

## Solshield Flexible Hydrocarbon Barrier



### Description:

Solshield Flexible Hydrocarbon Gas Barrier is a specially engineered tri-polymer membrane that provides a highly effective barrier against Radon, Methane, Carbon Dioxide, and Hydrocarbon gases. The Membrane is produced from a uniquely formulated blend of polymers to produce outstanding chemical resistance, mechanical properties, dimensional stability, and thermal aging characteristics. The membrane is ideally suited for sites formerly used as coalfield, landfill, or industrial sites that previously contained volatile liquids such as petrol stations.

Solshield Flexible Hydrocarbon Gas Barrier is a very effective gas barrier for protecting buildings and occupiers from the ingress of gas and moisture. Building regulations require that proper precautions be taken to prevent danger to health and safety when building on gas contaminated land. Solshield Flexible Hydrocarbon Gas Barrier is an advanced high performance flexible membrane suitable for both damp proofing and tanking applications. The membrane has a textured face on one side designed to aid adhesion to cast concrete.

The membrane can be used in applications such as:

- Tanking below ground structures.
- Heavy duty reinforced concrete slabs.
- Permanent shutter work.
- Lift pits.
- Slab edges.

Solshield Flexible Hydrocarbon Gas Barrier is classified as non-hazardous (code of practice CP101 1973). The membrane is chemically inert and will not react with any acidic or alkaline environment it is laid in.

Solshield Flexible Hydrocarbon Barrier has been subjected to accelerated life immersion tests. These tests, EN 14414 & EN 14415, require the membrane to be subjected to a range of challenge chemicals at 50°C and are tested to establish the effect they have on the membrane.



- Complies with relevant codes of practice such as current BRE and CIRIA.
- Excellent resistance to chemical and hydrocarbon gases typically found in contaminated industrial sites.
- High-quality robust flexible Tri-Polymer Membrane.
- Suitable for hot welding.
- Very high puncture & tear resistance.
- Tested to ISO 15105-1.
- Complies to BS 8485:2015+A1:2019.

### Technical Data:

Property	Test Method	Value
<b>Gas Permeability</b>		
Radon Permeability		9.5 x 10 <sup>-12</sup> m <sup>2</sup> /s
Methane Permeability	ISO 15105-1	28 ml/m <sup>2</sup> /day/atm
Diesel Permeability	ISO 6179	0.004 g/m <sup>2</sup> h
Petrol Permeability	ISO 6179	5.172 g/m <sup>2</sup> h
Xylene Permeability	ISO 6179	4.845 g/m <sup>2</sup> h
Toluene Permeability	ISO 6179	6.695 g/m <sup>2</sup> h

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## Technical Data (Cont.):

Property	Test Method	Value
<b>Mechanical Properties</b>		
Thickness	EN 1849-2	1.00mm
Width	EN 1849-2	1.3m
Length	EN 1849-2	20m
Mass	EN 1849-2	921 g/m <sup>2</sup>
<b>Hydraulic Properties</b>		
Water Vapour Permeability	EN 19322	0.08 g/m <sup>2</sup> /day
Watertightness (2kPa)	EN 192828	Pass
<b>Mechanical Properties</b>		
Tensile Strength (MD)	EN 12311	24 N/mm <sup>2</sup>
Tensile Strength (CMD)	EN 12311	22 N/mm <sup>2</sup>
Tensile Elongation (MD)	EN 12310	398%
Tensile Elongation (CMD)	EN 12310	446%
Joint Strength	EN12317-22	520 N
Resistance to Tearing (MD)	EN 12310 - 1	700 N
Resistance to Tearing (CMD)	EN 12310 - 1	750 N
Resistance to Static Load	EN 12730	20 kg 66
Resistance to Impact	EN 12691	660mm
Resistance to Low Temperature	EN 495-5	Pass at -40°C
<b>Durability and Chemical Resistance</b>		
Durability (Heat Ageing)	EN 192626	Pass
Durability (Chemical Resistance)	EN 1847	Pass
Chemical Resistance (Acidic)	EN 14414-AA	Pass
Chemical Resistance (Basic)	EN 14414-B	Pass
Chemical Resistance (Solvents)	EN 14414-C	Pass
Resistance to Leeching (Hot Water)	EN 14415-AA	Pass
Resistance to Leeching (Aqueous Alkaline)	EN 14415-B	Pass
Resistance to Leeching (Organic Alcohol)	EN 14415-C	Pass
Reaction to Fire	EN 13501-1	Class F

## Installation:

Solshield Flexible Hydrocarbon Gas Barrier must be installed in accordance with the guidelines laid out in Building Research establishment BRE No.414 "Protective measures for housing on gas contaminated land", CIRIA C665 "Assessing risks posed by Hazardous ground gases to buildings", NHBC guidelines, and CIRIA C682 the VOC Handbook.

Solshield Flexible Hydrocarbon Gas Barrier can be used in most common floor constructions and is installed in a similar manner to DPMs but with greater attention to joint sealing and under wall sealing. Where there is a risk of hydrostatic pressure, the membrane can be used so long as the jointing is made using a hot weld process and not taped. The membrane should be laid on a smooth surface or sand blinding to prevent puncture.

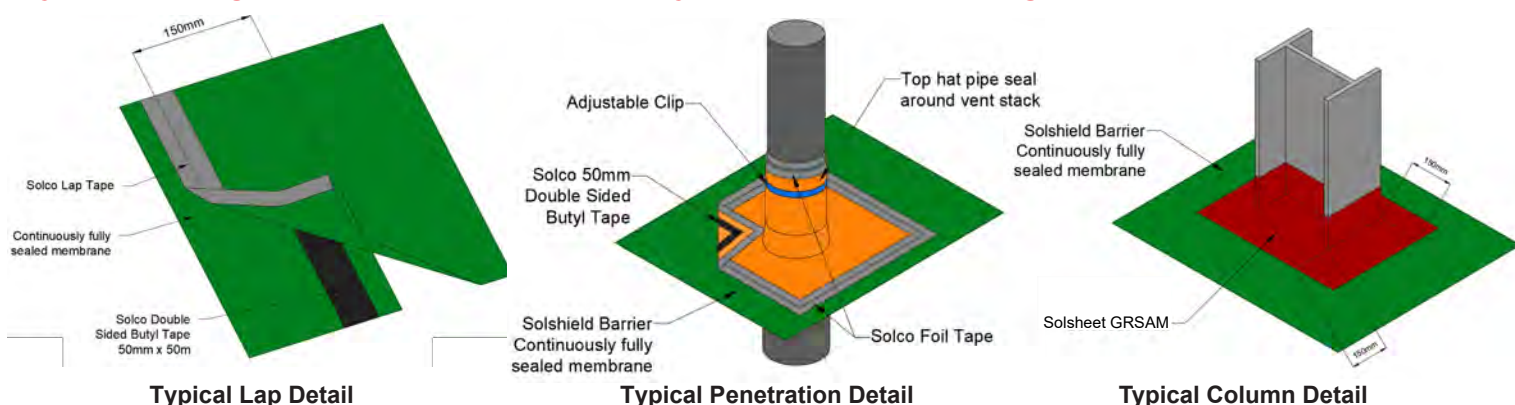
Solshield Flexible Hydrocarbon Gas Barrier has excellent welding properties, we would recommend that particularly in situations where site investigation demonstrates chemicals or harmful gases are present in significant concentrations all of our gas barriers are heat welded as opposed to being tape jointed, this ensures the integrity of the membrane at the joint location. Seam welding provides maximum performance integrity and enables installers to complete installations quickly and efficiently.

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 Using Tapes:

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 Flexible Hydrocarbon Barrier (Using Tapes)



**Note:**

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



## Solshield Hydrocarbon Barrier 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	Cusped (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.

## Venting:

- Solshield Flexible Hydrocarbon Barrier 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.

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