

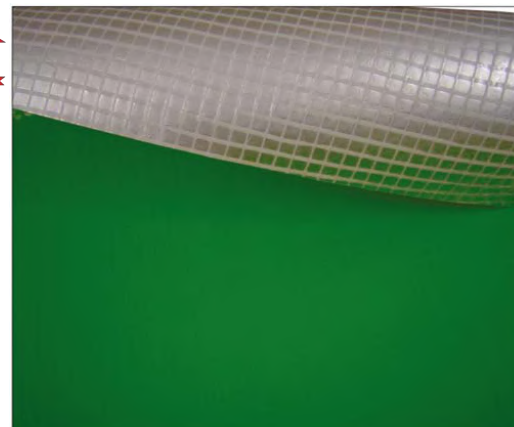
SOLSHIELD Ultra Gas Barrier



Solshield Ultra Gas Barrier is a flexible, loose laid proprietary gas barrier for use on sites with Radon (RN), Carbon Dioxide (Co²), Methane (CH⁴) and Hydrocarbon Vapours.



- **Complies with latest codes of practice as published by BRE, CIRIA & BSI (BS8485:2015).**
- **BBA Cert 16/5382, NHBC Compliant & CE Marked**
- **Suitable to protect against the ingress of Radon (RN), Carbon Dioxide (Co²), Methane (CH⁴) and Hydrocarbon/VOC Vapours.**
- **A multi-layer reinforced polyethylene membrane with integral aluminium foil.**
- **Suitable for use as gas protection for NHBC Green, Amber 1, and Amber 2 site situations.**
- **High resistance to puncture.**
- **Also acts as a damp proof membrane.**



SOLSHIELD - Gas Protection Systems

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Rev F

Product Description

Solshield Ultra Gas Barrier is a multi layer low density polyethylene gas barrier and damp-proof membrane reinforced with a polypropylene grid with an integral aluminium foil, for use in concrete ground floors, above and below slab not subject to hydrostatic pressure, to protect the building against moisture, radon, methane & carbon dioxide from the ground.

Resistance to Hydrocarbon Vapours - when the membrane is separated from the ground, e.g. above a block and beam floor.

Resistance to water & water vapour - the membrane provides an effective barrier to the passage of water & water vapours from the ground.

Resistance to puncture - the membrane has a strong resistance to puncture and on smooth surfaces will not be damaged by foot / site traffic.

Durability - the membrane remains effective against the ingress of water and water vapour, will restrict the ingress of radon, methane and carbon dioxide during the lifetime of the flooring construction in which it is installed.

Compliance

• NHBC Standards 2019, Chapters 4.1/5.1. • CE Marking Standard EN13967:2012. • BS8485:2015. • CP 102:1973, section 2. • BS8000-4:1989.

General

Solshield Ultra Gas Membrane should not be installed at temperatures below 5°C, to prevent the risk of surface condensation.

The membrane must be installed and fixed in accordance with BRE Report BR 211:2015, and guidance given in BS 8485:2015.

The membrane should be installed on a sand blinding layer, Solshield P30 protection fleece, or a smooth concrete float finish. In order to provide a continuous barrier across the cavity, Solshield Ultra Gas Barrier should be taken through the blockwork and incorporated below the damp proof course cavity tray in the outer leaf.

Solshield Ultra Gas Membrane is suitable for installation with beam and block floor application with 150mm clear void in an Amber 2 category project with hydrocarbons, reinforced raft foundation and in situ suspended slab providing the membrane is laid above the ground and not in direct contact with the source of hydrocarbon/VOC vapour.

Long periods of exposure to ultraviolet light will reduce the effectiveness of the membrane.

Storage & Handling on Site

Solshield Ultra Gas Barrier is classified as non-hazardous (code of practice CP102 1973).

The product is chemically inert and any acids or alkalis present in the subsoil will not affect the membrane.

It is not recommended for use when exposed to sunlight and general outdoor weather conditions for long periods of time. Weathering will not occur when installed.

Rolls should be stored undercover and protected from sunlight, on a flat surface.

Quality control during the laying of the membrane is extremely important the membrane should be protected either through the use of temporary protection over its whole area or the immediate laying of the concrete slab.

Technical Data & Test Results

Characteristic			Size
Thickness	EN 1849 - 2	mm	0.6
Width	EN 1849 - 2	M	2
Length	EN 1849 - 2	M	50
Weight	EN 1849 - 2	g/m ²	370
Hydraulic Properties			
Water Column Test	EN 20811		>300
Resistance to Water Penetration	EN 13967, EN 1928		Pass
Durability of watertightness against ageing	EN 1296, EN 13967, EN 1928		Pass
Mechanical Properties			
Resistance to Static Loading	EN 12730 - B	Kg	20
Tensile Strength MD	EN 12311 - 1	N/50mm	600
Tensile Strength CMD	EN 12311 - 1	N/50mm	480
Tensile Elongation MD	EN 12311 - 1	%	20
Tensile Elongation CMD	EN 12311 - 1	%	20
Puncture Resistance	EN 12236	kN	1.25
Resistance to tearing (nail shank) MD	EN 12310 - 1	N	330
Resistance to tearing (nail shank) CMD	EN 12310 - 1	N	400
Durability & Chemical Resistance			
Transmission rate of volatile liquids - Diesel	ISO 6179:2010 (B)	g/m ² /h	0.246
Transmission rate of volatile liquids - Xylene	ISO 6179:2010 (B)	g/m ² /h	0.571
Transmission rate of volatile liquids - Toluene	ISO 6179:2010 (B)	g/m ² /h	0.583
Transmission rate of volatile liquids - Petrol	ISO 6179:2010 (B)	g/m ² /h	0.135
Gas Permeability			
Methane Permeability	BS EN ISO 15105 - 1	ml/m ² /day/atm	<0.09
Carbon Dioxide Permeability	BS EN ISO 15105 - 1	ml/m ² /day/atm	<0.09
Radon Permeability	K124/02/95	m ² /s	8 x 10 ⁻¹⁵

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Installation

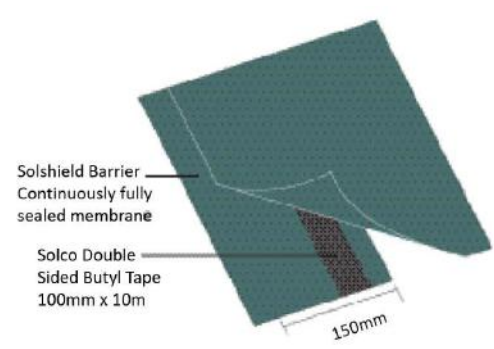
1. The membrane must only be applied to surfaces that have a smooth finish - free from voids, projections and mortar deposits. Surfaces should be dry and free from dust and frost. In order to provide a continuous barrier across the cavity, Solshield Ultra Gas Barrier should be taken through the blockwork and incorporated below the damp proof course cavity tray in the outer leaf.
2. Concrete surfaces should be dense. Vertical surfaces of brickwork and blockwork must be dry and rendered to provide an even surface. Brickwork or blockwork not rendered must be flush pointed to give a smooth surface without sudden changes in level.
3. The membrane is rolled out with the printed side uppermost, ensuring that it is properly aligned. All overlaps should be a minimum of 150 mm.
4. When the membrane is laid below the concrete slab, it should be loose-laid to accommodate any small movements.
5. All surfaces must be dried thoroughly prior to joining. Roll edges can be welded or taped.
6. Service ducts should be vented to prevent the possibility of gas accumulating in confined spaces.
7. The continuity of the gas protection must extend over the footprint of the building, and the membrane must be sealed to a gas-resistant damp-proof course where required.
8. The membrane should be covered by a screed or other protective layer, such as Solco Protection Fleece, as soon as possible after installation. Care must be taken to avoid damage to the membrane during construction if blockwork protection is used.
9. The membrane installation should be subject to third-party independent validation, in accordance with BS 8485 : 2015.

Jointing Detail

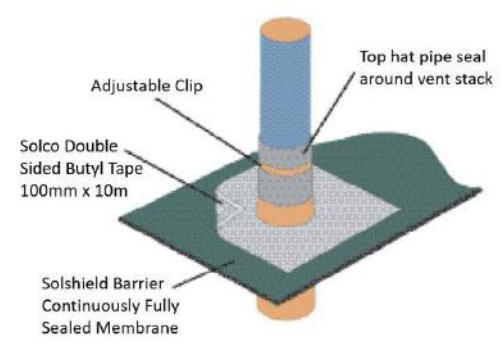
We recommend that particularly in situations where site investigation demonstrates chemicals or harmful gases are present in significant concentrations, all of our gas barriers are to be heat welded or tape jointed - ensuring the integrity of the membrane at the joint location. Seam welding provides maximum performance integrity and enables installers to complete installations quickly and efficiently.

Apply Solco Double Sided Butyl Tape 50mm from the membrane edge, leaving the backing paper on. Lay the next width of membrane overlapping the first by 150mm. Remove the backing paper from the double sided butyl tape and join the top sheet to the bottom sheet, by applying pressure with a hand roller. Where the membranes overlap apply the Solco single sided foil tape, equidistant on both membranes (see detail). All service entry points must have airtight seals. Top hats and corner pre-forms must be sealed using double sided butyl tape.

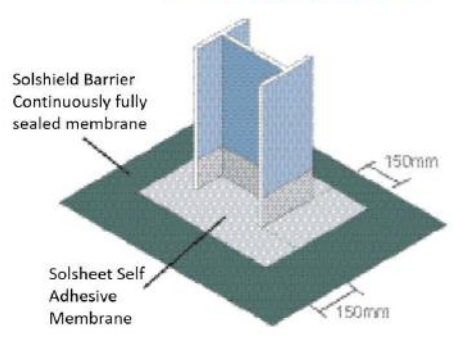
Typical Jointing Details for Solshield Ultra Gas Barrier



Typical Lap Detail



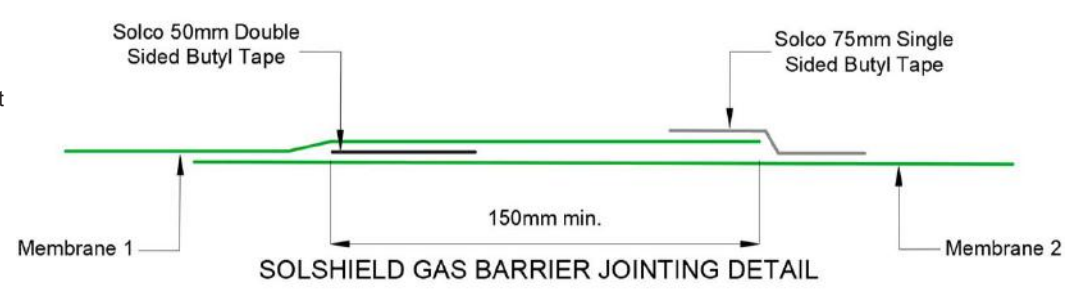
Typical Penetration Detail



Typical Column Detail

Note:

All service entry points must have airtight seals. Top hats and corner pre-forms must be sealed using double sided butyl tape.



Venting

Solshield Ultra Gas Barrier can be used on sites where passive or active ventilation is required. Solshield Geocomposite Drainage & Venting Mat should be used in conjunction with the relative vent connectors where required. These types of systems are designed on a bespoke site specific nature, please contact us for our design advice.

Gas System Accessories



Product	Description	Sizes	Application	Supply
Solco Foil Backed Jointing Tape	Single sided tape for securing laps and joints	75mm x 50m	Securing laps and joints	Rolls
Solco Double Sided Butyl Jointing Tape	Butyl Adhesive Tape	50mm x 10m 100mm x 10m	Butyl based double sided tape for joints and laps	Rolls
Solco Top Hat Units	Polymeric	Various	For sealing around penetrations through gas membrane	Each
Solcourse Hydrocarbon DPC	A flexible Tri-polymer DPC	300mm - 1000mm	To prevent the transmission of Radon, CO ₂ , Methane Gas and Hydrocarbons	20m Rolls
Solco Gas Sump Units	Part of the Radon Protection System	430 x 430 x 220mm	Radon Sumps are used in full protection areas, where sub floor depressurisation may be required	Each
Solco XL Jointing Tape	Reinforcing Tape	100, 150 & 300mm wide	Overband tape self-adhesive	100mm x 20m 150mm x 15m 300mm x 20m
Solseal HP Primer	Primer for SA Membrane	10L	Surface Primer	Drums
Solco Protection Boards	Bitumen / Polymeric	3mm thick	For heavy duty use	2m x 1m
Solco Corrugated Board	Plastic Corrugated	2mm thick	For light duty use	2.4m x 1.2m
Solco P30 Fleece	Geotextile Protection	2m x 50m	For foot traffic	Roll