introduction

The site is subject to a development proposal to construct 5No. residential units with private gardens.

Plots 1 - 5 are subject to the installation of Gas Protection measures as per *Characteristic Situation 2 (CS2)*.

As per the provisions in the September 2021 Remediation Method Statement (IV.133.21.Sept.2022), please find below and enclosed the findings of our inspection.

Gas Protection

Gas protection measures are required in plots 1 - 5. These must conform to BS 8485:2015+A1:2019, *Characteristic Situation 2 (CS2)*.

In accordance with BS 8485:2015+A1:2019 the proposed development is classed as Type A buildings and therefore a minimum gas protection score of 3.5 points is required.

Accordingly, the CS2 specification is detailed as:

- Reinforced cast in situ suspended floor slab with minimal penetrations (1.5 points).
- Minimum 2000g gas protection membrane installed. (2 points).
- Laps and joints bonded as per manufacturers details.
- All service entries sealed.

Verification

Ivy House Environmental visited the site on the , 25th and 31st of May and 13th of August 2023 to validate the membrane installed across the above 5 plots. Photographs of the membrane verification and airbricks are illustrated on the enclosed figures.

Conclusions

The validation exercise illustrates that the required protection measures have been competently installed and are fit for purpose.

Yours Sincerely



R P Sutton MRICS

Encl.
Figures



KEY:

● Approximate Site Location



Scotland Farm, Ockbrook, Derby, DE72 3RX
rps@ivyhousenv.co.uk • www.ivyhousenv.co.uk • 01332 661 987

TITLE:

Site Location Plan

PROJECT:

The Outwoods, Burbage

PROJECT No:

IV.156.22

DATE:

09.23

SCALE:

NTS

DRAWN:

RPS

DWG No:

Figure 1

DO NOT SCALE



KEY:



DO NOT SCALE



Scotland Farm, Ockbrook, Derby, DE72 3RX
 rps@ivyhousenv.co.uk • www.ivyhousenv.co.uk • 01332 661 987

TITLE:

Development Proposal

PROJECT:

The Outwoods, Burbage

PROJECT No:

IV.156.22

DATE:

09.23

SCALE :

NTS

DRAWN :

RPS

DWG No:

Figure 2



KEY:

DO NOT SCALE



TITLE:

Plot 1 Membranes

PROJECT:

The Outwoods, Burbage

PROJECT No:

IV.156.22

DATE:

09.23

SCALE:

NTS

DRAWN:

RPS

DWG No:

Figure 3



KEY:

DO NOT SCALE



IVY HOUSE

environmental

Scotland Farm, Ockbrook, Derby, DE72 3RX

rps@ivyhousenv.co.uk • www.ivyhousenv.co.uk • 01332 661 987

TITLE:

Plot 1 Membranes

PROJECT:

The Outwoods, Burbage

PROJECT No:

IV.156.22

DATE:

09.23

SCALE :

NTS

DRAWN :

RPS

DWG No:

Figure 4



KEY:



DO NOT SCALE

TITLE:

Plot 1 Membranes

PROJECT:

The Outwoods, Burbage

PROJECT No:

IV.156.22

DATE:

09.23

SCALE :

NTS

DRAWN :

RPS

DWG No:

Figure 5



KEY:

DO NOT SCALE



Scotland Farm, Ockbrook, Derby, DE72 3RX
rps@ivyhousenv.co.uk • www.ivyhousenv.co.uk • 01332 661 987

TITLE:

Plot 2 Membranes

PROJECT:

The Outwoods, Burbage

PROJECT No:

IV.156.22

DATE:

09.23

SCALE :

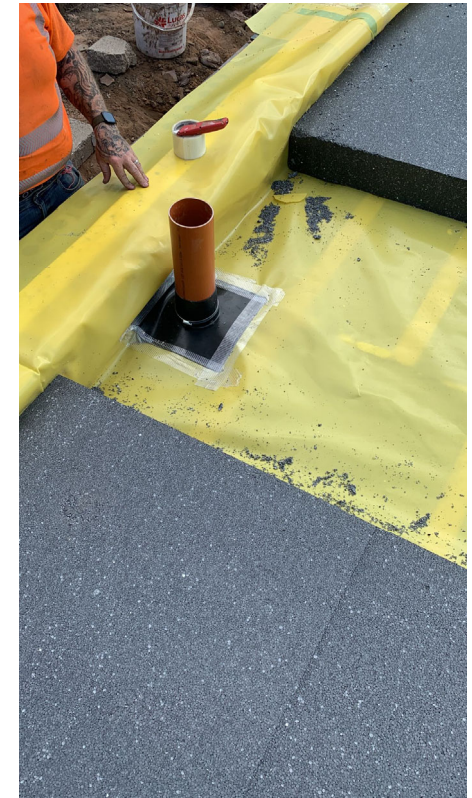
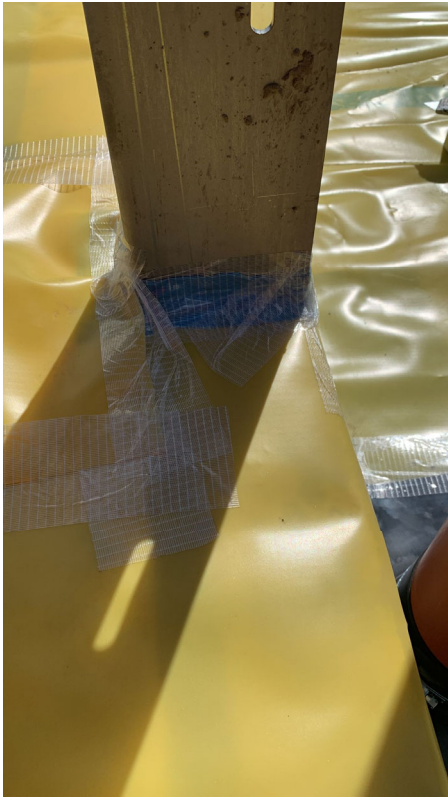
NTS

DRAWN :

RPS

DWG No:

Figure 6



KEY:

DO NOT SCALE



Scotland Farm, Ockbrook, Derby, DE72 3RX
rps@ivyhousenv.co.uk • www.ivyhousenv.co.uk • 01332 661 987

TITLE:

Plot 3 Membranes

PROJECT:

The Outwoods, Burbage

PROJECT No:

IV.156.22

DATE:

09.23

SCALE :

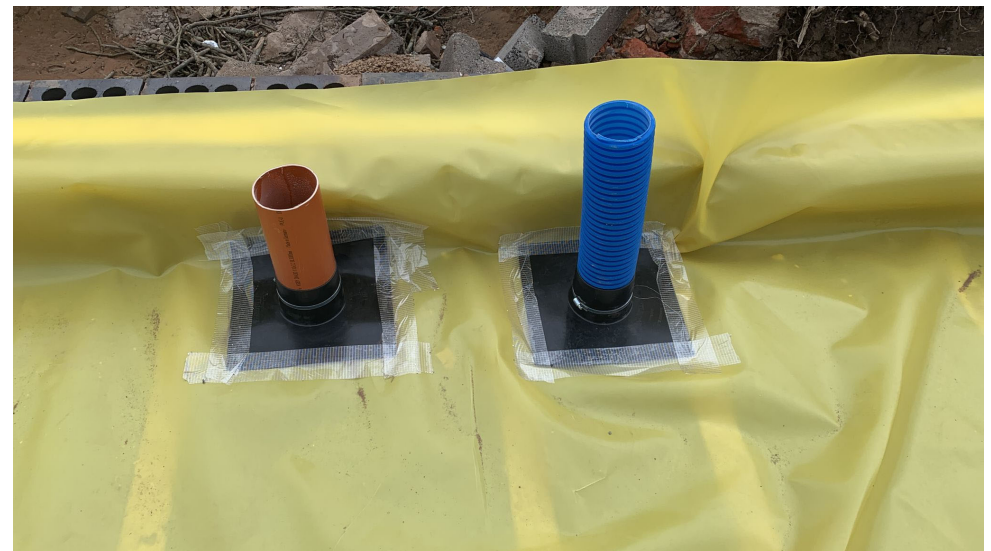
NTS

DRAWN :

RPS

DWG No:

Figure 7



KEY:

DO NOT SCALE



TITLE:

Plot 4 Membranes

PROJECT:

The Outwoods, Burbage

PROJECT No:

IV.156.22

DATE:

09.23

SCALE:

NTS

DRAWN:

RPS

DWG No:

Figure 8



KEY:

DO NOT SCALE



TITLE:

Plot 5 Membranes

PROJECT:

The Outwoods, Burbage

PROJECT No:

IV.156.22

DATE:

09.23

SCALE:

NTS

DRAWN:

RPS

DWG No:

Figure 9



KEY:



DO NOT SCALE

TITLE:

Airbrick Evidence

PROJECT:

The Outwoods, Burbage

PROJECT No:

IV.156.22

DATE:

09.23

SCALE :

NTS

DRAWN :

RPS

DWG No:

Figure 10

Visqueen Low Permeability Gas Membrane

Features and 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
- Flexible - easy to detail and install on site
- Supplied centre folded - reduces the risk of cracks in screed and limits creases
- Multi functional - also acts as a radon and damp proof membrane
- Dual jointing methods - lap joints can be taped or heat welded

Product description

Visqueen Low Permeability Gas Membrane is a robust co-polymer thermoplastic gas membrane, 0.5mm thick, yellow in colour and supplied 4m x 12.5m in a center folded roll.

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
- CE Mark EN 13967:2017
- Quality Management System ISO 9001:2015
- Occupational Health and Safety System ISO 45001:2018
- 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:

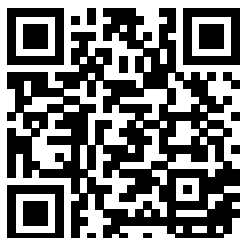
Visqueen Low Permeability Gas Membrane is suitable to prevent the ingress of harmful levels of ground gases for housing applications where NHBC are the warranty provider and the site has been classified as Amber 1. In this application, the membrane is used above a precast suspended segmental subfloor, 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
- Visqueen Top Hat Units
- VisqueenPro Detailing Strip, 300mm x 10m, 500mm x 10m
- Visqueen TreadGUARD 300, 2m x 75m
- Visqueen TreadGUARD 1500, 1m x 2m

Find your local stockist



Visqueen Low Permeability Gas Membrane

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.

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 suspended beam and block floor detailing see LPGM-01.

For internal and external corners Visqueen Preformed Corner Units should be used see PFU-553.

To seal around steel columns use VisqueenPro Detailing Strip see LPGM-52.

For additional detailing information, contact Visqueen Technical Services +44 (0) 333 202 6800.

The product is recyclable and categorised under LDPE recycling code 4.

Visqueen is part of Berry bpi, the largest European recycler of polyethylene. This product is recyclable and should be segregated on site in accordance with site management procedures for plastic waste. We have 4 recycling sites in the UK where the plastic waste could be recycled and converted back into a second life product. Please contact us to find out more.

Visqueen Low Permeability Gas Membrane

Property	Test method	Units	Compliance criteria	Result
Visible defects	EN 1850 -2	-	Pass/Fail	Pass
Length	EN 1848-2	m	-10%/+10%	12.5
Width	EN 1848-2	m	-2.5%/+2.5%	4
Straightness	EN 1848-2	-	Pass/Fail	Pass
Thickness	EN 1849-2	mm	-12%/+12%	0.5
Tensile strength - MD	EN 12311	N/mm ²	MLV	15
Tensile strength - TD	EN 12311	N/mm ²	MLV	15
Tensile elongation - MD	EN 12311	%	MLV	400
Tensile elongation - TD	EN 12311	%	MLV	400
Joint strength	EN 12317-2	N	MDV	298
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) CD	EN 12310-1	N	MDV	333
Resistance to tearing (nail shank) MD	EN 12310-1	N	MDV	335
Water vapour transmission - resistance	EN 1931	MNs/g	MDV	2100
Water vapour transmission - permeability	EN 1931	g/m ² /d	MDV	0.08
Radon permeability	SP Test Method	m ² /s	MDV	5.477 x 10 ⁻¹²
Radon transmittance	SP Test Method	m/s	MDV	1.095 x 10 ⁻⁸
Carbon dioxide permeability	ISO 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	EN 13501-1	Class	MDV	F

Health and safety information

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

Visqueen Low Permeability Gas Membrane

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 PI designs and special projects

From initial design to the completed project, Visqueen are with you every step of the way. Whether it be hazardous ground gas protection and/or below ground waterproofing protection employing barrier, structurally integral or drained systems, Visqueen can offer professional indemnity (PI) insurance for bespoke Visqueen design solutions.

Visqueen Technical Support Managers work with all stakeholders to provide cost effective Visqueen solutions offering complete peace of mind throughout the construction phase and beyond.

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 three day courses giving detailed hands-on training in the practical skills required for safe and robust product installation.