Technical Datasheet

Visqueen Ultimate HC BLOK

Features & benefits

- Agrement certified - third party accreditation
- Complies with NHBC Foundation's NF94 guidance for use in Type A and Type B membrane locations
- Complies with CIRIA C748:2014 - industry standard for volatile organic compounds (VOC) protection
- Complies with the methane gas transmission rate, mass per unit area and thickness requirements of BS 8485:2015 + A1:2019 - industry standard for methane and carbon dioxide protection
- Also provides radon and damp proof membrane protection
- Dual jointing methods - depending upon specification, lap joints can be taped or heat welded

Product description

Visqueen Ultimate HC Blok is a 0.5mm thick, chemically resistant co-extruded volatile organic compound barrier and gas barrier. It is coloured gold on the upper surface and white on the reverse. The product is supplied in single wound rolls (not folded), 2.44m x 41m.

Approvals and standards

- Third party accreditation (BDA certificate BAF-18-051-P-A-UK)
- Complies with NHBC Foundation's NF94 guidance for use in Type A and Type B membrane locations
- Complies with CIRIA C748:2014
- Complies with the methane gas transmission rate, mass per unit area and thickness requirements of BS 8485:2015 + A1:2019
- Suitable for all Characteristic Gas Situation (CS) ground gas regimes
- Conforms to the specification requirements of NHBC Amber 1 and Amber 2 applications
- Conforms to the specification requirements of BR 211:2023
- UKCA UKNI CE to EN 13967:2012
- 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 Ultimate HC Blok is suitable for use in all types of buildings to prevent the ingress of harmful levels of volatile organic compounds (VOCs), methane, carbon dioxide and radon. The barrier can be positioned above or below a concrete ground floor slab or above a precast suspended segmental ground floor system, e.g. beam and block floor.

The barrier also acts as a damp proof membrane.

Radon, carbon dioxide, methane, and VOC protection – NHBC NF94 guidance:
Visqueen Ultimate HC Blok when installed with either taped or welded joints (welded only for VOC protection) complies with NHBC Foundation's NF94 publication, Hazardous ground gas - an essential guide for housebuilders, in Type A membrane locations in precast suspended segmental subfloors and reinforced cast in situ concrete floor slabs (ground bearing, suspended or raft). Visqueen Ultimate HC Blok also complies with this guidance when installed with welded joints in Type B membrane locations in reinforced cast in situ concrete floor slabs (ground bearing, suspended or raft). For site or zone characteristic gas situations of CS4 and above, contact Visqueen Technical Services.

The product is not intended for use where there is a risk of hydrostatic pressure.

System components

- VisqueenPro Detailing Strip, 300mm x 10m, 500mm x 10m
- Visqueen Ultimate Top Hat Units
- Visqueen GR Lap Tape, 150mm x 10m
- Visqueen 100mm Double Sided Butyl Tape, 100mm x 15m
- Visqueen NF-Detailing Strip, 300mm x 10, 500mm x 10m

Storage and handling

Visqueen Ultimate HC Blok 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 Ultimate HC Blok should be installed on a smooth continuous surface 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.

Different jointing options are available depending on product use. Where protection against VOCs or hydrocarbon contamination is required, the barrier system should be applied with welded joints.

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Visqueen Ultimate HC BLOK

Installation

Visqueen Ultimate HC Blok should be loose laid on the substrate with the gold side up so as to avoid sunlight glare. Different jointing options are available depending on product use. Where protection against VOCs or hydrocarbon contamination is required, the barrier system should be applied with welded joints.

The barrier should be clean and dry at the time of jointing. It should be overlapped by at least 150mm, bonded with Visqueen 100mm Double Sided Butyl Tape and sealed with Visqueen 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 Ultimate Preformed Top Hat Units should be used for sealing service entry pipes. The base of the top hat and the upstand should be bonded using Visqueen 100mm Double Sided Butyl Tape and sealed with Visqueen GR 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 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 Ultimate Preformed Units are used e.g. corners. Alternatively VisqueenPro Detailing Strip or Visqueen NF-Detailing Strip can be used to seal awkward junctions.

If the barrier is punctured or perforated a patch of the same material should be lapped at least 150mm beyond the limits of the puncture and bonded with Visqueen 100mm Double Sided Butyl Tape and sealed with Visqueen GR Lap Tape. Alternatively a patch can be formed using VisqueenPro Detailing Strip or Visqueen NF-Detailing Strip 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 barrier the wire reinforcements and spacers must be prevented from puncturing the barrier. Where there is a high risk of potential damage, the barrier 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 Ultimate HC Blok and all associated system components should not be installed below 5°C.

Additional information

When used in accordance with CIRIA C748:2014 or BS8485:2015 + A1:2019, a subfloor ventilation system or pressure relief maybe required.
To assist build sequencing, Visqueen Ultimate Gas DPC is available for gas protection through the wall constructions.

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.

Property	Test method	Units	Criteria	Result
Colour				Gold/white
Weight		kg		49
Length	BS EN 1848-2	m	-0/+10%	41
Width	BS EN 1848-2	m	-0/+10%	2.44
Thickness	BS EN 1849-2	mm	+/-10%	0.5
BS 8485 and C748 physical test results		Units	Criteria	Result
Puncture	BS EN ISO 12236:2006	N	MDV	1640
Impact resistance Method A hard surface	BS EN 12691	mm	MDV	200
Impact resistance Method B soft surface	BS EN 12691	mm	MDV	1250
Tensiles yield strength MD 1	ASTM D4885-01	kN/m	MDV	5.1

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Visqueen Ultimate HC BLOK

Tensiles yield strength CD 1	ASTM D4885-01	kN/m	MDV	4.91
Yield elongation MD 1	ASTM D4885-01	%	MDV	76
Yield elongation CD 1	ASTM D4885-01	%	MDV	62
Tear resistance - trouser method A - MD	BS ISO 34-1	kN/m	MDV	60.2
Tear resistance - trouser method A - CD	BS ISO 34-1	kN/m	MDV	66.1
Tear resistance - angle method B - MD	BS ISO 34-1	N	MDV	48.7
Tear resistance - angle method B - CD	BS ISO 34-1	N	MDV	49.6
1 - this is at yield and not break as the equipment used was not strong enough to break the membrane				
BS 8485 - Methane testing	Test method	Units	Criteria	Result
Methane gas transmission rate (unjointed)	ISO 15105-1	ml/m²/day/ atm	<40	1.3
Methane gas transmission rate (welded joint)	ISO 15105-1	ml/m²/day/ atm	<40	24
Carbon dioxide gas transmission rate	ISO 15105-1	ml/m²/day/ atm	<40	8.3
C748:2014 - Permeation vapour tests - 100% concentration		Criteria	ml/m²/d	mg/m²/d
Benzene	ISO 15105-2	MDV	0.08	70
Toluene	ISO 15105-2	MDV	0.09	78.5
Ethyl benzene	ISO 15105-2	MDV	0.11	93.8
m,p xylene	ISO 15105-2	MDV	0.01	6.7
Hexane	ISO 15105-2	MDV	gas	2.6
Vinyl chloride	ISO 15105-2	MDV	0	6.4
Tetrachloroethene (PCE)	ISO 15105-2	MDV	0	3.2
Trichloroethene (TCE)	ISO 15105-2	MDV	solid	0.3
Naphthalene	ISO 15105-2	MDV	0.03	19.7
C748:2014 - Chemical immersion testing		weight %	Thickness %	Tensiles/ elongation
Pass is achieved if the aged membrane is within 25% of the fresh sample				
Benzene	BS EN 14414	Pass	Pass	Pass
Toluene	BS EN 14414	Pass	Pass	Pass
Ethyl benzene	BS EN 14414	Pass	Pass	Pass
(m,p, and o) xylene	BS EN 14414	Pass	Pass	Pass
Hexane	BS EN 14414	Pass	Pass	Pass
Vinyl chloride	BS EN 14414	Pass	Pass	Pass
Tetrachlororthene	BS EN 14414	Pass	Pass	Pass
Trichloroethene	BS EN 14414	Pass	Pass	Pass
Naphthalene	BS EN 14414	Pass	Pass	Pass
CE Marking to EN13967 Type A				

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Characteristic	Test method	Units	Criteria	Result
Tensile strength - MD	BS EN 12311	N/mm²	MDV	32.8
Tensile strength - CD	BS EN 12311	N/mm²	MDV	33.1
Tensile elongation - MD	BS EN 12311	%	MDV	699
Tensile elongation - CD	BS EN 12311	%	MDV	723
Joint strength	BS EN 12317-2	N	MDV	265
Watertightness to 2kPa for 24 hours	BS EN 1928	-	Pass/Fail	Pass
Resistance to impact	BS EN 12691	mm	>MLV	200
Durability watertightness after heat ageing	BS EN 1296	-	Pass/Fail	Pass
Durability watertightness against chemicals	BS EN 1847	-	Pass/Fail	Pass
Resistance to tearing (nail shank) CD	BS EN 12310-1	N	MDV	245
Resistance to tearing (nail shank) MD	BS EN 12310-1	N	MDV	270
Water vapour transmission - resistance	BS EN 1931	MNs/g	MDV	1034
Water vapour transmission - permeability	BS EN 1931	g/m²/d	MDV	0.13
Radon permeability	Sp Method 3873	m²/s	MDV	<1.5 x 10^{-12}

Health and safety information

Refer to the Visqueen Ultimate HC Blok 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

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

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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.

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