Technical Data Sheet

BluSeal VLDPE Tunnel Liner

VLDPE FLEXIBLE SHEET MEMBRANE

Bluey Technologies Pty Ltd
ABN 36 115 613 646

PO Box 898, Hamilton
QLD 4007 Australia
Tel: + 61 7 3399 3635
Fax: + 61 7 3899 9822

DESCRIPTION

BluSeal VLDPE Tunnel Liner is an extruded very low density polymer polyethylene sheet which requires only installation and welding to form a flexible and durable tunnel membrane.

USES

BluSeal VLDPE Tunnel Liner is used for lining bored and driven tunnels, cut and cover tunnels, cross passages, shafts and underground structures. BluSeal VLDPE Tunnel Liner comes in a range of thicknesses for various performance applications. The membrane is applied to structures to prevent water inflow and provide asset protection.

ADVANTAGES

- Flexibility to conform to various surface profiles
- High tear strength and elongation
- Exceptional waterproofing performance
- Long term durability
- Good weldability

PREPARATION

Shotcrete and rock surfaces must be smooth and free of sharp edges. Generally, changes in direction and voids must be limited to less than 10% over any measured length. For example, over a 1m length no void or protrusion should exceed 100mm. Fibre reinforced shotcrete must be covered with a smoothing layer and generally aggregate sizes greater than 10mm should be avoided. Membrane must be placed over non-woven geotextile not less than 500g/m^2 in weight.

APPLICATION

BluSeal VLDPE Tunnel Liner must be installed by an approved, specialised applicator. Experience in installation techniques and testing is essential. The membrane shall be fixed using compatible roundels supplied by Bluey. Following installation of geotextile, the roundels are nailed to the surface using suitable nail gun. Roundels shall be set in a pattern to adequately support the membrane, this will vary between the tunnel crown, walls and invert. BluSeal VLDPE Tunnel Liner is then heat welded to the roundels in a manner which will allow the connection to break under load without causing damage to the membrane. The BluSeal VLDPE Tunnel Liner shall be hung to the roundels with adequate 'quilting' to prevent stress during concrete placement. Excessive 'quilting' must also be avoided to prevent folds in the membrane. Seams shall be welded by a hot wedge double seam in accordance with DVS 2227. Each seam shall be tested in accordance with DVS 2227 or equivalent local standards.

Australia & Asia-Pacific
bluey@bluey.com.au
www.bluey.com.au

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PRODUCT DATA

Packaging:	Various widths, lengths and thicknesses available
Material Consistency:	≤50mm Straightness - complies (DIN16726) ≤10mm Flatness - complies (DIN16726)
Tensile Strength:	≤15MPa (DIN16726)
Elongation @ Break:	≥500% along/across (DIN EN ISO527)
Puncture Resistance:	Complies 750mm drop test (DIN16726)
Fire Resistance:	B2 (DIN4102)
Behaviour @ 80°C:	Dimensionally stable <2% Change of tensile strength <20% Change of % elongation <20%
Multiaxial Tension:	>50% (DIN53861 - Dia 1m)
Melt Flow Rate:	0.7 - 1.3g/10min (DIN EN ISO1133/4)
Density:	≥900kg/m^3
Storage:	Keep in cool dry areas, away for direct sunlight The membrane must not be exposed to UV light for more than 3 months Storage and transport of the membrane must be done with consideration for eliminating potential damage