

Enviro BSL

Fully Welded VLDPE Basement Sheet Liner

DESCRIPTION

Enviro BSL is a VLDPE sheet membrane supplied and installed as a fully sealed and welded single-layer system, forming a flexible and durable basement membrane. It includes all accessories for service penetrations, through-fixings and terminations, and provides a robust, sustainable, chemically resistant solution for waterproofing below-ground structures.

CLASSIFICATION

BS EN 13501-1 – Reaction to fire: minimum Class E

BS EN 1928 – Watertight under 10 bar hydrostatic pressure for 24 hours

AREAS OF USE

SURFACES: Shotcrete, smooth concrete or rock, over non-woven geotextile (min. 700 gsm).

AREAS: Basements, slabs on ground, lift pits, below-grade water tanks, tunnels, flat and insulated roofs, and cut-and-cover structures.

FEATURES & BENEFITS

- Design life over 100 years
- Extensive international standards testing
- Fire rated
- Chemical and root resistant
- Extrusion weldable – fully welded seams
- Excellent elongation ($\geq 500\%$)
- Durable and tough
- Australian made

PRODUCT INFORMATION

Packaging	Rolls 2m Wide $\times$ 25m Long $\times$ 2.0mm Thick (including approx. 0.6mm signal layer)
Colour	Green signal layer / black membrane

PHYSICAL PROPERTIES

Property	Test Method	Test Result
Nominal Thickness	BS EN 1849-2	$\geq 2.1\text{mm}$
Tensile Strength	BS EN ISO 527	$> 23 \text{ N/mm}^2$
Elongation at Failure	BS EN ISO 527	$\geq 500\%$
Puncture Resistance	BS EN ISO 12236	3.5 kN

Property	Test Method	Test Result
Burst Strength / Multi-axial Elongation	BS EN 14151	168%
Impact Resistance (500g)	BS EN 12691	Watertight at 970mm
Hydrostatic Pressure (10 bar / 24 hours)	BS EN 1928	No leakage
Dimensional Stability (6 hours / 80°C)	BS EN 1107-2	1.66%
Environmental Stress Cracking	BS EN 14576	> 200 hours
Oxidation Resistance (90 days / 85°C)	BS EN 14575	Tensile 7%; elongation 6% change
Water Absorption	EN ISO 62	0.05%
Tear Resistance	EN 12310	194.5 N/mm
Root Penetration	EN 14416	No penetration
Reaction to Fire	BS EN 13501-1	Class E
Weld Seam Peel Resistance	BS EN 12316-2	8.5 N/mm – no peeling
Weld Seam Shear	BS EN 12317-2	Break outside seam
Breakdown Voltage	ASTM G62	26.1 kV
Micro-organism Resistance	BS EN 12225	$< 5\%$ change

Full test data – including aqueous, chemical and low-temperature behaviour – is available from EnviroSystems.

COVERAGE RATE

One 2m $\times$ 25m roll covers 50m² gross. Allow approximately 100mm for seam overlaps, plus detailing and wastage.

SUBSTRATE PREPARATION

Prepare surfaces with a shotcrete smoothing layer to remove peaks and fill hollows or provide suitably smooth concrete or rock. Surfaces must be clean and free from loose aggregate, sharp protrusions, tie wire, release agents and anything likely to damage the membrane.

Large irregularities must not exceed 200mm measured from a 1.0m curved edge, and any curvature must have a radius greater than 200mm – otherwise an EnviroSystems technical representative must inspect (double geotextile may be required). Cure shotcrete for at least 24 hours. Cover reinforcement, rock bolts and anchor heads with at least 20mm of shotcrete. Plug running water before lining. Collect heavy ingress in half-pipes or strip



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drains led to permanent drainage and maintain drainage throughout installation so no water pressure builds up behind the membrane.

APPLICATION

Enviro BSL must be installed by an approved, specialised applicator experienced in installation and testing.

Fixing: Install non-woven geotextile (min. 700 gsm), then nail compatible roundels to the surface in a pattern that adequately supports the membrane (this varies between walls and base slabs). Attach Enviro BSL to the roundels by hot-air spot welding, with enough slack to avoid over-stressing during concreting, but not so loose that it folds over itself.

Seams: Overlap adjacent rolls by approximately 100mm and join by double-seam welding. Pressure-test double seams. Where a double seam is not possible, hand weld and test by nail or vacuum test; hand welds can then be extrusion welded.

For applications or situations not covered above, contact EnviroSystems technical support.

CLEANING

No cleaning of tools is required. Keep weld areas clean and dry.

LIMITATIONS

- Installation by approved specialist applicators only.
- Must be installed over min. 700 gsm non-woven geotextile.
- Do not install where water pressure can build up behind the membrane during installation.

HEALTH & SAFETY ADVICE

Enviro BSL is an inert sheet membrane. Follow safe practices for hot-air and extrusion welding, including ventilation and burn protection, and safe manual handling of rolls. Refer to the Safety Data Sheet for full safety and handling procedures.

KEEP OUT OF REACH OF CHILDREN

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this publication is based on the present state of our best knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to accuracy, reliability, or completeness either expressed or implied is given other than those required by Commonwealth or State Legislation. The owner, his representative or the contractor is responsible for checking the suitability of

products for their intended use.

NOTE: Field service where provided does not constitute supervisory responsibility. Suggestions made by EnviroSystems, either verbally or in writing may be followed, modified, or rejected by the owner, engineer, or contractor since they, and not EnviroSystems, are responsible for carrying out procedures appropriate to a specific project.

NOTE: All products manufactured by EnviroSystems comply with the description and properties indicated in the technical data sheet that was current at the date of manufacture.

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