Technical Datasheet

Visqueen High Performance Urban Drainage Geomembrane

Features & benefits

- Used in stormwater attenuation systems and as an impermeable membrane in permeable paving systems
- Dual jointing methods - depending upon the specification, lap joints can be taped or heat welded

Product description

Visqueen High Performance Urban Drainage Geomembrane is a robust thermoplastic geomembrane, black in colour, 1mm thick and supplied in single wound rolls (not folded), 1.4m x 50m.

Approvals and standards

- Conforms to the SUDS specification requirements of Appendix C of CIRIA C697 and C753
- Suitable for use as an impermeable membrane in a permeable paving systems to BS 7533-13:2009 (System C - no infiltration)
- 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 High Performance Urban Drainage Geomembrane is used for the wrapping of underground stormwater attenuation crates especially in heavy duty situations (high water table), and as an impermeable membrane placed on top of the subgrade formation level and to the sides of the sub-base within a permeable paving system.

Regarding attenuation systems, Visqueen High Performance Urban Drainage Geomembrane offers excellent welding characteristics and therefore the joints can resist hydrostatic pressure. The product can be used with taped joints but it is only advised if the tank has a depth of 2 crates or less.

The product is also used in applications such as containment and cut-off trenches, lagoons, canals and artificial lakes.

System components

- VisqueenPro Detailing Strip, 300mm x 10m
- Visqueen Top Hat Units
- Visqueen TreadGUARD 300, 2m x 75m
- Visqueen 100mm Double Sided Butyl Tape, 100mm x 15m
- Visqueen NF-Detailing Strip, 300mm x 10m
- Visqueen NF-150 Lap Tape, 150mm x 10m

Storage and handling

Visqueen High Performance Urban Drainage Geomembrane 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 High Performance Urban Drainage Geomembrane can be cut with a sharp retractable safety knife or robust scissors.

Hand rollers are required during lap joint formation and sealing detailing. Typical hand rollers include 40mm silicone pressure roller and 6mm brass penny pressure roller.

Consult the project specification to ensure the correct method of lap joint formation for the project is followed (welded or taped).

Installation

Visqueen High Performance Urban Drainage Geomembrane should be clean and dry at the time of jointing. The membrane exhibits superior welding properties making it ideal for on-site welding of joints and this method should be employed wherever possible. When welding, the overlap in the geomembrane is typically 100mm and when hand welding, a 35mm weld is normally achieved. When hand welding, a roller must be used.

In certain applications the sealing of laps can be achieved using tapes. When taping joints, overlap by at least 150mm, bond with Visqueen 100mm Double Sided Butyl Tape and seal lap joints with Visqueen NF-150 Lap Tape. All lap joints should be pressed and rollered to ensure a completely sealed joint is achieved.

Where the geomembrane lap joints are being welded, pipe penetrations should be sealed with welded geomembrane. Alternatively VisqueenPro Detailing Strip or Visqueen NF-Detailing Strip can be used to seal pipe penetrations.

Heanor Gate Road, Heanor, Derbyshire, DE75 7RG
+44 (0) 333 202 6800 I enquiries@visqueen.com I www.visqueen.com

Visqueen High Performance Urban Drainage Geomembrane

Where the geomembrane lap joints are being taped, Visqueen Preformed Top Hat Units should be used for sealing pipe penetrations. The base of the top hat and the upstand should be bonded using Visqueen 100mm Double Sided Butyl Tape and sealed with Visqueen NF-150 Lap Tape. The upstand should be secured with the supplied jubilee clip. Alternatively VisqueenPro Detailing Strip or Visqueen NF-Detailing Strip can be used to seal pipe penetrations.

If the geomembrane is punctured or perforated a patch of the same material should be lapped at least 150mm beyond the limits of the puncture and bonded using the same technique as employed for the geomembrane lap joints. Alternatively, depending upon specification, a patch can be formed using VisqueenPro Detailing Strip or Visqueen NF-Detailing Strip lapped at least 150mm beyond the extents of the puncture.

When used as a liner for stormwater attenuation crates, ensure that the base of the trench is level and free from voids or protrusions. Blind the substrate with minimum 100mm sand blinding, level and compact. When installing the geomembrane, it should be protected on the external face with Visqueen TreadGuard 300 protection layer. Visqueen UDG Corner Protection Units (unit dimension 150mm x 150mm x 150mm) should be positioned at the external corners of the crate system. Due to the robust nature of the geomembrane, in normal service conditions it does not require covering with a protective layer on the internal face, however care should still be taken to ensure that it is not punctured, stretched or displaced when positioning the crates.

When used in a System C permeable paving application, the geomembrane should be laid on a smooth continuous blinded subgrade free from irregularities such as voids or protrusions, or alternatively the blinding can be replaced with a layer of Visqueen TreadGuard 300 protection.

Long periods of exposure to ultraviolet light will reduce the effectiveness of the membrane. The membrane should be covered immediately after installation to prevent damage from following trades, ultraviolet light, etc.

Usable temperature range

It is recommended that Visqueen High Performance Urban Drainage Geomembrane and all associated system components should not be installed below 5°C.

Additional information

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.

Visqueen High Performance Urban Drainage Geomembrane data table

Property	Test method	Units	Compliance	Result

Heanor Gate Road, Heanor, Derbyshire, DE75 7RG
+44 (0) 333 202 6800 I enquiries@visqueen.com I www.visqueen.com

Visqueen High Performance Urban Drainage Geomembrane

			criteria	
Colour				Black
Length	BS EN 1848-2	m	0	50
Width	BS EN 1848-2	m	0	1.4
Thickness	BS EN 1849-2	mm	+/-20%	1
Mass	BS EN 1849-2	g/m²	-1	974
Tensile strength - MD	BS EN 12311	N/mm²	MLV	22
Tensile strength - CD	BS EN 12311	N/mm²	MLV	20
Tensile elongation - MD	BS EN 12311	%	MLV	799
Tensile elongation - CD	BS EN 12311	%	MLV	848
Joint strength	BS EN 12317-2	N	MLV	515
Watertightness to 60kPa for 24 hours	BS EN 1928	-	Pass/Fail	Pass
Resistance to impact	BS EN 12691	mm	MLV	600
Resistance to static loading	BS EN 12730	kg	MDV	-20
Resistance to nail tear - MD	BS EN 12310-1	N	MLV	705
Resistance to nail tear - CD	BS EN 12310-1	N	MLV	745
Durability - heat ageing	BS EN 1296	-	Pass/Fail	Pass
Durability - chemical resistance	BS EN 1847	-	Pass/Fail	Pass
Resistance to low temperature	BS EN 495-5	°C	MDV	-40
Water vapour transmission - resistance	BS EN 1931	MNs/g	MDV	1171
Water vapour permeability	BS EN 1932	g/m²/day	MDV	0.11
Reaction to fire	BS EN 13501-1	Class	MDV	F
Chemical resistance - acids	BS EN 14414-A	-	Pass/Fail	Pass
Chemical resistance - alkalies	BS EN 14414-B	-	Pass/Fail	Pass
Chemical resistance - organic solvents	BS EN 14414-C	-	Pass/Fail	Pass
Chemical resistance - visual defects	BS EN 14414	-	Pass/Fail	Pass
Resistance to leaching - hot water	BS EN 14415-A	-	Pass/Fail	Pass
Resistance to leaching - aqueous alkaline liquids	BS EN 14415-B	-	Pass/Fail	Pass
Resistance to leaching - organic alcohols	BS EN 14415-C	-	Pass/Fail	Pass
Resistance to leaching - visual defects	BS EN 14415-A	-	Yes/No	No

Health and safety information

Refer to the Visqueen High Performance Urban Drainage Geomembrane safety datasheet (SDS).

About Visqueen

Visqueen is a leading provider of construction membrane technologies and design-based solutions for ground gas, structural waterproofing, damp proofing and fire protection.

We offer complete support at every stage of the specification, including the supply chain process. As the UK's principal technical authority, we are best placed to ensure that the principal designer and contractor specify the most technically suited, durable, and competitive solution to guarantee their project is protected for the lifetime of the building.

Visqueen is at the forefront of advanced membrane technology and innovation in the construction industry, earning the trust and loyalty of specifiers throughout the UK and Europe.

For more information, visit visqueen.com or contact our sales office at +44 (0) 333 202 6800 or enquiries@visqueen.com

Heanor Gate Road, Heanor, Derbyshire, DE75 7RG
+44 (0) 333 202 6800 I enquiries@visqueen.com I www.visqueen.com

Visqueen High Performance Urban Drainage Geomembrane

Complete Range, Complete Solution



Passive Fire Protection | Gas Protection | Damp Proof Membrane | Air and Vapor Control | Stormwater | Damp Proof Course | Temporary Protection

Visqueen Technical Support

Visqueen offer a comprehensive full nationwide technical support. Our team of CSSW qualified technical support managers provide on site design-based solutions for specifiers, contractors and builders merchants, and will ensure that from design stage to installation the project is fully risk assessed and the specification is approved by all stakeholders.

Our Technical Office, can design, prepare and manage CAD detailing, together with assisting in quantity take offs, while offering advice on technical installations and product selection.

Competency & Design

Visqueen promotes competency in building design by ensuring that its technical team possesses the necessary skills, knowledge, experience, and ethical practices. The company adopts the "golden thread of information," ensuring all project data is digitally secure and accessible throughout a building's lifecycle. This approach aligns with the Building Safety Act and aims to foster accountability and compliance with evolving regulations, providing clients with confidence in the safety and reliability of their projects.

Visqueen CPD Seminars

Visqueen's CPD Seminars offer insights into Building Regulations, Standards, and industry guidance related to damp proofing, hazardous ground gas protection, and structural waterproofing. These one-hour seminars are tailored for construction design professionals and delivered by our Technical Support Managers. Visit our website to book a free CPD.

Visqueen Contract Design Services

Visqueen Contract Design Services offers a bespoke design service led by our team of Certified Surveyors in Structural Waterproofing (CSSW), providing experienced and specialised waterproofing design expertise for complex projects. We provide comprehensive support throughout the entire project, ensuring that all work meets the requirements of warranty providers and adheres to the highest standards of quality, reliability and current legislation.

Visqueen Training Academy

Based at our Derbyshire facility, the Visqueen Training Academy offers a variety of training programs across the UK. These include one-day product awareness sessions for distributors and builders' merchants, and intensive two-day courses for hands-on product installation training. Contact us for more information.

Heanor Gate Road, Heanor, Derbyshire, DE75 7RG
+44 (0) 333 202 6800 I enquiries@visqueen.com I www.visqueen.com