

TTL1 - Geomembranes

TTL1 is a flexible, Fish Safe, UV resistant pond liner. Developed during the past three years, TTL1 combines the flexibility and performance of PVC with some additional properties; TTL1 is UV resistant and Fish Safe!

The goal of the TTL1 development project was to produce a flexible liner, similar to PVC in properties but without plasticizers or cold temperature stiffness that limits the use of regular flexible PVC. The result was a durable, tough liner that remains flexible enough to install at -40 C (-40 F).

Each step in the production of your TTL1 liner panel, from the geomembrane production, to fabrication into a custom panel, is governed and directed by an ISO 9002 Quality Program. The resulting process is professionally designed to ensure your geomembrane meets specified properties, and performs to the highest possible standards in the field.

TTL1 is a natural choice for water or water based effluent containment, in which the liner will be left exposed to the elements. TTL1's white color provides an attractive appearance, and minimizes solar heating during service. For exposed ponds a flexible prefabricated geomembrane makes economic sense, and TTL1 has the properties you require for years of problem free service.

14 Nov 2003	TTL1 Minimum Material Properties			
Style	ASTM	TTL1 20 (U)	TTL1 30 (U)	TTL1 40 (U)
Thickness (Nominal)	D5199	20 mil 0.50 mm	30 mil 0.75 mm	40 mil 1.0 mm
Tensile Strength at Break (MD/CD)	D882	48 ppi 8.4 N/mm	73 ppi 12.8 N/mm	97 ppi 17.0 N/mm
Elongation at Break (MD/CD)	D882	800%	800%	800%
Dimensional Stability	D1204	4%	3%	3%
Tear Resistance	D1004	6.5 lbs 29 N	8.5 lbs 38 N	10.5 lbs 47 N
Low Temperature Impact Resistance	D1790	-76°F -60°C	-76°F -60°C	-76°F -60°C
Hydrostatic Resistance	D751 Method A	60 psi 410 kPa	82 psi 570 kPa	90 psi 620 kPa

14 Nov 2003	TTL1 Minimum Shop Seam Strengths			
Style	ASTM	TTL1 20 (U)	TTL1 30 (U)	TTL1 40 (U)
Heat Bonded Seam Strength	D6392 25.4 mm (1") Strip	32 ppi 5.6 N/mm	45 ppi 7.8 N/mm	60 ppi 10.5 N/mm
Heat Bonded Peel Adhesion Strength	D6392 25.4 mm (1") Strip	No FTB 15 ppi 2.6 N/mm	No FTB 20 ppi 3.5 N/mm	No FTB 25 ppi 4.4 N/mm

14 Nov 2003	TTL1 Minimum Field Seam Strengths			
Style	ASTM	TTL1 20 (U)	TTL1 30 (U)	TTL1 40 (U)
Heat Bonded Seam Strength	D6392 25.4 mm (1") Strip	25 ppi 4.4 N/mm	40 ppi 7.0 N/mm	55 ppi 9.6 N/mm
Heat Bonded Peel Adhesion Strength	D6392 25.4 mm (1") Strip	No FTB 10 ppi 1.7 N/mm	No FTB 15 ppi 2.6 N/mm	No FTB 20 ppi 3.5 N/mm

Each and every liner panel we produce is a custom panel. The way we set up our shop is unique in that our shop welders produce prefabricated panels to best match your containment area. We size each panel to fit, without waste, in a logical sequence in your containment area. In containments with irregular shapes we size our panels to best accommodate the irregular size.

There are no theoretical limits to the size of the liner panels that we can prefabricate but there are some practical limits, notably panel weight. Panel weight is important because of the limits of handling equipment that will be available in the field. TTL1 is normally limited to a maximum panel weight of 2,500 lbs (1,200 kg); however, if a skilled installation crew is available then a panel of up to 4,000 lbs (1,800 kg) is possible.

TTL1 FABRICATION SIZES		
Material Style	2500 lb Panel size 1120 kg	4000 lb Panel size 1800 kg
TTL1 20 mil (0.50 mm) Unsupported	25,300 ft ² 2,400 m ²	40,500 ft ² 3,800 m ²
TTL1 30 mil (0.75 mm) Unsupported	16,900 ft ² 1,580 m ²	27,000 ft ² 2,500 m ²
TTL1 40 mil (1.0 mm) Unsupported	12,700 ft ² 1,200 m ²	20,000 ft ² 1,900 m ²

Panels are accordion folded in one direction and then rolled in the other direction. Unfolding instructions and dimensions are marked on the individual liner panel. Each panel is wrapped in an opaque, weather resistant covering suitable for shipment and storage.

All shop-fabricated seams are 100% visually inspected by the welding operator. Every fifth seam is destructively tested in peel and shear. Quality control reports are prepared with each panel produced.

Americover[®]

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