

## Solshield Ultra Gas Barrier

### Description:

Solshield Ultra Gas Barrier is a multi-layer low density polyethylene (LDPE) gas barrier and damp-proof membrane reinforced with a polypropylene grid with an integral aluminium foil. The membrane is designed for use in concrete ground floors, above and below slab not subject to hydrostatic pressure.

Solshield Ultra protects buildings against Moisture, Radon, Carbon Dioxide, Methane, and Hydrocarbon/VOC Vapours from the ground.

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

**Resistance to Hydrocarbon Vapours** when the membrane is separated from the ground, for example above a block and beam.

**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

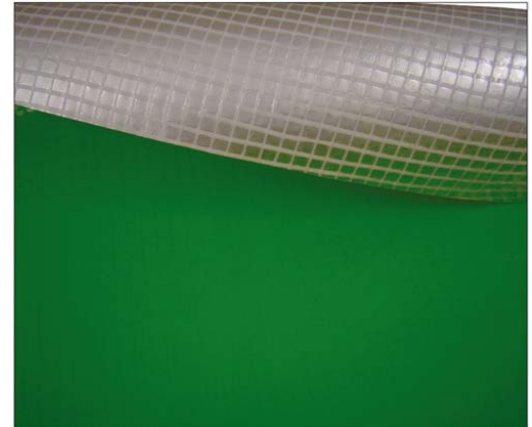
- NHBC Standards 2019, Chapters 4.1/5.1.
- CE Marking Standard EN13967:2012
- BS8485:2015+A1:2019.
- CP 102:1973, Section 2.
- BS8000-4:1989.

### 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 the relevant clauses in BRE Report BR 211:2015, and guidance given in BS 8485:2015+A1:2019.
- 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.

### Venting:

- Solshield Ultra can be used on site 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.



- Complies with latest codes of practice as published by BRE, BSI & CIRIA.
- BBA Cert 20/5737, NHBC Compliant & CE Marked.
- Suitable to protect against the ingress of Rn, CO<sub>2</sub>, CH<sub>4</sub>, and VOC Vapours.
- A multi-layer reinforced polyethylene membrane with integral aluminium foil.
- BS8485:2015+A1:2019 Accordant.
- 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.

Solco, Unit 51, Portmanmoor Road Industrial Estate, Ocean Park, Cardiff, CF24 5HB

## Technical Data:

Property	Test Method	Value
Thickness	EN 1849-2	0.60mm
Thickness - Between Scrim	BS EN ISO 9863-1:2016	0.40mm
Width	EN 1849-2	2.0m
Length	EN 1849-2	50m
Weight	EN 1849-2	370 g/m <sup>2</sup>
<b>Hydraulic Properties</b>		
Water Column Test	EN 20811	> 300
Resistance to Water Penetration	EN 13967 / EN 1928	130m
Watertightness	EN 1296 / EN 1367 / EN 1928	Pass
<b>Mechanical Properties</b>		
Resistance to Static Load	EN 12730-B	20 kg
Tensile Strength (MD)	EN 12311 - 1	600 N/50mm
Tensile Strength (CMD)	EN 12311 - 1	480 N/50mm
Tensile Elongation (MD)	EN 12310 - 1	20%
Tensile Elongation (CMD)	EN 12310 - 1	20%
Puncture Resistance	EN 12236	1.25 kN
Resistance to Tearing (Nail Shank) (MD)	EN 12310 - 1	330 N
Resistance to Tearing (Nail Shank) (CMD)	EN 12310 - 1	400 N
<b>Durability and Chemical Resistance</b>		
Transmission Rate of Volatile Liquids (Diesel)	ISO 6179:2010 (B)	0.246 g/m <sup>2</sup> /hr
Transmission Rate of Volatile Liquids (Xylene)	ISO 6179:2010 (B)	0.571 g/m <sup>2</sup> /hr
Transmission Rate of Volatile Liquids (Toluene)	ISO 6179:2010 (B)	0.583 g/m <sup>2</sup> /hr
Transmission Rate of Volatile Liquids (Petrol)	ISO 6179:2010 (B)	0.135 g/m <sup>2</sup> /hr
<b>Gas Permeability</b>		
Methane Permeability	BS EN ISO 15105-1	< 0.09 ml/m <sup>2</sup> /day/atm
Carbon Dioxide Permeability	BS EN ISO 15105-1	< 0.09 ml/m <sup>2</sup> /day/atm
Radon Permeability	K124/02/95	8.0x10 <sup>-15</sup> m <sup>2</sup> /s

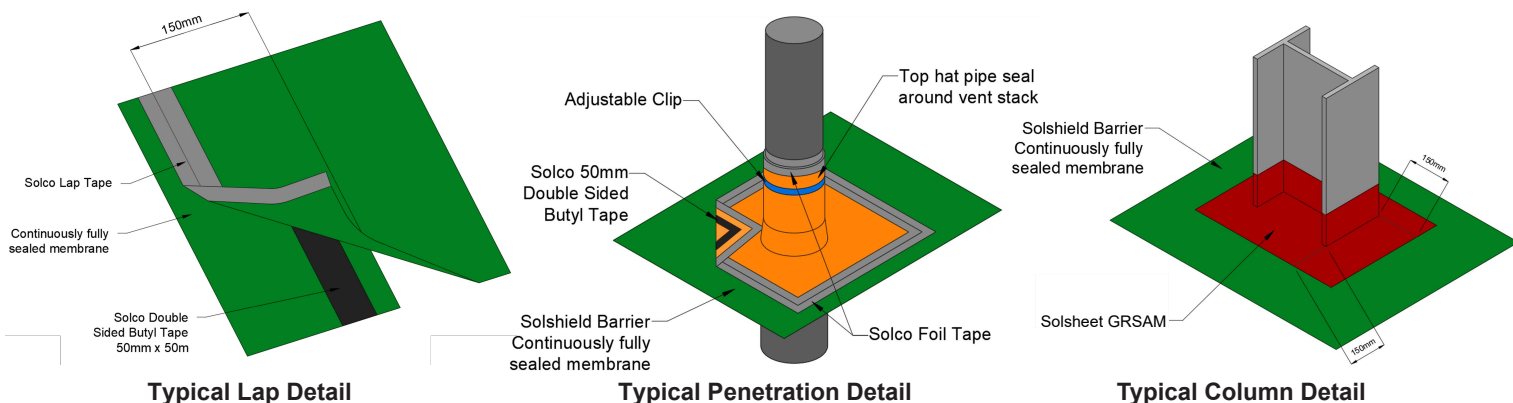
## Installation:

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 Reinforced 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. Solshield Reinforced is rolled out with the coloured side up, ensuring that it is properly aligned. All end and side overlaps should be a minimum of 150mm and prepared.
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. The continuity of the damp proofing must extend over the footprint of the building, and the membrane must be sealed to a damp-proof course where required.
7. The membrane should be covered by a screed or other protective layer, such as Solco Protection Fleece, as soon as possible after installation. If blockwork protection is used, care must be taken to avoid damage to the membrane during construction. Care should be taken when handling building materials over the exposed surface.

## Jointing Detail:

1. Apply Solco Double Sided Butyl Tape around 50mm from the membrane edge, leaving the backing paper on.
2. Lay the next membrane, overlapping the first by 150mm.
3. 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.
4. Where the membranes overlap, apply 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.

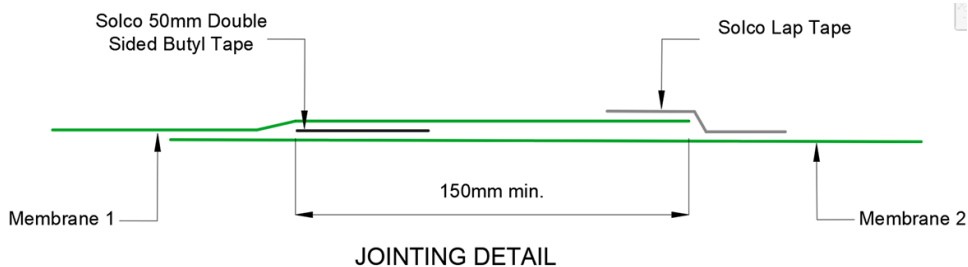
### Typical Jointing Details for Solshield Ultra



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**Note:**

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



## Solshield Ultra System Accessories

Solco Top Hats	Form an effective seal where a pipe, duct, or service penetrates Solsheet membranes.	Units
Solco Double Sided Butyl Tape	A double-sided synthetic butyl mastic tape, used for securing joints and laps in DPC's, Cavity trays & pre-formed Cloaks.	Rolls
Solco Foil Tape	A single-sided tape for securing laps & joints.	Rolls
Solco Venting Accessories	Allows the effective venting of gas from beneath a building.	Units
Solco Int / Ext Corners	Preformed units that ensure protection at corners.	Units
Solco GR DPC	A gas resistant tri-polymer damp proof course.	Rolls
Solco P30 Protection Fleece	Forms a protective layer to prevent damage to the membrane.	Rolls
Solsheet GR Self-Adhesive Membrane	A gas resistant self-adhesive membrane.	Rolls
Solseal HP Primer	Used to provide adhesion to bitumen enhanced geomembranes.	Tins
Solshield Venting Mat	Cuspated (HDPE) drainage mat for providing a drainage / venting channel.	Rolls
Solseal Liquid Gas Barrier	A gas resistant liquid applied membrane	Tins

## Storage and Handling on Site:

- Solshield Ultra is classified as non-hazardous (code of practice CP102 1973).
- Rolls should be stored on a flat surface, kept under cover, and protected from sunlight and mechanical damage. The product is chemically inert and any acids or alkalis present in the subsoil will not affect the membrane.
- Do not use when exposed to sunlight and general outdoor weather conditions for long periods of time.
- 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. Care should be taken when handling building materials over the exposed surface.

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