

# Visqueen Urban Drainage

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- ▮ **Impervious membrane for underground stormwater storage systems**
- ▮ **Also suitable for permeable paving systems**
- ▮ **High resistance to puncture**
- ▮ **Restricts water entering the sub-grade**
- ▮ **Preserves sub-grade structural integrity**
- ▮ **Installed with tape bonded or welded joints**
- ▮ **Manufactured in the UK**



## Background

Every potential major development in the UK is examined for the risk of flooding following storm events. Sustainable drainage systems (known as SUDS) offer an alternative approach to traditional drainage. SUDS effectively manage drainage at source and aim to detain run-off and release it slowly into watercourses. The "Code for Sustainable Homes 2006" (a code of practice for sustainable home building) uses a sustainable rating system that helps designers' and builders' choice of development and also aids home buyers' selection of home. Category 4 "surface water run off" mentions that added points will be scored if an attenuation system is used. The Visqueen UDG, used in conjunction with an underground stormwater system, increases the development's sustainable rating.

## Description

Visqueen Urban Drainage Geomembrane is a UK manufactured membrane using high performance polymers, suitable for underground stormwater storage systems and also for permeable paving systems.

The Visqueen Urban Drainage Geomembrane System has been specially designed and tested for use with underground stormwater storage systems. Wavin has accepted it for use with their AquaCell® Stormwater Management System when installed in accordance with Visqueen Building Products' instructions.

When used under permeable block systems it is important to use Visqueen underlay and protection layer in conjunction with Visqueen Urban Drainage Geomembrane. Please see typical details UDG 03, UDG 04 and UDG 05.

Impermeable geomembranes used in stormwater storage systems are subjected to very high hydrostatic pressures during the lifetime of the system. To avoid

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STRUCTURAL WATERPROOFING  
 AND GAS PROTECTION SYSTEMS

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geomembrane failure in these demanding applications Visqueen Building Products has designed a high performance geomembrane system. For these type of applications use Visqueen High Performance UDG.

Visqueen Urban Drainage Geomembrane is a category 1 impermeable membrane under BS 7533 part 13.

## System

Visqueen Urban Drainage Geomembrane can be supplied as either a taped system to be fabricated on site or partially fabricated as factory welded panels. Where an installation necessitates on-site welding other Visqueen Geomembranes will be supplied.

### SPECIFICATION SUPPORT

The following items are available to view online or to download from [www.visqueenbuilding.co.uk](http://www.visqueenbuilding.co.uk)

- . Technical Datasheets
- . Typical installation CAD details
- . Health and Safety data

Register online for access to NBS Clauses and for information about our CPD Seminars



### TECHNICAL SUPPORT

For advice on detailing or installation call Visqueen Building Products Technical Help Line 0845 302 4758. Pricing & Availability may be obtained from our UK Network of merchant stockists. For details of these call our Sales Office on 0845 302 4758.

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## Factory Welded Panel Installations

Factory welded panels of Visqueen Urban Drainage Geomembrane are recommended for larger attenuation schemes where there are a greater number of joints. Visqueen Urban Drainage Geomembrane can be prewelded to suit tank dimensions, minimising the amount of workmanship required on site during installation.

The benefits of factory welded panels are pre-tested high integrity joints as well as allowing for a faster installation time. Factory welded panels may then be tape jointed on site using the installation procedures detailed in the previous section. Under certain site conditions taped joints may not be suitable. Please refer to the earlier adverse ground conditions section for more information.

## On-Site Jointing Procedures

When taped joints are used on site the Visqueen Urban Drainage System can be used on any attenuation or storage installation (not more than two units deep) other than those which are:

- In contaminated ground.
- In high water table.

All laps must be a minimum of 150mm wide. Visqueen UDG Jointing Tape should be applied approximately 50mm from the edge. The next width of Visqueen Urban Drainage Geomembrane should then be overlapped. Ensure that the geomembrane is clean, dust free and dry at the time of joining. The use of Visqueen UDG Protection Board provides additional support to taped joints as well as eliminating the risk of puncture from backfill.

Visqueen Urban Drainage Geomembrane taped joints have been extensively tested for durability under hydrostatic pressure and have been proved to be highly effective.

## Geomembrane Installation Procedures

- Ensure that the base of the trench is a structurally sound, smooth, level surface cleared of any loose particles.
- This surface must then be covered by 100mm sand blinding, levelled and compacted.
- Cover the bed with a suitable geotextile fleece to ensure that the geomembrane is not punctured.
- Lay Visqueen Urban Drainage Geomembrane over the geotextile and up the sides of the trench, detailing around corners using Visqueen UDG Corner Units.
- Take the geomembrane around the structure ensuring that corner units are positioned at all corners and that the tank is completely sealed.
- Protect the geomembrane from backfill by using Visqueen UDG Protection Board.
- Lay a 100mm sand bed between the trench walls and Visqueen UDG Protection Boards.
- The geomembrane laid on top of the units should be protected as soon as possible after installation with Visqueen UDG Protection Board and 100mm sand blinding.
- The integrity of the Visqueen Urban Drainage Geomembrane sheet must be maintained during installation. Visqueen Urban Drainage Geomembrane is resistant to puncturing and tearing however, where tears or punctures occur, these should be covered with another part of the sheet, overlapped by at least 150mm and sealed with Visqueen UDG Jointing Tape. Installations should be carried out above 5°C.
- For applications outside of these conditions please contact Visqueen Building Products for advice.

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## Storage and Handling

Visqueen Urban Drainage Geomembrane is classified as non-hazardous when used in accordance with our instructions.

The product is chemically inert and is not generally affected by acids and alkalis that may be present in the sub-soils. The material is not recommended for use where it will be exposed to long periods of outdoor weathering. However, weathering will not occur when the membrane is installed in accordance with our instructions. Care should be taken to avoid accidental damage when handling Visqueen Urban Drainage Geomembrane on site.

When the weather is cold Visqueen UDG Jointing Tape should be kept in a warm, dry place until needed. Installation is not recommended to be carried out below 5° C.

## TYPICAL PROPERTIES

### Technical Data

#### Visqueen UDG Membrane

Thickness	500mu	
Colour	Black	
Roll Dimensions	4m x 12.5m	3.2m x 18.5m

#### Resistance to Water Pressure-Taped Joint

24 hours @ 60kPa	Pass
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2 hours @ 240kPa	Pass
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Resistance to Impact EN12691	250mm
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Tensile Strength EN12311	20/21 N/mm <sup>2</sup>
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Elongation at Break EN 12311	790/880%
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Nail Tear EN 12310	340/350N
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Puncture Resistance ASTM D 4833	135N
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#### Visqueen UDG Double Sided Jointing Tape

Thickness	1.5mm
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Colour	Black
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Roll Dimensions	100mm x 15m
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