

# SOLSHIELD Geomembrane Liner (HDPE)



Solshield Geomembrane Liner is made of high-density polyethylene (HDPE), suitable for use as a lining membrane in both horizontal & vertical applications.

- Complies with CE marking (Europe), GRI GM13 (Standards recognised by the EA for the UK)
- Complies with relevant codes of practice such as current BRE and CIRIA
- Low Permeability to latent Hydrocarbons & Methane / Radon & CO<sub>2</sub> vapours typically found in contaminated industrial sites.
- High quality robust single layer Membrane.
- High resistance to tearing & puncture.



## SOLSHIELD - Gas Protection System

Last Issue Date 16.11.17

### Product Description

Solshield Geomembrane Liner is made of high-density polyethylene (HDPE), suitable for use as a lining membrane in both horizontal & vertical applications. Solshield Geomembrane Liner is manufactured in two basic roll widths - 5.1m and 8.0m.

Available in thicknesses ranging from 0.75mm - 3.0mm.

The main purpose of the product is to serve as a barrier protecting various engineering structures against moisture, water, liquids, chemical substances, gases (radon, methane and carbon dioxide) & root damage and control the spread of invasive plants.

### Applications

- Reservoirs and embankments
- Japanese Knotweed Encapsulation (Cell Burial)
- Landfill capping & landfill cells
- Moisture & water insulation for mining, power & chemical industries
- Leachate lagoons
- Curtain walls
- Stormwater retention ponds
- Effluent treatment & industrial sludge basins
- Tunnels & underground structures
- Bund, tank & manhole linings
- Attenuation tank wrap
- Water reservoirs
- Lake, pond & canal linings
- Aquaculture applications
- Contaminated land remediation for residential & commercial construction

### Installation

We recommend Joint welding for certain applications however the membrane can be taped.

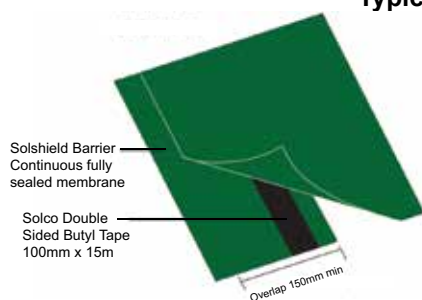
Ensure surfaces are clean and dry before applying tapes. Roll out Solco 100mm x 15mt Butyl tape 50mm in from the membrane edge. Overlap adjoining membrane a minimum of 150mm and seal edge with Solco 150mm x 20mt XL Reinforcement Tape .

In complex junctions, penetrations and terminations to existing structures you should also apply Solco 150mm x 20mt XL Reinforcement Tape ensuring a minimum of 150mm lap onto the membrane is achieved.

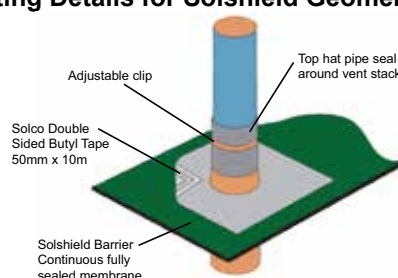
### Product Data

Standard Roll Dimensions	Thickness (mm)					
	Unit	1.0	1.5	2.0	2.5	3.0
Roll Length	m	200	150	120	100	85
Roll Width	m	5.1 / 8.0	5.1 / 8.0	5.1 / 8.0	5.1 / 8.0	5.1 / 8.0
Roll Area (5.1m roll)	m <sup>2</sup>	1020	765	612	510	434
Roll Area (8.0m roll)	m <sup>2</sup>	1600	1200	960	800	680

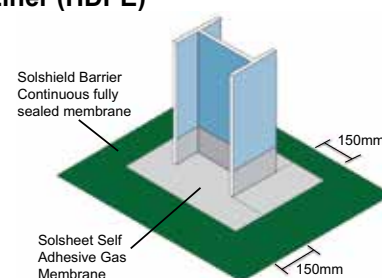
### Typical Jointing Details for Solshield Geomembrane Liner (HDPE)



Typical Lap Detail



Typical Penetration Detail



Typical Column Detail

### Technical Data

Properties	Test Method	Unit	Thickness (mm)					
			0.75	1.0	1.5	2.0	2.5	3.0
Surface			G/G (smooth/smooth)					
Thickness (min. ave.) • lowest individual of 10 values	ASTM D 5199	mm	0.75 - 10 %	1.0 - 10 %	1.5 - 10 %	2.0 - 10 %	2.5 - 10 %	3.0 - 10 %
Density (min.)	ASTM D 1505	g/cm3	0.940	0.940	0.940	0.940	0.940	0.940
Tensile Properties (min. ave.) • yield strength • break strength • yield elongation • break elongation	ASTM D 6693 typ IV	kN/m kN/m % %	12 24 12 750	17 30 12 750	25 45 12 750	33 58 12 750	42 75 12 750	48 85 12 750
Tear Resistance (min. ave.)	ASTM D 1004	N	100	130	190	280	340	380
Puncture Resistance (min. ave.)	ASTM D 4833	N	250	350	550	700	850	1000
Stress Crack Resistance	ASTM D 5397	hr.	500	500	500	500	500	500
Carbon Black Content	ASTM D 4218 ASTM D 6370	%	2 - 3	2 - 3	2 - 3	2 - 3	2 - 3	2 - 3
Carbon Black Dispersion	ASTM D 5596	Category	min. 9 in Categories 1 or 2 and max. 1 in Category 3					
Oxidative Induction Time (OIT) (min. ave.) • Standard OIT	ASTM D 3895	min.	100	100	100	100	100	100
Oven Aging at 85 °C • Standard OIT (min. ave.) % retained after 90 days	ASTM D 5721 ASTM D 3895	%	55	55	55	55	55	55

BS EN 13361: Characteristics required for use in the construction reservoirs & dams

BS EN 13362: Characteristics required for use in the construction of canals

BS EN 13492: Characteristics required for use in the construction of liquid waste disposal, sites or transfer stations.

BS EN 13493: Characteristics required for use in the construction of solid waste storage and disposal sites

BS EN 15382: Characteristics required for use in the construction of transportation infrastructure

### Storage & Handling on site

SOLSHIELD Geomembrane Liner (HDPE) does not contain any hazardous substances (according to REACH No. 1907/2006).

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 protection over its whole area or the immediate laying of a covering layer.

### Gas System Accessories

Product	Description	Sizes	Application	Supply
Solco Foil Backed Jointing Tape	Single sided tape for securing laps & joints	75mm x 50m	Securing Laps & 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 Gas Resistant DPC	A flexible polyethylene DPC with an aluminium foil	300mm - 1000mm	To prevent the transmission of Radon, CO <sub>2</sub> & Methane Gas	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
Solco 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