LAYFIELD GEOSYNTHETICS

TECHNICAL SPECIFICATIONS

REINFORCED POLYETHYLENE (RPE®) - GEOMEMBRANE

Layfield has used reinforced polyethylene (RPE®) as an economical geomembrane material for over 35 years. With UV and chemical resistance and enhanced performance properties allowing for flexibility in extremely low temperatures, RPE® is an excellent material for seepage control in non-hazardous applications.

A backfilled RPE® liner can provide permanent seepage control in water containment applications. With proper placing and backfilling, RPE® can also provide geomembrane-level containment on sandy soil in carefully prepared sites. Common uses of RPE®'s are canal liners, drilling sump liners, soil remediation liners, tailings dam liners, and interim landfill caps.

Material Properties	April **2023**	**Reinforced Polyethylene RPE®**		
	Rev	ASTM	**RPE® 15**	**RPE® 25**
	Thickness (Nominal)	D1777	12 mil 0.30 mm	24 mil 0.60 mm
	Coating Thickness Both Sides (Nominal)	D1777	1.75 mil 0.045 mm	2.4 mil 0.061 mm
	Weight (Nominal)		6.0 oz/yd^2 203 g/m^2	10 oz/yd^2 340 g/m^2
	Tensile Strength MD	D7004	220 lbs 976 N	294 lbs 1,308 N
	Tensile Strength CD	D7004	180 lbs 777 N	242 lbs 1,076 N
	Elongation	D7004	15%	15%
	Hydrostatic Resistance	D751	163 psi 1124 kPa	262 psi 1803 kPa
	Puncture Resistance	D4833	94 lbs 420 N	150 lbs 667 N
	Low Temperature Bend	D2136	-67°F -55°C	-85°F -65°C
	UV Resistance (Strength Retained)	G151 2000 Hours	>90%1	>90%1

April 2023	RPE® Minimum Shop Seam Strengths		
Style	ASTM	**RPE® 15**	**RPE® 25**
Heat bonded Seam Strength	D7747 25.4 mm (1") Strip	90 ppi 15.8 N/mm	120 ppi 21.0 N/mm
Heat Bonded Peel Adhesion Strength	D7747 25.4 mm (1") Strip	FTB AD-DEL	FTB AD-DEL

Notes: 1. Actual result as tested at time of formulation.

INSTALLATION

Layfield's RPE® liners are flexible enough to be prefabricated at our facility into large panels. The lightweight of the RPE® series allows very large panels to be prefabricated, up to 100,000 square feet for the lightest RPE® material (RPE® 15), and up to 57,000 square feet for the heavier OR RPE® 25 products. The prefabricated panel is accordion folded, rolled on a core, and delivered to the job site secured to a pallet. Prefabricated panels can often cover a small project with a single panel. Local labor forces can be used to unroll and unfold the panel, while on larger projects, RPE® panels are overlapped or seamed with RPE® fab tape. The lightweight nature of the RPE® series makes them difficult to heat seal in the field, but effective seepage control can be achieved with a 1 meter (3.28 feet) overlap or a taped seam.