

Test Description	Comments	Current Procedures
Asperity Height	For textured geomembranes	ASTM D7644
Brittleness Temperature	By impact	ASTM D1790
Carbon Black Content	Pyrolysis in tube furnace with inert atmosphere	ASTM D1603
Carbon Black Content	Pyrolysis in muffle furnace	ASTM D4218
Carbon Dispersion	Microscopic observation and comparison with polyethylene geomembrane dispersion standards	ASTM D5596
Carbon Dispersion	Microscopic observation and comparison dispersion in rubber	ASTM D2663
Chemical Resistance Testing	Pot Tests	ASTM D5322 (Geosynthetics)
Coefficient of Linear Thermal Expansion		ASTM D696
Density	By displacement method	ASTM D792 (Method B)
Density	By density-gradient technique	ASTM D1505
Dimensional Stability	HDPE 100 deg.C for 1 hour PVC 100 deg.C for 15 mins	ASTM D1204
Fluid Penetration	Through geomembranes	ASTM D5886
Impact Strength	Izod notched impact	ASTM D256
Melt Flow Index	HDPE 2.16/5 kg and 190 deg.C	ASTM D1238
Modulus - Tangential		ASTM D882
Modulus 2% Secant		ASTM D5323
Oven Ageing	Heat ageing at 85 deg.C	ASTM D5721
Oxidative Induction Time - High Pressure (HP-OIT)	Used to detect level of hindered amine stabilizers (HALS) HDPE > 400 mins.	ASTM D5885 (150 °C)
Oxidative Induction Time (OIT)	Used to detect level of hindered phenolic antioxidants	ASTM D3895 (200 °C)
Peel and Shear (Reinforced Geomembrane)	For reinforced geomembrane thermal welds	ASTM D413 (Peel) ASTM D751 (Shear)
Peel and Shear (Chemical Fusion Welds)	For Chemical Fusion Welds (generally requires curing overnight)	ASTM D6214
Peel and Shear (Factory seams)	Integrity of Flexible Sheet seamed in a factory	ASTM D4545
Peel and Shear (Non-Reinforced Geomembrane)	For non-reinforced geomembrane thermal fusion welds	ASTM D6392
Ply Adhesion	For reinforced geomembranes	ASTM D413 (Peel)
Puncture	Hydrostatic / large scale	ASTM D5514
Puncture Resistance	Rod Puncture (Index Puncture)	ASTM D4833
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 D4354
Stress Cracking Resistance	Constant Load (single Point Notched) > 300 hrs	ASTM D5397 (SP-NCTL Test)
Tear Resistance	For non-reinforced geomembranes	ASTM D1004
Tear Resistance - Large Scale Tongue Tear	For reinforced geomembranes	ASTM D5884 (Method B)
Tear Resistance - Tongue Tear	For coated fabrics (which includes reinforced geomembranes)	ASTM D751
Tensile Properties - Index	For non-reinforced geomembranes	ASTM D638 (Plastics) ASTM D6693 (21 °C)
Tensile Properties - Index	For non-reinforced geomembranes < 1 mm (thin films)	ASTM D882
Tensile Properties - Index	For non-reinforced geomembranes < 1 mm Vulcanized Rubber (e.g. Hypalon)	ASTM D412
Tensile Properties - Index	For reinforced geomembranes	ASTM D751 (Grab)
Tensile Properties - Multi-axial	Large scale out-of-plane tensile properties	ASTM D5617
Tensile Properties - Wide Width	Field Performance	ASTM D4885
Thickness	For smooth membranes	ASTM D5199
Thickness	Calculated thickness using mass and density	ASTM D1593
Thickness (Core)	For textured membranes	ASTM D5994
Trapezoidal Tear	Trap tear for reinforced GM/GT	ASTM D4533
Weathering (Accelerated)	QUV fluorescent exposure of unreinforced polyolefin GMLs	ASTM D7238 (1,600 hours)
Weld Testing	Integrity of Field seams	ASTM D6392
and many more...		