Our Ref: 22-288.01L

[redacted]

20th April 2023

[redacted]

Arc Environmental Ltd
Solum House
Unit 1 Elliott Court
St Johns Road
Meadowfield
Durham
DH7 8PN

RE: Verification of Hazardous Ground Gas Membrane at Former Highwayman Public House, Twizell Lane, Pelton

As requested by Mr Paul McVittie, a site visit was conducted by a suitably qualified and experienced geo-environmental engineer from Arc Environmental Ltd. in order to independently validate the implementation of a hazardous ground gas membrane within a proposed residential development on the site of the former Highwayman Public House, Twizell Lane, Pelton.

In order to ensure that the gas protective membrane was properly implemented validation works have been undertaken comprising the inspection of the construction and installation of the gas membrane, in general accordance with BS8485:2015 + A1:2019 - Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings, and CIRIA C735:2014 - 'Good Practise on the Testing and Verification of Protection Systems for Buildings Against Hazardous Ground Gas'.

The inspection details are summarised in Table 1 below and continue on the following page. A photographic record sheet for the inspection is also attached with this report.

Table 1

1. Development Summary		
1.1	Type of development and building/block inspected	Residential: A single detached dwelling house.
1.2	Foundation type	Strip footings with block and beam suspended floor.
1.3	Gas protection type	Passive vented sub–floor void and installation of hazardous ground gas barrier membrane.
2. Passive Venting		
2.1	Sub-floor void	It is believed a sub-floor void has been constructed below the block and beam floor and this was noted to be vented by way of telescopic swan neck vents. (see photographic record sheets).
2.2	External wall airbricks	c.210mm x c70mm airbricks with telescopic swan neck vents to sub-floor void at regular intervals / spacings.
3.Gas Barrier Membrane		
3.1	Condition of sub-grade and underside of gas membrane	No sub-grade present – block & beam and timber frame construction. Floor cleaned before laying gas barrier membrane and noted to be free of significant debris.

RE: Verification of Hazardous Ground Gas Membrane at Former Highwayman Public House, Twizell Lane, Pelton (Cont'd)

Table 1 (cont'd)

3.Gas Barrier Membrane (cont'd)		
3.2	Gas membrane type	Solshield Ultra Gas Barrier was laid across all the individual floor areas (green multi-layered reinforced LDPE and aluminium foil core layer membrane). The Solshield Ultra Gas Membrane was extended over the cavity walls and used as a gas resistant damp proof course. Corners and joints were formed using Solco Double-Sided Jointing Tape (black double-sided butyl gas and water resistant mastic tape) and by neatly folding and overlapping the gas barrier membrane which was then double sealed utilising Solsheet Gas Resistant Self Adhesive Membrane (GR -SAM). Installation carried out by main contractor.
3.3	Extent of coverage	The extent of the Solshield Ultra Gas Barrier Membrane coverage was confirmed over the cavity walls and lapped down across the whole of the floor area.
3.4	Slab / membrane condition	The condition of the Solshield Ultra Gas Barrier Membrane was confirmed as being generally good. Where small punctures or tears were evident, these were suitably repaired with Solsheet Gas Resistant Self-Adhesive Membrane (GR-SAM).
3.5	Joining details	The Solshield Ultra Gas Barrier Membrane sheets across the floor areas were jointed to each other utilising Double-Sided Jointing Tape and the overlaps sealed at surface with Solsheet GR SAM. All overlaps were equal to or greater than 150mm.
3.6	Damp proof membrane	Solshield Ultra Gas Barrier Membrane also used as continuous DPM (in accordance with manufacturers specifications). Confirm all laps and joints were sealed using double sided tape and Solsheet GR-SAM.
3.7	Service Entries and Seals	Solsheet GR-SAM was utilised to seal all service entry points in the floor slab.

Based on the inspection carried out by Arc Environmental Ltd., this validation letter confirms that the hazardous ground gas protective membrane has been satisfactorily installed and as such has PASSED inspection.

We trust the information we have provided to you is to your satisfaction. However, if you require any further information or clarification, please do not hesitate to contact us.

Yours sincerely

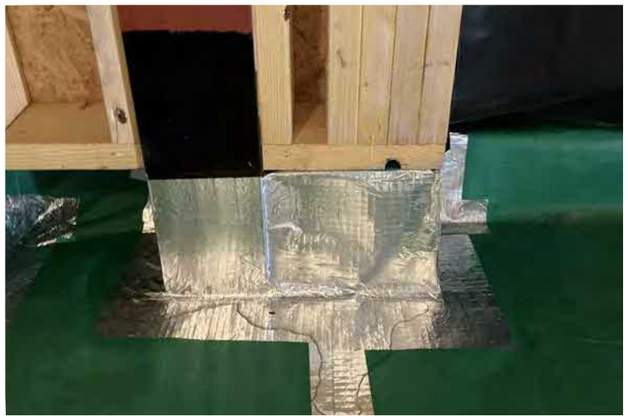
[redacted]

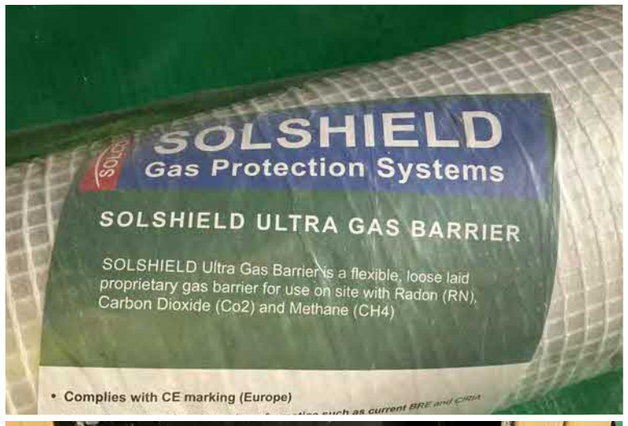
……

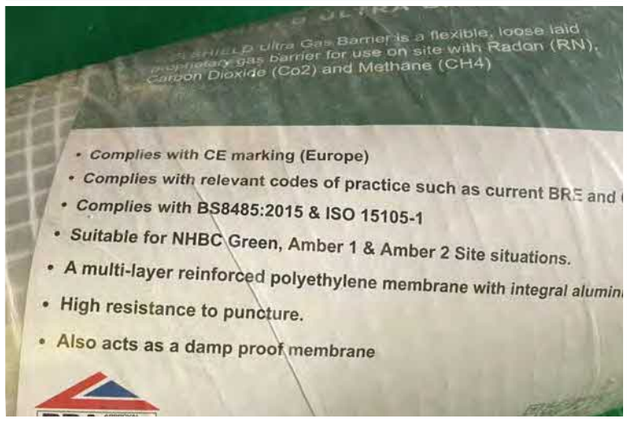
Geoff Heron
Senior Technician
For and on behalf of ARC Environmental Limited

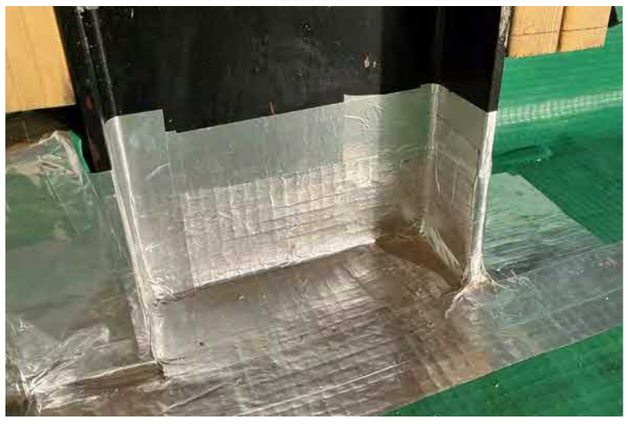
Photographic Record Sheet

T: 0191 378 6380
E: admin@arc-environmental.com
W: www.arc-environmental.com
Registered in England No. 05539784









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rev.	date	amendments	drawn	chckd

Client:
MR TREVOR DIXON

Project Title:
Proposed Residential Development

Land Adjacent to Canney Hill

Bishop Auckland, County Durham, DL14 8QA

Drawing Title:
Gas Membrane Validation

Photographic Record Sheet (1)

Scale at A3:	Date:	Drawn by:	Approved by:
N/A	20.04.23	P.D	G.H

Job Ref:	Drg no:	Rev:
22-288	–	–






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Photographic Record Sheet (2)

Scale at A3:	Date:	Drawn by:	Approved by:
N/A	20.04.23	P.D	G.H

Job Ref:	Drg no:	Rev:
22-288	–	–

Product Specification

T: 0191 378 6380
E: admin@arc-environmental.com
W: www.arc-environmental.com
Registered in England No. 05539784

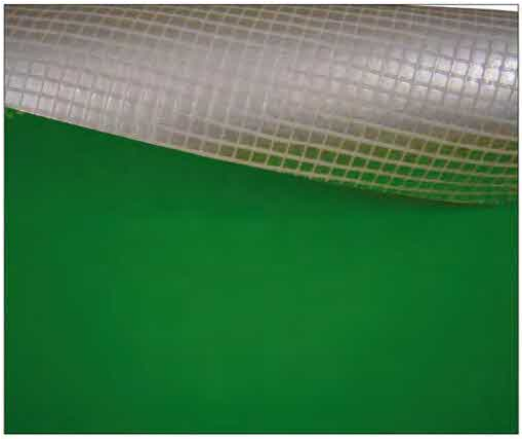
Datasheet

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 (Co^2), Methane (CH^4) and Hydrocarbon Vapours.

CE TYPE A EN 13967

- **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 (Co^2), Methane (CH^4) 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

Last Issue Date: 27.03.19
Rev E

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.

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.

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.

Technical Data & Test Results

Characteristic			Size
Thickness	EN 1849 - 2	mm	0.6
Width	EN 1849 - 2	M	Various
Length	EN 1849 - 2	M	Various
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 Permeabiltiy	BS EN ISO 15105 - 1	ml/m2/day/atm	<0.09
Radon Permeabiltiy	K124/02/95	m^2/s	8×10^{-15}

SOLSHIELD - Gas Protection Systems

Last Issue Date: 27.03.19
Rev E

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 100 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. Th
9. The membrane installation should be subject to third-party independent validation, in accordance with BS 8485 : 2015.

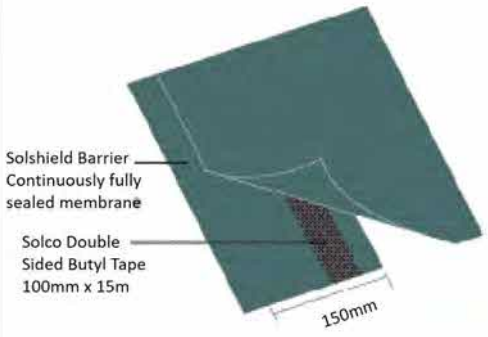
Jointing Detail

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.

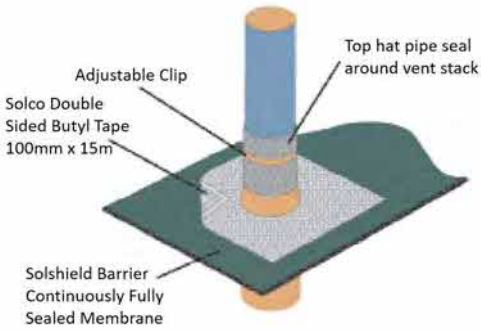
Apply Solco Double Sided Butyl Tape 50mm from the membrane edge, leaving the backing paper on. Lay the next width of membrane overlapping the first by 150mm. Remove the backing paper from the double sided butyl tape and join the top sheet to the bottom sheet, by applying pressure with a hand roller. 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.

Datasheet

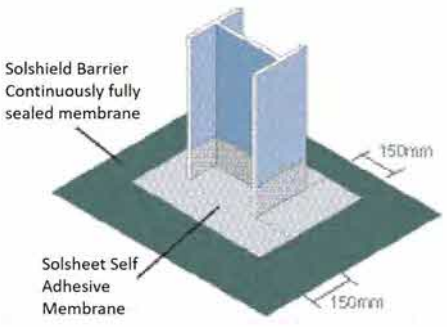
Typical Jointing Details for Solshield Ultra Gas Barrier



Typical Lap Detail



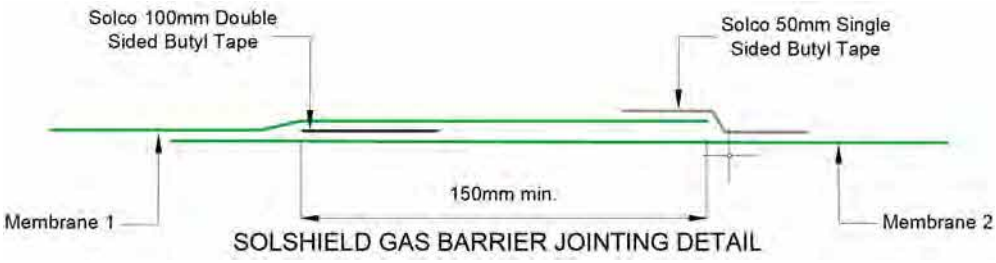
Typical Penetration Detail



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 specifi c nature, please contact us for our design advice.

Gas System Accessories

Product	Description	Sizes	Application	Supply
Solco Foil Backed Jointing Tape to BS EN ISO 15105 - 1	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 15m	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	20m Rolls
Solseal Bitumen Primer	Primer for SA Membrane	5L & 25L	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	2m x 1m
Solco P30 Fleece	Geotextile Protection	2 x 50mt	For foot traffic	Roll

Datasheet

SOLCO
Double Sided Butyl Tape

Solco Double Sided Butyl Tape is a preformed high performance polyisobutylene (PIB) based sealing tape with enhanced adhesive characteristics for more demanding applications where there are requirements for a high degree of bonding such as cavity trays and polythene membranes.

- Solventless formulation
- Ease of use & Instant seal
- Environmentally friendly
- Good adhesion on both faces to most building materials

Colour	Product Code	Roll Sizes
Black	SOLCDSBUTYL50	50mm x 10m
Black	SOLCDSBUTYL100	100mm x 10m

SOLCO - System Components

Issue Date 09.11.17

Product Description

Solco Double Sided Butyl Tape is a preformed high performance polyisobutylene (PIB) based sealing tape with enhanced adhesive characteristics for more demanding applications where there are requirements for a high degree of bonding such as cavity trays and polythene membranes.

Solco Double Sided Butyl Tape has an excellent adhesion to a wide range of substrates, with good UV resistance and remains flexible throughout its service life.

Typical Uses

§ Bonding and sealing waterproof & gas protection membranes at overlaps
§ Bonding membranes to DPCs
§ Bonding and sealing cavity Trays & Top Hats

Features & Benefits

§ Solventless formulation
§ Instant seal
§ Direct control over quantity of sealant used in the joint
§ Environmentally friendly
§ Ease of use
§ Good adhesion on both faces to most building materials
§ High pumping resistance

Installation

Solco Double Sided Butyl Tape should be applied to surfaces at a temperature range of between +5 and +40oC.

For best performance the surfaces should be clean, dry, and grease free.

Apply tape to the lap area of the laid sheet starting approx 50mm from the membrane edge. The product should be unwound and lightly pressed into position leaving the release paper in place. Overlap adjoining membrane by a minimum of 150mm.

On forming the joint the release paper is removed and the closing surface pushed firmly in place, pressure applied along the length of the joint and mechanically fixed if necessary

When the weather is cold, store tape in a warm, dry place until required. Installation is not recommended below 5°c.

Product Storage

Keep rolls stored in a cool dry place, the shelf life is 24months in ambient conditions.

Dimension Properties	
Roll Width	50 / 100mm
Roll Length	10m
Colour	Black
Technical Data	
Shelf Life	24 Months
Life Expectancy	>25 Years
U.V. Resistance	Excellent
Service Temperature	-40°c to +90°c
Joint Movement	up to 15%
Dynamic tensile tension: Separation rate 100mm/min @ 20°c	20 N/cm²
Dynamic Shear: Separation rate 200mm/min @ 20°c	22 N/cm²

Gas / Vapour Permeability			
Characteristic	**Test Method**	**Unit**	**Result**
Methane Permeability	BS ISO EN 15105-1	ml/m²/day/atm	1.97
CO2 Permeability	BS ISO EN 15105-1	ml/m²/day/atm	1.01
Radon Permeability	SP3873	M²/S	7.1 10_{7}
Water Vapour Permeability	BS 15106-3	g/m²/day	0.006

Solco Gas Resistant Foil Backed Joint Tape

Description:

Solco Gas resistant Foil Backed Jointing Tape is a very strong laminated single sided tape for securing laps & joints. It can be used f or bonding Solco Waterproofing and Gas Protection Membranes at erlaps and for bonding membranes to DPC's.

Technical Data:

Property	Value
Thickness	0.090 mm
Adhesion to Steel	16 N/mm
Tack Rolling Ball	50 cm
Tensile Strength	100 N/25mm
Elongation	20%
Service Temperature	-30°C to + 120°C
Application Temperature	5°C to +40°C
Methane Transmission Rate*	<0.20

*ISO 15105-1 AT 23°C, and 0% r.F. Ml m²

Complies with BS 8485:2015 + A1:2019.
Protects against CO_2 and CH_4.
Good Ageing Resistance.
Simple Application.
Low moisture transmission rate.
Excellent sealing performance.

Applications:

Tape for sealing waterproofing and gas protection membranes at overlaps and for bonding membranes to DPCs at junctions with internal and external walls.

Installation:

Ensure that surfaces are clean and dry.
Apply tape equidistant over the bonded membrane lap.
Apply pressure to the tape to ensure adhesion.
When the weather is cold, store tape in a warm, dry place until required. Installation is not recommended below 5°C.

Declaration of Conformity:

BS EN8485+A1:2019: Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings - ISO 15105.

REACH SVHC Status:

NO SHVC present according to candidates list of 20th June 2016.

Storage:

Recommended shelf life of 12 months from date of despatch at the moderate temperature and humidity environment.

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

SOLSHEET GR SAM

Gas Resistant Self Adhesive Membrane

SOLSHEET Gas Resistant Self Adhesive Membrane is a preformed waterproofing system with resistance to Methane, Radon and Carbon Dioxide.

- Excellent resistance to chlorides, sulphates, alkalis and acids.
- Can also be used as a gas resistant DPM, resistant to Radon, Methane and CO_2 gases
- Cross-laminated film – provides dimensional stability, high tear strength, puncture and impact resistance.
- Polymer modified bitumen coating - Resistant to UV
- Cold applied – no heating via flames or hot bitumen on site.
- Flexible – will accommodate minor settlement and shrinkage.
- Meets the requirements of BS 8485:2015 and EN ISO 15105-1
- Full design and on-site technical support.

CE TYPE A EN 13967

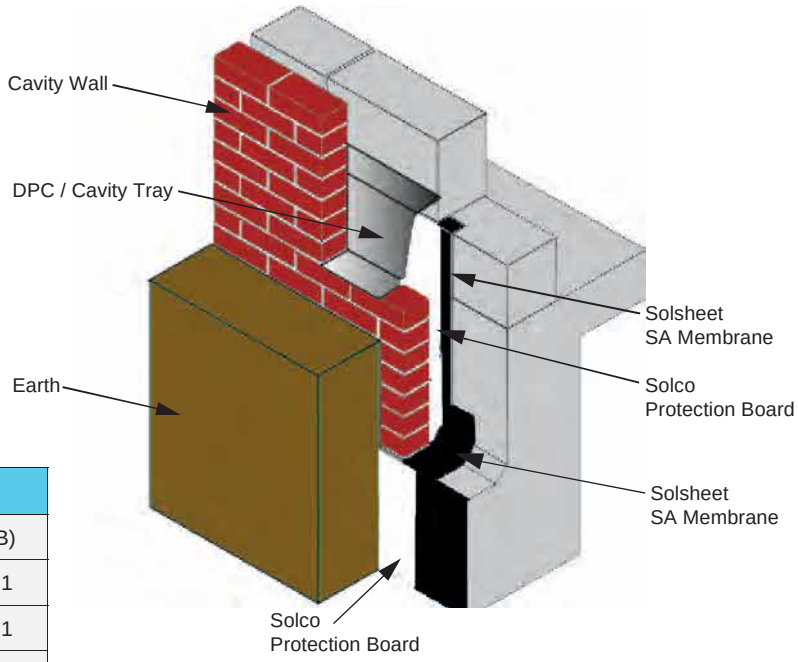
Product Details	
Thickness	1.5mm
Widths (m)	1.0m
Length (m)	20m
Roll Weight	25kg
Colour	Black
Coverage	18.9m² (inc. Standard Laps)

SOLSHEET - Waterproofing Systems

Last Issue Date: 22.03.15
Rev 2

SOLSHEET Gas Resistant Self Adhesive Membrane is a preformed waterproofing system with resistance to Methane, Radon and Carbon Dioxide . Resistance to gas is achieved with a high density polyethylene film (PE) reinforcement bonded to 50-micra aluminium foil, an easily removable silicone film on the underside and thermofusible film on the upper side.

SOLSHEET Gas Resistant Self Adhesive Membrane conforms to the requirements of BS 8102. Substrates should be primed with SOLSEAL Bitumen Primer prior to application. SOLSHEET Gas Resistant Self Adhesive Membrane can be used with Solcourse GR DPC and other Solshield Gas Membranes



Typical Detail
Please contact our Technical department for project specific application details

Technical Data	Value	Test Method
Watertightness	Pass	EN 1928:2000 (B)
Longitudinal tensile strength	320 N/5 cm	UNE-EN 12311-1
Transversal tensile strength	280 N/5 cm	UNE-EN 12311-1
Peeling Strength	4 N/mm	UNE-EN 12316
Elongation (L x T)	10 ± 5 %	UNE-EN 12311-1
Resistance to root penetration	Pass	prEN 13984
Resistance to static loading	5 Kg	UNE-EN 12730
Resistance to impact	NPD	EN 12691:2006
Longitudinal resistance to tearing (nail shank)	120 N	UNE-EN 12310-1
Transversal resistance to tearing (nail shank)	140 N	UNE-EN 12310-1
Flexibility at low temperature	< -15	UNE-EN 1109
Humidity resistance factor	115.000	EN 1931
Softening point	110ºC	UNE-EN 1427
Penetration at 25ºC	70 dmm	UNE-EN 1426

Technical Data	Value	Test Method
Water Vapour Transmission	<0.1 g/m2/ day	EN 1931
Methane Gas Permeability	<2.90 ml/m² /day	EN ISO 15105-1
Radon Gas Permeability	< 50 Bq/m3	(^{222}Rn) (CSI)
Heat resistance at elevated temperature	>90 ºC	UN-EN 1110
Dimensional stability at elevated temperature (longitudinal)	< 1.0 %	UNE-EN 1107-1
Dimensional stability at elevated temperature (transversal)	< 1.0 %	UNE-EN 1107-1

Datasheet

Self Adhesive Membrane Installation Guide

Surface Preparation: Applied To Concrete, Masonry, Steel & Timber

All surfaces should be smooth, clean and dry. Loosely adhering material and sharp protrusions should be removed by mechanical means. Concrete or renders should be allowed to dry before applying Solsheet membrane.

Priming:

All vertical surfaces should be primed using **Solseal Bitumen Primer**. Horizontal surfaces do not require priming where the membrane is covered with a screed, floor slab etc. Priming should be carried out as follows:

1. Roll can well before use.
2. Apply at the rate of approximately 6m^2/L. Only prime the area which is to be covered with Solsheet within the next 4 hours. Allow to dry for at least 1 hour until touch dry. Keep free from dust.
3. On very porous surfaces, use two coats of primer.

Application:

Waterproofing of Basements, Ground Floors, Reservoirs & Retaining Walls.
Internal angles must always be provided with an adequate fillet of concrete or **Soltex Woodfibre Fillet**, then after priming as previously described a 300mm wide reinforcing strip of Solsheet must be applied with 150mm on either side of the centre of the fillet.

External angles or corners must be provided with a 25mm x 25mm splay and this covered with a 300mm wide strip of **Solsheet XL**, applied equidistant from the centre of the splay.

Horizontal membrane:

This should preferably be laid prior to the application of the vertical membrane, adequately protected from damage by a minimum 25mm screed or protection board, with the membrane bonded to the vertical surface at least 200mm above the top of the screed so that the vertical Solsheet can be overlaid. If it is not possible to apply the screed over the DPM before the application of the vertical membrane, full and adequate protection must be given to the horizontal membrane to prevent damage.

Vertical membrane:

Cut off the appropriate length of membrane, then starting at the top of the area to be waterproofed, peel off at least 200mm of release sheet and bond the Solsheet firmly to the surface, tucking the end of the material into the appropriate DPC or chase. Gradually peel off the remainder of the release sheet downwards, at the same time rolling the material against the surface until the bottom of the wall is reached. At the base, the vertical membrane must overlap the horizontal membrane by at least 100mm. All subsequent sheets must overlap the preceding sheet by 50mm at the edges and by 100mm at ends. Overlaps must be thoroughly rolled to ensure adequate bonding.

Backfilling:

On vertical applications where an abrasive backfill is to be used the Solsheet membrane should be protected by a concrete outer skin, brick skin or Solsheet protection board, the latter being held in place by Solco 50mm Butyl tape.

Precautions:

Solsheet and Solsheet Primer must not be applied when the surface temperature of the substrate falls below 5°C. When a brick-skin is applied to the face of the vertical Solsheet, care must be taken not to damage the membrane and a gap of 40mm should be left which is filled with sand/cement mortar as work proceeds. Only sufficient Solsheet should be laid which can be protected as work proceeds. When areas of Solsheet are left exposed for any length of time ensure that all edges are held in place by battens.

Storage & Handling on site

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

Solsheet Waterproof System Ancilliaries

Solseal Bitumen Primer is a quick drying liquid applied, low viscosity bitumen solution used to prime and seal porous substrates and promotes the adhesion of bituminous waterproofing systems prior to application of Solsheet Membranes.

Technical Data	
Packaging	5, 25 & 205 Litres
Coverage	10m²/L

Solco HD Bitumen Protection Board is a tough, reinforced flexible bitumen modified board for the protection of adhesive waterproofing membrane and other types of waterproofing membranes against damage by abrasive backfill materials and poured concrete

Technical Data	
Sheet Size	1.0m x 2.0m
Thickness	3mm / 6mm
Weight	8kg / 16kg

Solco XL Jointing / Reinforcing Tape is a self adhesive bitumen tape is used as reinforcing / over-banding tape for securing waterproofing membranes at overlaps edge and corner details and is available as standard or as a Gas Resistant XL Tape.
Gas Protection Membranes require the Solco XL GR Tape.

Technical Data	
Roll Width(s)	100 / 150 / 300mm
Roll Length	20m
Thickness	1.5mm

Solco Butyl Tape is a black double sided synthetic rubber based high performance butyl mastic tape. It can be used for bonding waterproofing and gas protection membranes at overlaps and for bonding membranes to DPCs, and fixing of other accessories such as top hats

Technical Data	
Roll Width	50 / 100mm
Roll Length	10m

SOLSHEET - Waterproofing Systems

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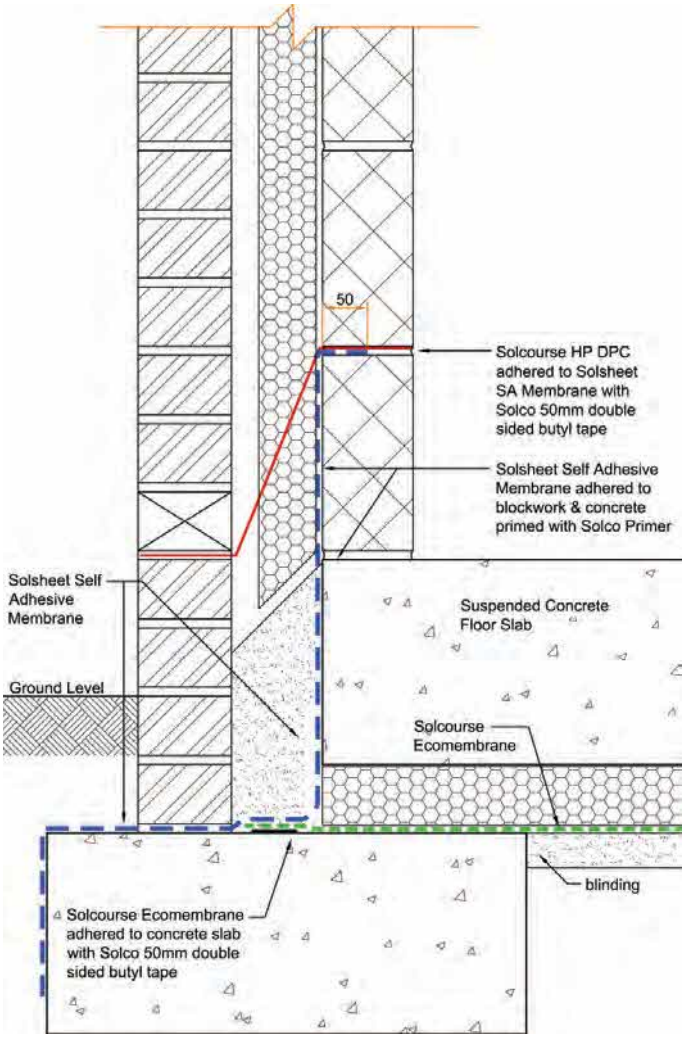
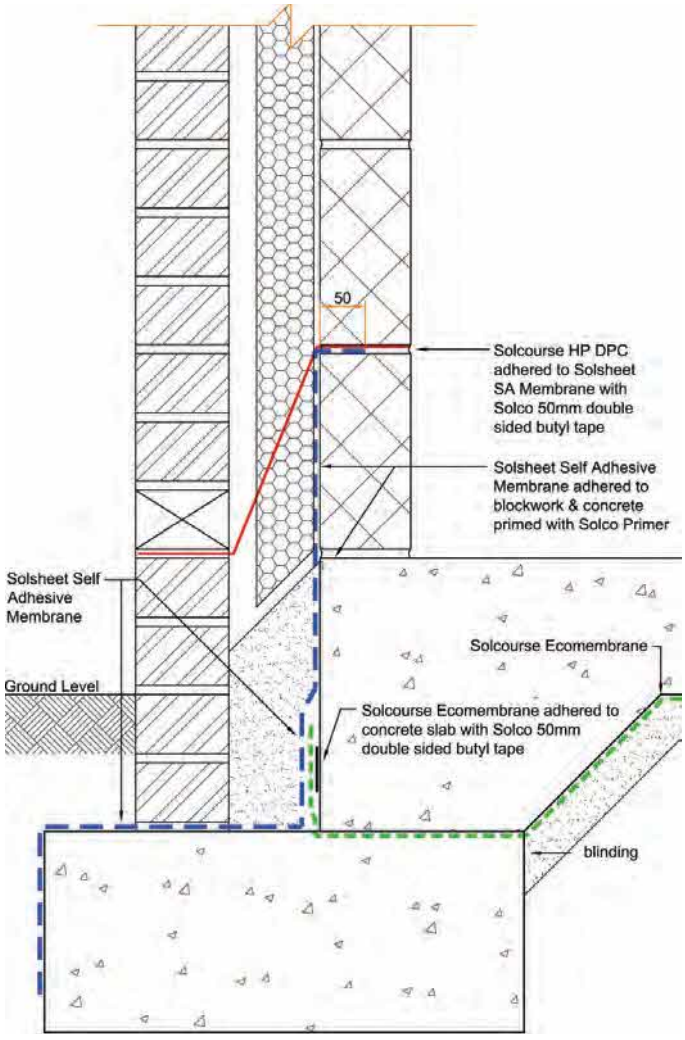


Typical Slab Edge Detail (Suspended)
Standard Construction



Typical Slab Edge Detail (Ground Bearing)
Standard Construction

Please contact our Technical department for project specific application details