

Aldon STOR

Aldon Rd, Poulton Ind Est, Blackpool, FY6 8DU

Report for Planning Discharge

Gas Protection Validation Report

The Site Investigation report identified that certain Gas Protection Measures would be recommended as per the Following Comment

Radon protection measures are not necessary for the proposed development. Due to elevated methane and carbon dioxide concentrations encountered during the monitoring programme, it is recommended that protection measures in line with Characteristic Situation 3, in accordance with CIRIA guidance, are implemented for the proposed enclosed welfare structures.

During the design Process the Buildings identified as requiring Gas Protection would be the Brick built DNO Sub Station and the Private Switchroom constructed with GRP enclosure.

The welfare unit was deemed not to require Gas Protection as this was to be a Steel Containerized Ready-Made unit sat on Concrete Pedestals 600mm off the Ground.

The Gas protection measure was to wrap the Below Ground Structure/ Foundation with A suitable Gas Membrane and the Product used on this Project was a Visqueen Gas Barrier, details in Appendix A.

The Product was installed as per the Data sheet instructions as Photos Below.

DNO Sub Station





The DNO Sub Station although built by the Developer will be adopted by the District Network Operator (DNO) who have comprehensive checked and passed all stages of the Build as part of the approval process

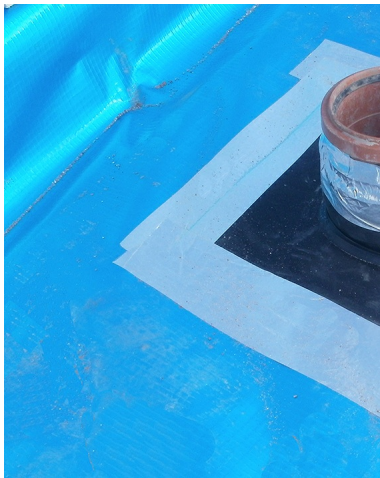
Private Switch Room



Private Switchroom was constructed with Gas Membrane as per the Design

Appendix A

Gas Membrane Data Sheet



- BBA approved, fully complies with BS8485:2015
- Low permeability to methane, radon and carbon dioxide
- Approved for use in NHBC Amber 2 applications
- Multi-layer reinforced LDPE membrane with aluminium core
- High puncture and tear resistance

Description

Visqueen Gas Barrier is a 400 gsm multi-layer reinforced polyethylene membrane with an integral 20 micron aluminium foil that is approved for use in BS8485:2015 and NHBC Amber 2 applications. For ease of identification on site Visqueen Gas Barrier is coloured blue on one side and silver on the reverse. The barrier combines strength and performance with flexibility and easy installation. Visqueen Gas Barrier also acts as a damp proof membrane.

BS8485:2015

When risk assessing under BS8485:2015 for sites which are effected by methane and carbon dioxide then the Visqueen Gas Barrier is an ideal solution.

The membrane has been modified to be 400 gsm with the multi layer structure greatly enhanced to improve its puncture and impact performance.

Visqueen utilise a 20 microns foil to avoid issues associated with thinner (12microns) foils.

Application

The Building Regulations require that proper precautions be taken to prevent danger to health and safety when building on contaminated land. Visqueen Gas Barrier offers a safe solution for the protection of buildings against methane, radon, stythe (a gas commonly found from disused mines, also known as blackdamp), and carbon dioxide, when installed in accordance with the relevant codes of practice such as BRE, CIRIA and the Chartered Institute of Environmental Health Ground Gas Handbook

Typically these are sites previously used as coalfields, landfill or are contaminated industrial sites.

The membrane should be installed blue side up

System components

- Visqueen Double Sided Jointing Tape
- Visqueen Gas Resistant (GR) Foil Tape
- Visqueen Top Hat Units
- Visqueen TreadGUARD1500
- Visqueen Detailing Strip

Installation Guidelines

Visqueen Gas Barrier 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" and CIRIA C665 "Assessing risks posed by hazardous ground gases to buildings", NHB C guidelines, and the Chartered Institute of Environmental Health Ground Gas Handbook. The product is not intended for use where there is a risk of hydrostatic pressure. **The membrane should be installed blue side up**

The membrane should be installed on a compacted sand blinding layer or smooth concrete float finish. 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

VISQUEEN



to take the membrane through the wall. In order to provide a continuous barrier across the cavity Visqueen Gas Resistant 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 on-site contractors.

Jointing and Sealing

Visqueen Gas Barrier should be overlapped by at least 150mm (Welded membranes can be by less than 150mm as long as the joint integrity is not compromised) and bonded with Visqueen Double Sided Tape. The joint should be secured with Visqueen Foil Backed Girth Jointing Tape. Ensure that the membrane is clean and dry at the time of jointing

Airtight seals should be formed around all service entry points. Visqueen Pre-formed Top Hat Units must be used for sealing service entry pipes. The base of the top hat should be sealed using Visqueen Double Sided Tape and Visqueen Foil Backed Girth Jointing Tape is used to secured the joint

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 seal with Visqueen Foil Backed 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 3 dimensional shapes are complex it is recommended a pre-formed unit is used.

NB. In demanding site conditions use Visqueen GR Lap Tape as a high performance alternative to Visqueen Foil Jointing Tape.

Ventilation

When medium to high levels of ground gases are present or when the generation of gases still occurs, then an open void beneath the ground floor should be constructed, as ventilation beneath the ground floor will dilute and disperse the gases to atmosphere. Open voids are normally restricted to beam and block floors or other precast concrete floor systems, an alternative for providing ventilation to in situ concrete floor slabs is to install a Visqueen Ventilation System.

Covering

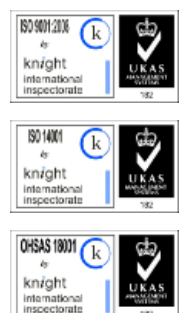
Visqueen Gas Barrier should be covered by a protective layer as soon as possible after installation. Care should be taken to ensure that the membrane is not punctured, stretched or displaced when applying a screed or final floor covering. A minimum thickness of 50mm screed is recommended. When reinforced 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 Gas Barrier is classified as non-hazardous when used in accordance with the relevant Code of Practice (CP 1021973). 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 CP102 1973. Care should be taken to avoid accidental damage when handling the membrane on site. When the weather is cold, Visqueen Double Sided Jointing Tape and Visqueen Foil Backed Girth Jointing Tape should be kept in a warm, dry place until needed. Installation is not recommended below 5°C.

Technical Data and CE Mark



Visqueen Gas Barrier 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 Agreement 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-CPR-13/F060 applies.



Product Data

Product Data

heading	Characteristic	Test method	Units	Compliance criteria	Value or Statement
Visible defects		EN 1850 -2	-	Pass/Fail	Pass
Length		EN 1848-2	m	-0%/+10%	25 or 50
Width		EN 1848-2	m	-0%/+10%	2
Thickness		EN 1849-2	mm	-10%/+10%	0.52
Mass		EN 1849-2	g/m2	-7%/+7%	400
Tensile Strength - MD		EN EN12311	N	>MLV	350
Tensile Strength - CD		EN EN12311	N/mm2	>MLV	350
Tensile Elongation - MD		EN EN12311	%	>MLV	17
Tensile Elongation - CD		EN EN12311	%	>MLV	15
Joint Strength		EN12317-2	N	>MLV	332
Watertightness 2kPa		EN 1928	-	Pass/Fail	Pass
Resistance to impact		EN 12691	mm	>MLV	200
Dart Impact		BS 2782	g	MDV	731
Low temperature flexibility		EN 495-5	oC	-40	Pass
Durability against 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	358
Resistance to tearing (nail shank) MD		EN 12310-1	N	MDV	368
Resistance to static loading		EN 12730	Kg	>MLV	Pass 20
Water vapour transmission - resistance		EN 1931	MNs/g	MDV	7000
Water vapour transmission - permeability		EN 1931	g/m2/d	MDV	0.03
Reaction to Fire		EN 13501-1	Class	MDV	F
BS8485:2015 testing requirements					
Mass		EN 1849-2	g/m2	Average >370	400
Methane Permeability		ISO15105-1	mls/m2/d/atm	Pass/Fail	<40 Pass
Puncture CBR		BS EN ISO 12236	N	MDV	1114
Impact resistance		EN12691	mm	MDV	1000
Tensiles Yield strength MD		ASTM D4885-01	kN/m	MDV	12.5
Tensiles Yield strength CD		ASTM D4885-02	kN/m	MDV	7.3
Yield elongation MD		ASTM D4885-03	%	MDV	18
Yield elongation CD		ASTM D4885-04	%	MDV	19
Tear resistance - trouser method A - MD		BS ISO 34-1	kN/m	MDV	48.2
Tear resistance - trouser method A - CD		BS ISO 34-1	kN/m	MDV	44.8
Tear resistance - angle method B - MD		BS ISO 34-1	N	MDV	53.5
Tear resistance - angle method B - CD		BS ISO 34-1	N	MDV	60.6



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.

VISQUEEN

Part of RPC bpi group

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