

ITL Aqualiner Specifications



ITL Aqualiner – irrigation channel.

ITL Aqualiner

ITL Aqualiner, with a hydrostatic head of up to 50 metres, is a waterproof concrete liner. It comprises a flexible polymer-cementitious coating bonded to a geofabric material.

ITL Aqualiner is manufactured in Australia and is delivered to site ready to install – no need for hydration.

ITL Aqualiner has excellent mechanical properties, is flexible, durable, robust, and self-extinguishing (will not sustain fire – passes UL94).

Importantly, the geofabric incorporated in the liner design has strong multi-axial properties and excellent elongation, allowing ITL Aqualiner to be laid successfully over potentially damaging sub-grades.

ITL Aqualiner can be maintained, repaired and modified throughout its service life

(50+ years) without specialist labour or equipment. ITL Aqualiner resists mechanical, human and fauna traffic.

Potential applications include:

- lining irrigation channels
- civil engineering, including erosion control, culverts and embankments, beeching capping
- dam lining, including those with rocky substrates
- agricultural dams, stock races and stockyard lining
- flood gates and flood mitigation
- certified AS4020 for potable water applications.



ITL Aqualiner Specifications

Property	Test Method	Result	Comments
Hydrostatic Head	Wacker Test	Passed 50m waterhead	Ability to hold a large head of water.
Thickness Measure	AS 2001.2.15A	Mean Thickness: 2.26mm	Thickness dictates performance criteria such as its tear resistance, puncture resistance and resistance to installation damage.
Mass Per Unit Area	AS2001.2.13	1070g/sq m	Determined by weighing a unit area of a geomembrane and dividing mass by unit area measured.
Flex Resistance	AS 4878.9 Part B	No deterioration, cracking or delamination	Tests the dynamic flex performance of coated fabrics, ie damage by repeated flexing.
Taber Abrasion	ASTM D3389	1000gm/500 revs Mass Loss: 1.18mg per rev	Determination of the wear resistance of fabrics coated with rubber or plastics to abrasion. The abrasion is measured by mass loss or number of cycles required to wear (ASTM).
Peel Adhesion	ASTM D 751	Mean: 53.6 N/25mm Std Dev: 9.3N/25mm	The force required to peel the coating from the base fabric. This test relates to the ability of the coating to adhere to the base fabric. Good coating adhesion is important in preventing delamination of the coating compound, a prerequisite for join strength. Delamination will result in leakage through the liner or join and promote premature failure.
CBR Burst Strength	AS 3706.4 (simulate cattle hoof intrusion)	Mean: 3760.0 NM Displacement: 51.1	This is used as a measure to judge the resistance of the liner to puncture forces, and a measure of multi-directional strength.
Small Scale Puncture Test	ASTM D4833 (kangaroo paw test)	Mean: 715.0 Newton Std Dev: 21.0 Newton	Puncture resistance is important when the liner is installed under onerous conditions, ie on a subgrade of stones etc. Small scale test and difficult to relate to field performance.
Large Scale Puncture Test	ASTM D5514	50 psi (345kpa) for 14 hours No puncture experienced.	Test developed to more closely simulate field conditions.
Grab Tensile	AS2001.2.3.2 (to simulate down drag on liner)	Mean Max Force NMD:1232 TD:1887 Max Force Std Dev NMD:112 TD:85	Determination of maximum force using grab method. The grab method is used to determine effective strength or break strength.
Strip Tensile	ASTM D 751	Mean: 488N/25mm Std Dev: 24.0N/25mm Mean: 547.0/25mm Std Dev: 42.0N/25mm Elongation: Mean 24.88% Std Dev: 1.5%	Tensile tests measure the force required to break a specimen and the extent to which the specimen stretches or elongates to that breaking point. Tensile tests produce a stress-strain curve, which can be used to determine tensile modulus.
Multi-Axial Testing	ASTM D5617 Trapezoidal Tear AS 3706.3 (resistance to tearing)	Pressure at rupture: 15.1psi Strain at rupture: 34.9% Mean: 350.0 Newton Std Dev: 32 Newton Mean: 466.0 Newton Std Dev: 40 Newton	Multi-axial testing is designed to simulate in-service stress conditions where there is stress on the liner from multiple directions. The test best simulates those out-of-plane stresses and strains that liners experience in the field. The tear test propagates from an initial cut, mimics the loading on a liner damaged during installation.

Standard Roll Dimensions: Length/width/liner thickness/dia 50m/2.2m/2mm/0.41m

Roll Weight: Approximately 159kg