

GEOTEST PACIFIC - GEOMEMBRANE TESTING SERVICES

Test Description	Comments	Current Procedures	Previous Procedures
Asperity Height	For textured geomembranes	GRI GM12	
Brittleness Temp.	By impact	ASTM D-1790	
Carbon black content	Pyrolysis in tube furnace with inert atmosphere	ASTM D-1603	
Carbon black content	Pyrolysis in muffle furnace	ASTM D-4218	
Carbon dispersion	Microscopic observation and comparison with polyethylene geomembrane dispersion standards	ASTM D-5596	
Carbon dispersion	Microscopic observation and comparison dispersion in rubber	ASTM D-2663	ASTM D-3015
Chemical resistance testing	Pot Tests	ASTM D-5322 (geosynthetics)	ASTM D-543 (plastics)
Coefficient of linear thermal expansion		ASTM D-696	
Density	By displacement method	ASTM D-792 Method B	
Density	By density-gradient technique	ASTM D-1505	
Dimensional Stability	HDPE 100 deg.C for 1 hour PVC 100 deg.C for 15 mins	ASTM D-1204	
Fluid Penetration	Through geomembranes	ASTM D-5886	
Impact Strength	Izod notched impact	ASTM D-256	ISO 180
Modulus 2% secant		ASTM D-5323	
Modulus- Tangential		ASTM D-882	
Melt Flow Index	HDPE 2.16/5 kg and 190 deg.C	ASTM D-1238	
Oven Ageing	Heat ageing at 85 deg.C	ASTM D-5721	
Oxidative Induction Time (OIT)	Used to detect level of hindered phenolic antioxidants	ASTM D-3895 200 deg.C	DIN EN728
Oxidative Induction Time -High Pressure (HP-OIT)	Used to detect level of hindered amine stabilizers (HALS) HDPE > 400 mins.	ASTM D-5885 150 deg.C	
Peel and Shear (Non-reinforced Geomembrane)	For non-reinforced geomembrane thermal fusion welds	ASTM D-6392 ASTM D-4437	ASTM D-413 ASTM D-3083
Peel and Shear (Reinforced Geomembrane)	For reinforced geomembrane thermal welds	ASTM D-751 (shear) ASTM D-413 (peel)	
Peel and Shear (Factory seams)	Integrity of Flexible Sheet seamed in a factory	ASTM D-4545	
Peel and Shear (Chemical Fusion Welds)	For Chemical Fusion Welds (generally requires curing overnight)	ASTM D-6214	
Ply adhesion	For reinforced geomembranes	ASTM D-413 (peel)	
Puncture Resistance	Rod Puncture (Index Puncture)	ASTM D-4833	
Puncture	Hydrostatic/large scale	ASTM D-5514	
Resistance to Soil Burial (e.g. PVC)	% Tensile Retention	ASTM-D3083 (Part. 9.5)0	
Sampling for testing	Standard Practice for Sampling of Geosynthetics for Testing	ASTM D-4354	
Stress Cracking Resistance	Constant Load (single Point Notched) > 300 hrs	ASTM D-5397 SP-NCTL test	ASTM D-1693 (bent strip)
Tear Resistance	For non-reinforced geomembranes	ASTM D-1004	
Tear Resistance-tongue tear	For coated fabrics (which includes reinforced geomembranes)	ASTM D-751	
Tear Resistance - large scale tongue tear	For reinforced geomembranes	ASTM D-5884 Method B	
Trapezoidal Tear	Trap tear for reinforced GM/GT	ASTM D-4533	
Tensile Properties - Index	For non-reinforced geomembranes	ASTM D-6693 (21°C) ASTM D638 (plastics)	ASTM D-6637 (GEOGRIDS)
Tensile Properties - Index	For non-reinforced geomembranes < 1 mm (thin films)	ASTM D-882	
Tensile Properties - Index	For non-reinforced geomembranes < 1 mm Vulcanized Rubber (e.g. Hypalon)	ASTM D-412	
Tensile Properties - Index	For reinforced geomembranes	ASTM D-751 (Grab)	
Tensile Properties - Wide Width	Field Performance	ASTM D-4885	
Tensile Properties - Multi-axial	Large scale out-of-plane tensile properties	ASTM D-5617	ISO 9863
Thickness	For smooth membranes	ASTM D-5199	ASTM D-1777 ASTM D-751
Thickness (core)	For textured membranes	ASTM D-5994	ASTM D-751
Thickness	Calculated thickness using mass and density	ASTM D-1593	
Weathering (accelerated)	QUV fluorescent exposure of unreinforced polyolefin GMLs	ASTM D-7238 (1600 hours)	GRI GM-11
Weld Testing	Integrity of Field seams	ASTM D-4437	

- Testing
- Chemical Analysis
- Forensic Investigation
- QC & QA of Geomembranes and polymeric liners

ExcelPlas - Geomembrane Testing Services (GEOTEST)
 Office: 3 Esplanade Lane (off The Esplanade) Edithvale, VIC 3196
 Post: PO Box 2080, Edithvale, VIC Australia 3196
 Contact:
Dr. John Scheirs
 p. 03-9772-1887 m. 0407-261-913 fax 03-9772-1330
 e: scheirs.john@pacific.net.au