



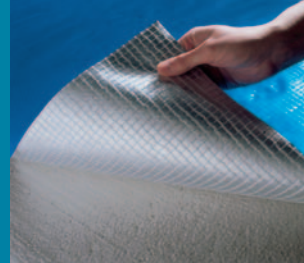
GAS PROTECTION

GAS BARRIER SYSTEM – 17

CO₂ PROTECTION SYSTEM – 25



Complete protection against methane and carbon dioxide



Why the need for a protective Gas Barrier combined with Damp Proof Membrane?



The Building Regulations (Approved Document C) require that proper precautions be taken to prevent danger to health and safety when building on contaminated land. However, a number of significant political and economic factors have led to the need for commercial and residential developments to be located on sites with the potential for gas contamination:

- Political pressure requiring the reclamation and rehabilitation of former industrial sites, including former gas works.
- An acute shortage of available inner city and urban sites.
- Planning consent difficulties in rural locations.

In all cases, those responsible for the planning and implementation of construction projects where

gas contamination may occur, have a duty of care to protect against health risks and may risk legal action if proper precautions - including the use of Gas Barrier Membrane - have not been taken.

The Solution – Visqueen Gas Barrier

Visqueen Gas Barrier offers a safe solution for the protection of buildings and occupiers against methane, radon and carbon dioxide. When installed in accordance with BRE Report: Construction of New Buildings on Gas Contaminated Land, Visqueen Gas Barrier is an essential component of a gas protection system. It is also a fully effective damp proof membrane.

Visqueen Gas Barrier utilises advanced multi-layer lamination processes to create an impenetrable and lasting protection whilst retaining flexibility for easy installation.

What gases are involved?

Three common gases require an integrated foil barrier solution:

Methane

Description: An odourless flammable gas that is explosive when released to atmosphere at levels as low as 5% and exposed to a source of ignition.

Found: Methane is formed wherever there is below-ground degradation of organic substances e.g. landfill sites, sewage treatment areas, mining localities and peat bogs.

Protection: Visqueen Gas Barrier System.

Radon

Description: A naturally occurring radioactive gas that is colourless and odourless. Radon is harmless when vented to atmosphere but life-threatening if allowed to accumulate in

buildings. Radon is the second largest cause of lung cancer after smoking.

Found: Large areas of the UK are affected.

Protection: Visqueen Radon Membrane System. (See separate technical data sheet for further information).

Carbon Dioxide

Description: A colourless gas that in high concentrations can result in asphyxiation.

Found: The gas is formed by the oxidation of carbon compounds such as in landfill sites.

Protection: Visqueen Gas Barrier System. Visqueen CO2 Gas Membrane.



Why is Visqueen Gas Barrier film the preferred option for specialist construction and ground work treatments?

Five layer, precision co-extruded single sheet film provides one piece barrier for safety, security, flexibility and durability.

Features and Benefits:

- **Strength**
- **Performance**
- **Flexibility**
- **Triple-gas Protection**
- **Damp Proof Protection**
- **High Puncture and Impact Resistance**
- **Tough Tear Resistance**
- **Easy to Install**
- **Essential part of a Gas Protection System**

REQUIRED COMPONENTS



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VISQUEEN GAS RESISTANT (GR) DPC	P27
VISQUEEN GAS RESISTANT SELF ADHESIVE DPM	P29
VISQUEEN GAS BARRIER JOINTING SYSTEM	P19
VISQUEEN TOP HAT UNITS	
VISQUEEN DETAILING STRIP	

SPECIFICATION SUPPORT

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TECHNICAL DATASHEETS ✓



TYPICAL INSTALLATION CAD DETAILS ✓

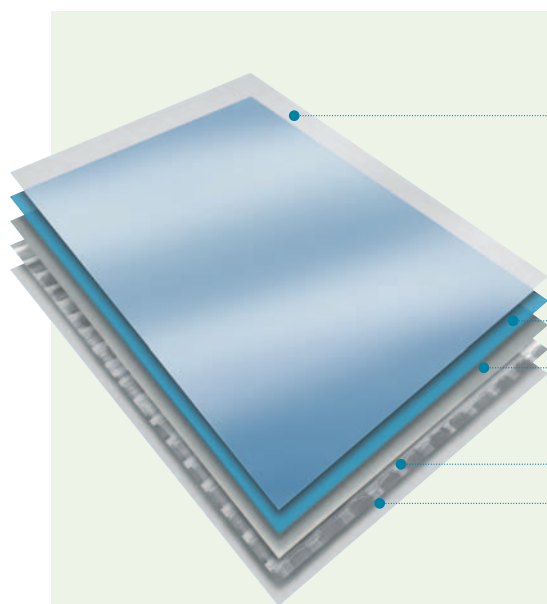


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LDPE

Tough polythene outer layer provides absolute protection against moisture ingress

Visqueen Blue LDPE

Aluminium Foil

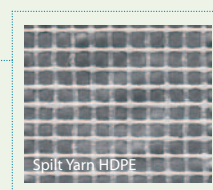
Central shield layer of aluminium provides impenetrable gas-reflecting properties

Split Yarn HDPE

Adhesive split yarn woven matrix provides 3-D tear resistance

LDPE

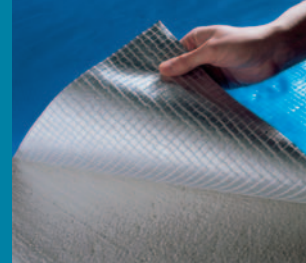
Protective polyethylene outer layer confers additional tensile and tear strength properties



Split Yarn HDPE



Complete protection against methane and carbon dioxide



Easy Installation

Visqueen Gas Barrier has been developed specifically for speed and ease of installation and the following general guidelines should be adopted.

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 149 "Protecting Developments from Methane". The product is not intended for use where there is a risk of hydrostatic pressure.

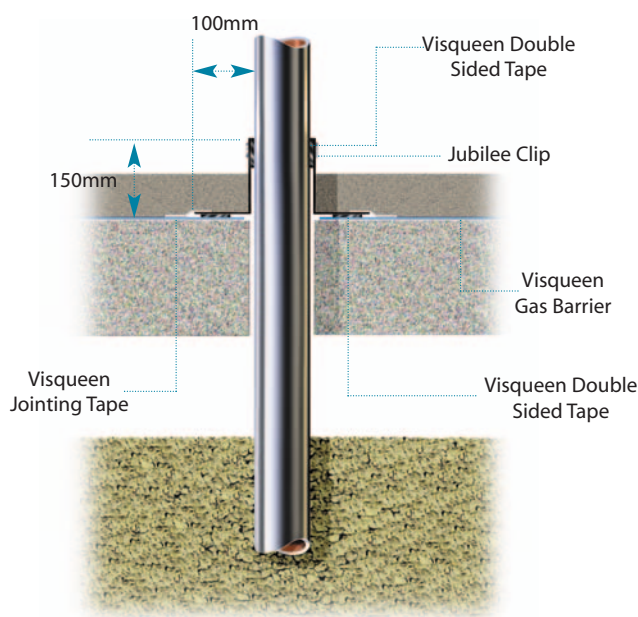
Where additional ventilation is required, Visqueen Gas Barrier should be installed with the Visqueen Gas Ventilation System. Details available on request.

Laying The Barrier

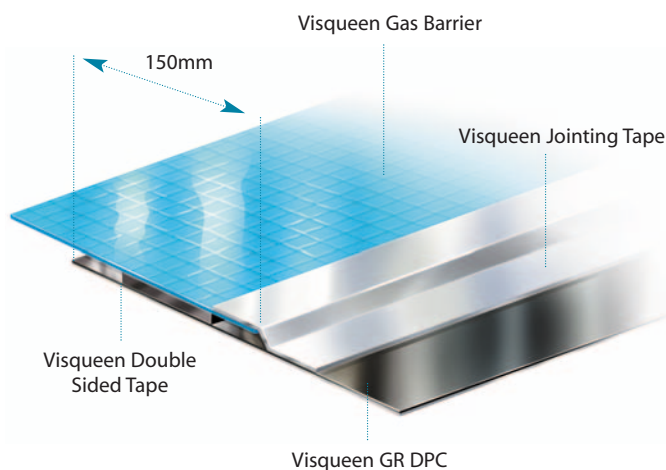
Visqueen Gas Barrier should be installed on a blinded or smooth surface allowing adequate overlap for jointing between the sheets and avoiding bridging (i.e. areas of unsupported membrane).

To avoid slip or shear planes it is not recommended to take membranes through the wall. In order to provide a continuous barrier across the cavity Visqueen Gas Resistant DPC should be sealed to the membrane, taken through the blockwork, up the wall and incorporated below the damp proof course on the outer leaf. Visqueen Gas Resistant (GR) DPC should be installed in accordance with BS 8215: 1991, BS 8000: Part 3, 1989 and BS 5628: Part 3: 2005. All horizontal DPCs must be bedded on both sides with fresh mortar. All DPCs must project through the full width of the wall, including any

Top Hat Detail



Jointing Detail



Visqueen Gas Barrier can be installed with either the blue or silver surface upwards.

externally applied rendering and project 5mm beyond the finished external face.

All cavities must be kept clear of mortar droppings and other debris. Any mortar droppings reaching the DPCs must be removed before they harden, avoiding the use of sharp objects for removal.

Jointing

Visqueen Gas Barrier should be overlapped by at least 150mm and bonded with Visqueen Double Sided Tape. This joint should be secured with Visqueen Foil Backed Girth Jointing Tape. Ensure that the membrane is clean and dry at the time of jointing.

Perforations or punctures in the sheet should be covered with another part of the sheet and have an overlap of at least 150mm and the laps sealed with Visqueen Double Sided Tape and secured with Visqueen Foil Backed Girth Jointing Tape.

Airtight seals should be formed around all service entry points. Visqueen Pre-Formed Top Hat Units are available for sealing around pipe entries. The base of the Pre-Formed unit should be sealed using Visqueen Double Sided Jointing Tape.



Additional Information

Covering

Visqueen Gas Barrier should be covered by a screed or Visqueen Protective Board can be used after installation. Care should be taken to ensure that the membrane is not punctured, stretched or displaced when applying the screed or concrete. A minimum thickness of 50mm screed is recommended.

When reinforced concrete is to be laid over the barrier the wire reinforcements must be prevented from contacting the barrier. It is recommended that the barrier is covered with 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 to protect the installation from moisture and to avoid any risk of overheating the membrane.

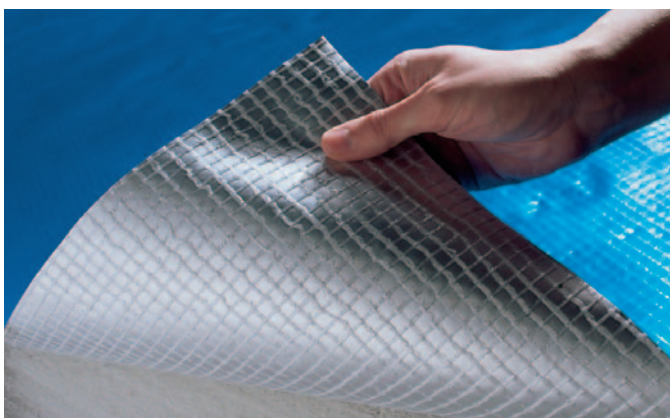
External and internal corners should be rounded and reinforced with Visqueen Detailing Strip. Where this is unavoidable then the angles must be strengthened with a 300mm wide strip of Visqueen Gas Barrier.

Storage and Handling

Visqueen 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.

Exposure to ultraviolet light will embrittle the product. The material is not therefore recommended for uses where it will be exposed to long periods of outdoor weathering. However, weathering will not occur when the membrane is installed in accordance with CP102 1973.

Care should be taken to avoid accidental damage when handling Visqueen Gas Barrier on site.



REQUIRED COMPONENTS



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VISQUEEN GAS RESISTANT (GR) DPC	P27
VISQUEEN GAS RESISTANT SELF ADHESIVE DPM	P29
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VISQUEEN TOP HAT UNITS	
VISQUEEN DETAILING STRIP	

SPECIFICATION SUPPORT

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TECHNICAL DATASHEETS ✓



TYPICAL INSTALLATION CAD DETAILS ✓



HEALTH & SAFETY DATA ✓

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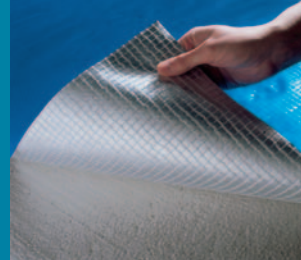
CPD TRAINING SEMINARS ✓



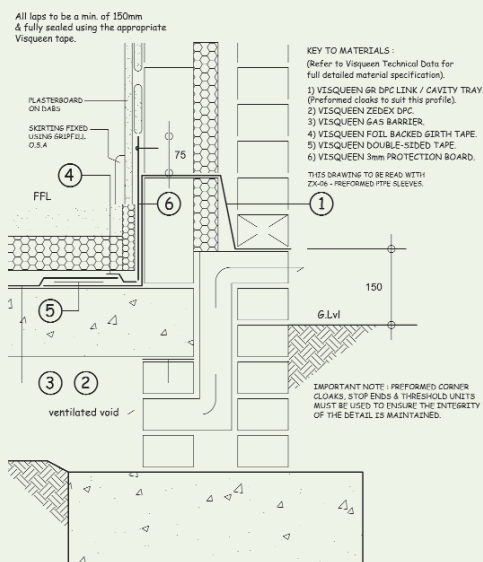
Visqueen Gas Barrier	
Technical Properties	
Length	30m, 60m
Width	1.6m
Square Metres per roll	48m ² , 96m ²
Weight per sq. metre	350gsm
Colour	Blue/Silver
Overall thickness	300mu
Thickness Aluminium Foil	14mu
Technical Performance	
Weight per Unit Area	350 g/m ²
Tensile Strength (BS 2782:Part 3:320A)	43.7N/mm ²
Tear Strength (BS 2782: 360B)	216 N/mm
Methane Permeability	Less than 0.001 mls/m ² /24hr
Water Vapour Permeability (BS 3177)	0.03 g/m ² /day
Visqueen Detailing Strip	
300mm x 10m Gas Resistant two - ply self adhesive membrane.	



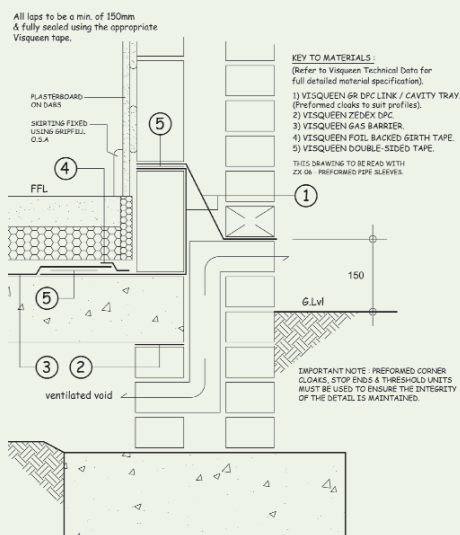
Complete protection against methane and carbon dioxide



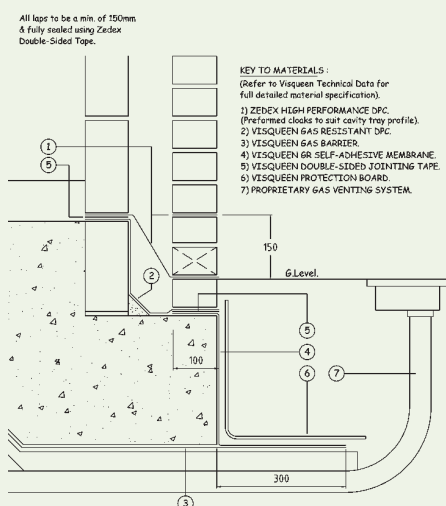
Typical Suspended Slab – Option A (GB- 10)



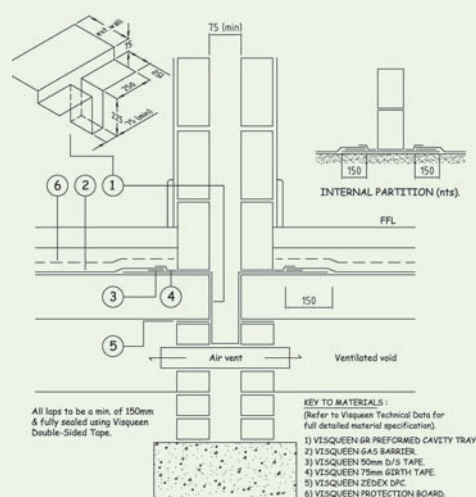
Typical Suspended Slab – Option B (GB- 12)



Typical Raft Foundation (VT-02)



Party Wall – Robust Complaint (PW-01)

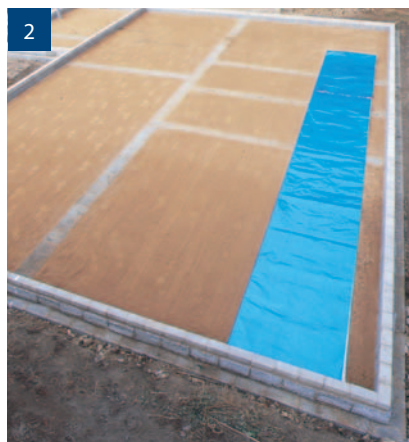


For more typical gas proofing details please visit visqueenbuilding.co.uk/gasbarrier

Typical Installation



Ensure Visqueen Gas Barrier is laid on a level blinded surface.



Carefully unroll the pre-welded membrane.



Ensure that the membrane is not damaged during the unfolding process.



Visqueen Pre-welded membrane will fit exactly to the footprint dimensions.



All penetrations must be sealed on-site.



Seal the top hat unit to the pipe and the gas barrier using Visqueen Double Sided Jointing Tape.



Once the top hat has been installed, seal with a jubilee clip and Visqueen Foil Backed Girth Jointing Tape.



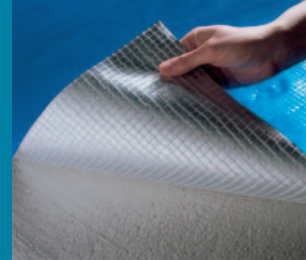
Seal Visqueen Gas Barrier to Gas Resistant DPC using the Visqueen Gas Resistant Jointing System.



The gas protection system is now installed with minimum laps formed on-site.



Complete protection against methane and carbon dioxide



Visqueen Pre-Weld Gas Barrier

Offsite fabrication of Visqueen Gas Barrier Panels offers many critical benefits to designers and developers:

- Up to 65% time saving over traditional tape and roll methods for sealing laps.
- Fast track installation on site.
- Reduced wastage through off site fabrication.
- Visqueen's pre-welding technology ensures a high integrity gas membrane.

Recent building techniques have seen a tendency towards the use of off-site fabrication in many sectors of the building process. It seems logical therefore, that Visqueen Building Products should, in recognising this trend, provide an economical and time saving solution to the needs of the modern developer who require a proven gas barrier system.

With increasing numbers of housing and industrial developments taking place on gas contaminated sites, developers must ensure that a high integrity gas protection membrane is installed, yet continue to operate under the time related pressures of today's fast track building programmes. Welding technology for joining membranes is well established but has previously only been available when specialist contractors have been used on-site. It is widely recognised that joining sheets of membranes on-site is often the most vulnerable element in the installation of a gas protection system.

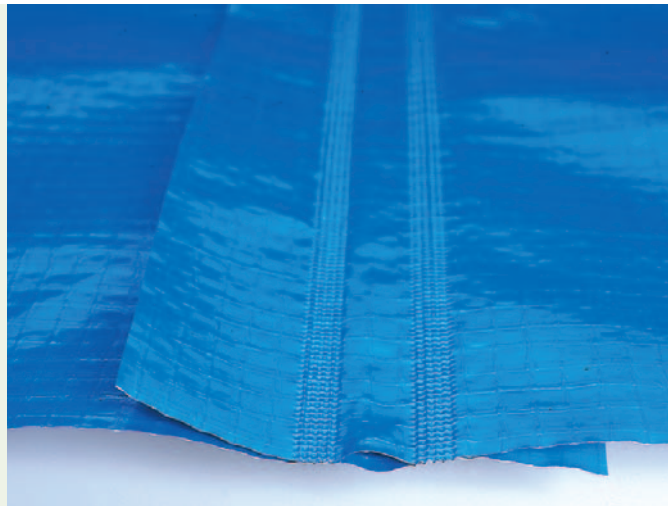
By working closely with the designer in early project stages, Visqueen can produce a

complete gas protection package that is delivered direct to site when required. The use of pre-welded sheets means that the designer can now have increased levels of confidence as all joins are constructed in factory conditions and have been rigorously tested for airtightness before reaching site.

Additionally, as there are fewer taped joins to be performed on site, the gas barrier installation is less affected by adverse weather conditions (to be effective, taped joins must be formed in dry conditions).

Visqueen Gas Barrier is pre-welded in the factory to the exact dimensions of the footprint to the building and can be dispatched with the correct quantities of components such as, top hats, jointing tapes and other components as required to form a high integrity gas barrier system.

Factory fabrication helps reduce wastage on-site and Visqueen's pre-welded joints ensure that a high integrity airtight barrier is always



achieved. The reduced time for joins on-site ensures that for each footprint the installation time is significantly reduced. Each footprint can be identified by a unique reference, thereby, ensuring that on-site ordering is straightforward.

Installation

Pre-welded Visqueen Gas Barrier is installed in the same method as rolls of gas barrier, see Installation Section for more information.

Visqueen Pre-Weld Gas Barrier Join	
Technical Properties	
Tensile Strength MOAT 27 1983 5.5.2	35.3 daN/50mm
Resistance to Water Pressure M.O.A.T 27 983 5.1.4 Resistance to 6m head of water pressure	Pass, No leaks



Visqueen Gas Barrier Housing Kit

In response to today's rapid build housing programmes and with the use of brownfield sites becoming more commonplace, Visqueen Building Products have developed a new kit system which makes it easier for developers to manage the installation of a gas protection system.

The Visqueen Gas Protection Kit System assists developers in ensuring that a high integrity gas protection system is installed without any delays to the construction timetable. Typically, delays can occur through insufficient or incorrect materials being ordered and the time consuming nature of ensuring all gas barrier joins are taped and made gas tight on-site.

The Visqueen Housing Gas Protection Kit System enables all relevant products to be supplied when required on-site in a convenient kit form, allowing for faster installation. The use of off-site fabrication processes ensures that the quality and performance of the gas protection barrier is not compromised.

- **A gas protection system for housing supplied complete in a kit form.**
- **Each kit corresponds to unique plot types and contains all the components necessary to fully protect each house type.**
- **Waste is reduced as only the exact quantity of components necessary to protect the building is supplied.**
- **Ordering from site is made easier as each kit corresponds to a plot type being used on site.**
- **Faster installation on site is achieved as the system is based on Visqueen's off site membrane pre-welding techniques.**



REQUIRED COMPONENTS

AVAILABLE AS A DOWNLOAD FROM
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VISQUEEN GAS RESISTANT (GR) DPC	P27
VISQUEEN GAS RESISTANT SELF ADHESIVE DPM	P29
VISQUEEN GAS BARRIER JOINTING SYSTEM	P19
VISQUEEN TOP HAT UNITS	
VISQUEEN DETAILING STRIP	

SPECIFICATION SUPPORT

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	TECHNICAL DATASHEETS	✓
	TYPICAL INSTALLATION CAD DETAILS	✓
	HEALTH & SAFETY DATA	✓

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The Visqueen Housing Gas Protection System offers the complete solution to protect all dwellings from the ingress of gas. The package consists of the most appropriate gas protection membrane and DPC for site conditions and all of the accessories relevant to the protection of the various structures on-site.

The Gas Membrane is factory welded into panels to cover the individual footprint of each building, offering a significant increase in speed of installation. To ensure that the gas protection membrane is of the highest integrity, each factory welded join is rigorously tested for air-tightness before delivery to site.

By working with the designer at an early stage, Visqueen Building Products can produce a complete Gas Protection Kit that is dedicated to each footprint on the development. Each Kit can then be called off by site as the development progresses. Project administration is eased as each Kit is identified by the use of a unique order reference.



Visqueen CO2 Gas Membrane

- **High quality robust Co-Polymer Thermoplastic Membrane.**
- **High resistance to puncture.**
- **Low permeability to carbon dioxide.**
- **Also acts as a damp proof membrane.**



Technical Data	
Thickness	300mu
Width (m)	4
Length (m)	25
Colour	Yellow
Roll Weight	27.6Kg
Technical Performance	
WVTR BS 2782: Part B, method 820A (1992) 23±2°C 75	0.56g/m ² day
Tear Resistance (Trousers Tear) BS 2782:6 method 631A	
Unaged	MD: 60.8N CD: 54N
Aged	MD: 64.4N CD: 56.6N
Tensile Strength and Stretch BS 2782: 3 method 320A 1976 (1996)	
Strength	
Unaged	MD: 25.7N/mm ² CD: 21.4N/mm ²
Aged	MD: 22.2N/mm ² CD: 23.9N/mm ²
Elongation	
Unaged	MD: 1102% CD: 1067%
Aged	MD: 972% CD: 1133%
Tear Resistance (Nail Tear) MOAT 27 : 5.4.1	
Unaged	MD: 105N CD: 104N
Aged	MD: 106N CD: 107N
Dart Impact Strength (Impact resistance in grams) ASTM	1100g
Low Temperature Flexibility MOAT 27: 1983 5.4.2	Pass
Density	0.92g/cm ³
Mass/unit area BS EN ISO 536 (1997)	280g/m ²
Gas (CO2) permeability test in accordance with ISO 2782: 1995	
Permeability Value	1.18x10 ⁻¹⁶ m ² /sec/Pa
Gas Trans. Rate	146 cc/m ² /hr
Visqueen Zedex CPT High Performance DPC	
Permeability Value	1.58x10 ⁻¹⁶ m ² /sec/Pa
Gas Trans. Rate	66.9 cc/m ² /hr
Visqueen Detailing Strip	
300mm x 10m Gas Resistant two - ply self adhesive membrane.	

Description

The Building Regulations require that proper precautions be taken to prevent danger to health and safety when building on contaminated land. Visqueen CO2 Gas Membrane offers a safe solution for the protection of buildings against carbon dioxide, when installed in accordance with BRE Report: 414 "Construction of buildings on gas contaminated land". Visqueen CO2 is a robust Co-Polymer Thermoplastic membrane; for ease of identification on site the membrane is coloured yellow. The barrier is flexible and is easy to install, and is also suitable for use as a damp proof membrane.

Application

Visqueen CO2 Gas Membrane offers a safe solution for the protection of buildings and occupiers against carbon dioxide ingress. Typically these are sites previously used as coalfields, landfill or are contaminated industrial sites.

Storage and Handling

Visqueen CO2 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. However 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.

Installation

Visqueen CO2 Gas Membrane and ancillary components must be installed in accordance with the recommendations of Building Research Establishment BRE No: 414: "Protective measures for housing on gas contaminated land".

The product is not intended for use where there is the risk of hydrostatic pressure. The membrane should be installed on a blinded or smooth surface allowing adequate overlap for jointing between the sheets and avoiding bridging (i.e. areas of unsupported membrane). To avoid slip or shear planes 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 sealed to the membrane, taken through the blockwork, up the wall and incorporated below the damp proof course on the outer leaf.

Ventilation

An open void beneath the ground floor should be constructed with cross ventilation through the external and internal walls. This will dilute and disperse soil gases. Open voids are normally restricted to beam and block floors or other pre-cast concrete floor systems. An alternative for providing ventilation to in-situ concrete floor slabs is to install the Visqueen Geocomposite Gas Ventilation System.

Jointing

Visqueen CO2 Gas Membrane should be overlapped by at least 150mm and bonded with Visqueen Double Sided Jointing Tape. This joint should be secured with Visqueen Foil Backed Girth Jointing Tape. Ensure that the membrane is clean and dry at the time of jointing. Perforations or punctures in the sheet should be covered with another part of the sheet and have an overlap of at least 150mm and the laps sealed with Visqueen Double Sided Jointing Tape and secured with Visqueen Foil Backed Girth Jointing Tape. Airtight seals should be formed around all service entry points. Visqueen Pre-Formed Top Hat Units are available for sealing around pipe entries. The base of the pre-formed unit should be sealed using Visqueen Double Sided Jointing Tape.

Covering

Visqueen CO2 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 must be prevented from contacting the barrier. It is recommended that the barrier is covered with screed or protection boards before positioning the reinforcement. When under floor heating is being installed, it is recommended that the barrier is positioned between the blinded hardcore and insulation to protect the installation from moisture and to avoid any risk of overheating the membrane.

REQUIRED COMPONENTS



AVAILABLE AS A DOWNLOAD FROM
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VISQUEEN ZEDUX CPT HIGH PERFORMANCE DPC	P12
VISQUEEN GAS RESISTANT SELF ADHESIVE DPM	P29
VISQUEEN GAS BARRIER JOINTING SYSTEM	P19
VISQUEEN TOP HAT UNITS	
VISQUEEN DETAILING STRIP	

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TECHNICAL DATASHEETS



TYPICAL INSTALLATION CAD DETAILS



HEALTH & SAFETY DATA



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External and Internal corners should be round and reinforced with Visqueen Detailing Strip. Where this is unavoidable then the angles must be strengthened with a 300mm wide strip of Visqueen Zedex CPT High Performance DPC.

Useful References

The Building Regulations Approved Document Part C 1992 CP 102: 1973 Code of practice for the protection of buildings against water from the ground.

BS 8102: 1990 Code of practice for the protection of structures against water from the ground.

BS 8215: 1991 Code of practice for the design and installation of Damp Proof Courses in Masonry construction.

BS 8000: Part 4:1989 Workmanship on Building Sites. Code of practice for waterproofing.

Building Research establishment BRE No 414 "Protective measures for housing on gas contaminated land".



Visqueen Gas Resistant (GR) DPC

- **Integral aluminium foil for resistance to methane, radon and CO₂.**
- **Easy to apply using traditional methods.**
- **Use as part of an integral Gas Protection System.**
- **Independently assessed.**



Visqueen Gas Resistant (GR) DPC	
Technical Data	
Dimensional Details	
Roll Length (m)	30
Available Widths	500mm - 1000mm
Weight	0.5kg/m ²
Thickness	0.5mm
Physical Characteristics	
Tensile Strength (N /mm ²) (BS2782:320A)	
Transverse	17.4
Longitudinal	19.0
Elongation at Break% (BS2782:320A) Longitudinal	262%
Elongation at Break% Foil	58.4%
Methane Gas Resistance mls/m ² /24hr	<0.01

Description

Visqueen Gas Resistant (GR) Damp Proof Course is a flexible polyethylene DPC with an aluminium foil designed to prevent the transmission of carbon dioxide, radon and methane gases. This is in addition to the products usage as a damp proof course. Resistance to carbon dioxide, radon and methane is achieved by an integral aluminium film.

Application

Visqueen Gas Resistant (GR) DPC should be used on any site where carbon dioxide, radon or methane is a problem. Methane will occur on any construction, on any sites previously used for landfill. Such conditions can exist on household, commercial and industrial sites. Visqueen Gas Resistant (GR) DPC has excellent physical characteristics and good cold flex performance. It is suitable for vertical, horizontal, stepped and cavity tray applications.

Storage & Handling

Visqueen Gas Resistant (GR) DPC is classified as non hazardous when used in accordance with the relevant British Standards. The product is chemically inert and is not affected by acids and alkalis that may be present in the sub-soils.

Installation

Visqueen Gas Resistant (GR) DPC should be installed in accordance with BS 8215:1991, BS 8000: Part 3, 1989 and BS 5628: Part 3, 2005. All horizontal DPCs must be bedded on both sides with fresh mortar. All DPCs must project through the full width of the wall, including any externally applied rendering and project 5mm beyond the finished external face. All cavities must be kept clear of mortar droppings and other debris. Any mortar droppings reaching the DPCs must be removed before they harden, avoiding the use of sharp objects for removal. Reference should also be made to NHBC guidance notes and BRE Report BR211.

Good Practice Tip

To avoid slip or shear planes it is not recommended to take membranes through the wall. In order to provide a continuous barrier across the cavity Visqueen Gas Resistant DPC should be sealed to the membrane, taken through the blockwork, up the wall and incorporated below the damp proof course on the outer leaf.

Visqueen Gas Resistant (GR) DPC should be installed in accordance with BS 8215: 1991, BS 8000: Part 3, 1989 and BS 5628: Part 3, 2005. All horizontal DPCs must be bedded on both sides with fresh mortar. All DPCs must project through the full width of the wall, including any externally applied rendering and project 5mm beyond the finished external face.

All cavities must be kept clear of mortar droppings and other debris. Any mortar droppings reaching the DPCs must be removed before they harden, avoiding the use of sharp objects for removal.

REQUIRED COMPONENTS



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VISQUEEN GAS RESISTANT (GR) DPC	P27
VISQUEEN GAS RESISTANT SELF ADHESIVE DPM	P29
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VISQUEEN TOP HAT UNITS	
VISQUEEN DETAILING STRIP	

SPECIFICATION SUPPORT

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TECHNICAL DATASHEETS ✓



TYPICAL INSTALLATION CAD DETAILS ✓



HEALTH & SAFETY DATA ✓

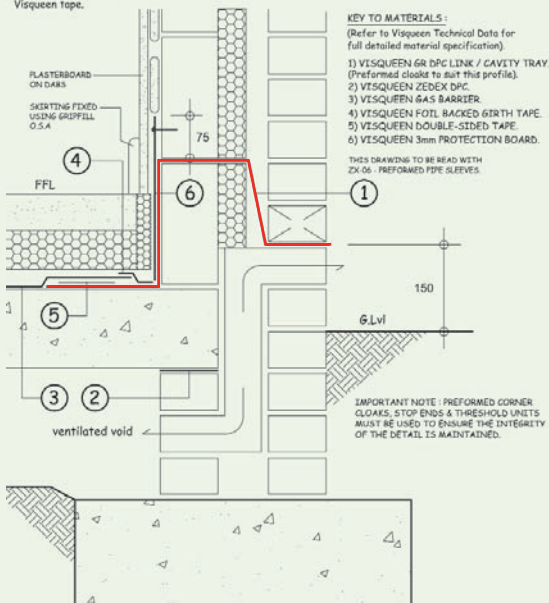
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Typical Suspended Slab – Option A (GB- 10)

All laps to be a min. of 150mm
& fully sealed using the appropriate
Visqueen tape.



nbsPlus



Visqueen Gas Resistant Self Adhesive Membrane

- **Part of the Visqueen Gas Barrier system.**
- **Integral aluminium foil for resistance to methane, radon and CO₂.**
- **Tough HDPE polyethylene membrane provides resistance to puncture and tearing.**



Description

Visqueen Gas Resistant (GR) Self Adhesive Membrane is designed to prevent the transmission of carbon dioxide, radon and methane gases in tanking applications or where hydrostatic pressure is present. For other applications Visqueen Gas Barrier should be considered. This is in addition to the products usage as a damp proof membrane.

Resistance to gas is achieved by an integral aluminium film. Visqueen Gas Resistant (GR) Self Adhesive Membrane should be used along with Visqueen Tanking Primer Solution, providing the optimum surface to receive Visqueen Gas Resistant (GR) Self Adhesive Membrane. Visqueen Gas Resistant (GR) Self Adhesive Membrane is suitable for use with Visqueen Gas Resistant (GR) DPC, Visqueen Gas Barrier, Visqueen CO₂ Gas Membrane and Visqueen Radon Membrane.

Applications

Visqueen Gas Resistant (GR) Self Adhesive Membrane should be used on any site where carbon dioxide, radon or methane is a problem. Methane and Carbon Dioxide will occur on any construction and on any sites previously used for landfill as a result of bacteriological conditions. Such conditions can exist on household, commercial and industrial sites. Adequate ventilation must be ensured at all times during application.

Additionally radon has been identified as being present in some 21 counties in England by the National Radiological Protection Board.

Storage & Handling

Visqueen Gas Resistant (GR) Self Adhesive Membrane should be stored in cartons, on end and kept dry. Visqueen Gas Resistant (GR) Self Adhesive Membrane is classified as non-hazardous when used in accordance with the relevant British Standards. Visqueen Tanking Primer Solution should be stored in original unopened containers in a cool dry area. Suitable protective clothing should be worn when using.

Visqueen Gas Resistant Self Adhesive Membrane	
Dimensional Details	
Roll Length	20m
Roll Width	1m
Area per roll	20m ²
Weight	26kg
Physical Characteristics	
Methane Gas Resistance	<0.03 mls/m ² /24hr
Visqueen Tanking Primer Solution	
Dry Time	4-8 hrs at normal temperature
Application Rate - concrete	4.6m ² / Ltr
Availability	5Ltr or 25Ltr
Protection Board - Bitumen Impregnated	
Thickness	3mm
Dimension	1m x 2m

Installation Instructions

Ensure that the surface to be treated is free from loose particles, dry and frost free. Installation should be in accordance with BS 8102. All surfaces should be sealed using Visqueen Tanking Primer Solution and allowed to dry thoroughly.

All surfaces should be free from ice, frost or condensation. Slabs must be surface dry, free from sharp protrusions and any hollows filled with high strength mortar. All surfaces should be primed using Visqueen Tanking Primer Solution applied by brush or roller and allowed to dry before the application of Visqueen Gas Resistant Self Adhesive Membrane.

Visqueen Gas Resistant Self Adhesive Membrane should be laid by peeling back the protective silicone release paper and applying the self adhesive face onto the prepared surface. The material should be brushed on to the surface to ensure good initial bond. Adjacent rolls are aligned and overlapped a minimum 150mm at side and ends and the overlaps thoroughly rolled with a firm constant pressure to ensure a complete and continuous adhesion to achieve gas tight integrity between the layers.

To provide complete security of the system, care must be taken when detailing service penetrations and changes of levels. The use of angle fillets and reinforcing strips is essential. Visqueen Gas Resistant Self Adhesive Membrane is fully compatible with other elements of the Visqueen Gas Protection System.

After installation the membrane should be covered as soon as possible with a sand / cement screed or other protective layer. Any punctures or damaged areas should be cleaned and patched with the membrane.

Visqueen Gas Resistant (GR) Self Adhesive Membrane must be continuous with the Visqueen Gas Resistant DPC in surrounding walls – all laps must be sealed using Visqueen Double Sided Jointing Tape.

REQUIRED COMPONENTS

AVAILABLE AS A DOWNLOAD FROM
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VISQUEEN GAS RESISTANT (GR) DPC	P27
VISQUEEN GAS RESISTANT SELF ADHESIVE DPM	P29
VISQUEEN TOP HAT UNITS	

SPECIFICATION SUPPORT

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	TYPICAL INSTALLATION CAD DETAILS	✓
	HEALTH & SAFETY DATA	✓

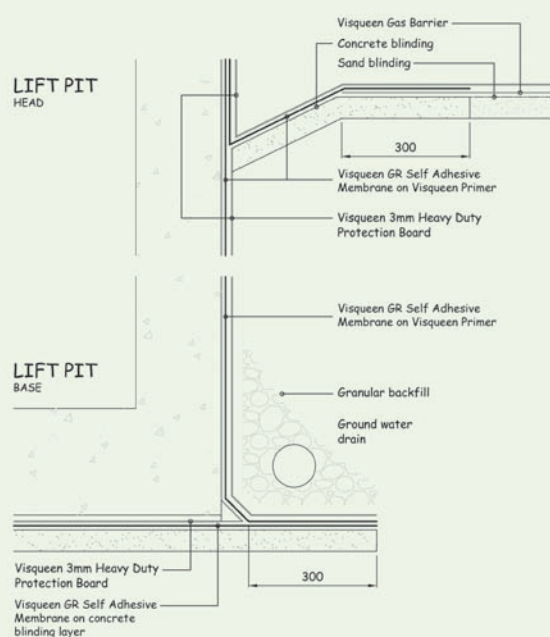
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Lift Pit External Tanking Detail (LP-01)





Visqueen GX GeoMembrane System

- **Suitable for use on hydrocarbon contaminated sites.**
- **High Puncture and Tear Resistance.**
- **Excellent Chemical Resistance.**
- **Excellent Welding Properties.**
- **Low Permeability to Hydrocarbon Gases.**

Description

Visqueen GX Geomembrane is a high quality single layer HDPE membrane and is suitable for use as a barrier membrane on brownfield sites that require protection from dangerous contaminants such as hydrocarbons and methane, together with excellent damp proofing characteristics.

Application

Visqueen GX Geomembrane has a proven track record as a barrier membrane on gas contaminated and hydrocarbon contaminated brownfield sites.

Visqueen GX Geomembrane combines strength with flexibility enabling high levels of stress/crack resistance to be achieved together with excellent bi-axial load absorption characteristics. Due to its high puncture and impact resistance GX Geomembrane generally requires no protective screed or boarding when laying reinforced concrete above it.

Visqueen GX Geomembrane has been designed to exhibit superior welding properties when compared to conventional materials. High quality welding can be performed in a wide range of climate conditions. The material can be welded with one of three principal systems:

- **Hot Edge Welding**
- **Air Welding**
- **Extrusion Welding**

Material Specification

Visqueen GX Geomembrane can be manufactured in a range of sizes to suit individual applications; standard rolls are also available and the membrane can also be prefabricated into panels prior to installation. Visqueen strongly advise the use of the following components when installing the membrane.

Visqueen GX Geomembrane System		
Technical Data		
	1mm	1.5mm
Density (ASTM D1505)	941kg/m ³ +/- 1%	941kg/m ³ +/- 1%
Thickness (BS2782-630A)	+/- 5%	+/- 5%
Melt Flow Index (ASTM D1238)	<0.5gm/10 minutes	<0.5gm/ 10 minutes
Unaged Tensile (MPa)	31.2	29.3
Unaged Elongation (%)	860	845
Unaged Instrument Impact(N)	2220.11	3357.5
Tear Strength (N/mm)	156.8/145.6	149.1/156.5
Petrol Permeability (g/m ² /hr)	7.0	3.8
Diesel Permeability (g/m ² /hr)	14.8	1.7
Methane Permeability (cc/m ² /hr)	3.2	1.95
Visqueen GX Geomembrane System		
Dimensions		
GX Geomembrane	1.0mm x 2.95m x 30m (88.50m ²) Standard Roll	
GX Geomembrane	1.5mm x 2.95m x 25m (73.75m ²) Standard Roll	
GX Jointing System	Two part jointing System	
GX Geocomposite Venting System	12 & 25mm void formers	
Pre-Formed Top Hat Units	For sealing around service pipe penetrations	
GX DPC	645mm / 970mm x 30m Roll A flexible reinforced Elvaloy DPC designed to prevent the transmission of hydrocarbon gases through the cavity	
Pre-formed DPC Internal & External Corner Units	To form an effective seal at corners	



Installation

Visqueen GX Geomembrane is designed to exhibit superior welding properties therefore we recommend factory welding or on-site welding methods of jointing when the membrane is to be installed below a ground floor construction.

In certain applications where the membrane is to be installed above a suspended in-situ concrete slab or block and beam suspended floor, the sealing of laps can be achieved using the GX Jointing Tape system. In these instances Visqueen GX Jointing Tape should be applied approximately 50mm from the edge. The next width of Visqueen GX Geomembrane should then be overlapped. For effective protection all laps must be a minimum of 150mm and the joint should be secured with Visqueen GX Girth Jointing Tape, a single sided tape which provides added security against any potential leakage paths. Always ensure that the membrane is clean, dust free and dry at the time of jointing. Visqueen GX Geomembrane 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", Ciria Report 149 "Protecting development from methane", together with codes of practice CP102 and BS 8102.

Visqueen GX Membrane should be installed on a blinded or smooth surface allowing adequate overlap for jointing between the sheets and avoiding bridging i.e. areas of unsupported membrane. A final floor covering should be installed above it and care should be taken to ensure the membrane is not damaged prior to this.

To avoid slip or shear planes it is not recommended to take membranes through the wall. In order to provide a continuous barrier across the cavity Visqueen GX DPC should be sealed to the membrane, taken through the blockwork, up the wall and incorporated below the damp proof course on the outer leaf.

Visqueen GX DPC should be installed in accordance with BS 8215: 1991, BS 8000: Part 3, 1989 and BS 5628: Part 3, 2005. All horizontal DPCs must be bedded on both sides with fresh mortar. All DPCs must project through the full width of the wall, including any externally applied rendering and project 5mm beyond the finished external face.

Venting

Open voids beneath the ground floor with cross ventilation through the external walls will normally be required. Visqueen GX Geocomposite void formers or block and beam suspended floors supported on load bearing walls will dilute and disperse gases.

Please contact the Visqueen Technical Support Team for more information.

REQUIRED COMPONENTS

AVAILABLE AS A DOWNLOAD FROM
VISQUEENBUILDING.CO.UK/GX

VISQUEEN GX GEOMEMBRANE	DL
VISQUEEN GX JOINTING SYSTEM	DL
VISQUEEN GEOCOMPOSITE VENTING SYSTEM	DL
VISQUEEN GX DPC	DL

SPECIFICATION SUPPORT

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Technical Support

Due to the wide variety of hydrocarbon contaminants found, we strongly recommend the use of the Visqueen Building Products Technical Support Team at an early design stage so that the most appropriate detailing and material specification are adopted.

Technical Data

For further technical data please refer to
visqueenbuilding.co.uk/gx