

RPE® - Geomembrane

RPE®'s are economical lining materials for seepage control, soil remediation, and interim landfill cap applications.

Reinforced Polyethylene (RPE®) has been used as a geomembrane material for over 20 years. Common uses of RPE®'s are canal liners, drilling sump liners, soil remediation liners, tailings dam liners, and interim landfill caps. RPE®'s have UV resistance for short term exposed use, are flexible in extremely low temperatures, and have very good chemical resistance.

RPE®'s are most commonly used for seepage control in non-hazardous applications. In canal liners and water reservoirs a backfilled RPE® liner provides permanent seepage control. In a carefully prepared site on sandy soils RPE® can provide geomembrane level containment, however placement and backfilling of the material needs to be done carefully.

Oil Resistant RPE® (OR RPE®) is one of the most common materials sold for soil remediation. Further details on OR RPE® are contained in a separate section on Geomembranes - OR RPE®.

RPE® makes an excellent interim cover material for covering landfill cells or soil remediation stockpiles. As a cover RPE® prevents the infiltration of precipitation for 3 to 5 years (dependant on site conditions).



25 Nov 2003	RPE® Typical Material Properties			
Style	ASTM	RPE® 15	RPE® 25	OR RPE® 25
Thickness (Nominal)		12 mil 0.30 mm	20 mil 0.51 mm	20 mil 0.51 mm
Coating Thickness (Nominal)		2 mil 0.05 mm	2 mil 0.05 mm	2 mil 0.05 mm
Tensile Strength MD	D5034	214 lbs 950 N	342 lbs 1,520 N	348 lbs 1,550 N
Tensile Strength CD	D5034	189 lbs 840 N	342 lbs 1,520 N	348 lbs 1,550 N
Elongation	D751	15%	15%	15%
Tear Strength MD	D751 Tongue Tear	68 lbs 300 N	132 lbs 585 N	112 lbs 495 N
Tear Strength CD	D751 Tongue Tear	70 lbs 310 N	131 lbs 580 N	108 lbs 480 N
Low Temperature Bend	D2136	-67°F -55°C	-67°F -55°C	-67°F -55°C
Burst Strength	D751	297 psi 2050 kPa	551 psi 3800 kPa	609 psi 4200 kPa
UV Resistance (Strength Retained)	G53-84 2000 Hours	>80% ¹	>80% ¹	>80% ¹

Note¹: UV results are for black product only. Colors other than black may have a lower U.V. resistance.

25 Nov 2003	RPE® Minimum Shop Seam Strengths			
Style	ASTM	RPE® 15	RPE® 25	OR RPE® 25
Heat bonded Seam Strength	D4545 25.4 mm (1") Strip ²	90 ppi 15.8 N/mm	120 ppi 21 N/mm	120 ppi 21.0 N/mm
Heat Bonded Peel Adhesion Strength	D4545 25.4 mm (1") Strip ²	FTB AD-DEL	FTB AD-DEL	FTB AD-DEL
Note ² : A 25.4 mm (1 in.) strip tensile test is used in QC testing due to the nature of the test equipment available (ASTM D751 procedure B). Testing using the grab tensile method (ASTM D751 procedure A) is available for an additional charge.				

Each and every RPE® liner produced is a custom sized panel. These liner panels are sized to your job requirements to the closest multiple of our roll stock widths.

There are no theoretical limits to the size of liner panel we can fabricate, however there are some practical handling weights. Panel weight is important because of the limits of handling equipment available in the field. If a forklift or other piece of equipment is available for placement and deployment then a panel of up to 1800 kg (4000 lbs) could be used. If only "hand power" is available then a panel weight of 1400 kg (3000 lbs) should not be exceeded. Under certain circumstances larger panels could be provided. Please contact us for further details.

RPE® FABRICATION SIZES		
Material Style	3000 lb Panel size 1400 kg	4000 lb Panel size 1800 kg
RPE® 15	76,900 ft ² 7,200 m ²	102,500 ft ² 9,600 m ²
RPE® 25	49,000 ft ² 4,600 m ²	65,500 ft ² 6,100 m ²
OR RPE® 25	47,600 ft ² 4,500 m ²	63,500 ft ² 5,900 m ²

Hot air fusion welding is utilized for all RPE® fabrication. This welding technique provides a fully fused, water-tight weld. Panels are accordion folded in one direction and then rolled in the other direction. Unfolding instructions and panel size are marked on the individual lining panel. Each panel is wrapped in an opaque, weather resistant, covering suitable for shipment and storage at site.

Large inventories of RPE® materials are maintained throughout the construction season. Most RPE® panels can be fabricated and delivered in a matter of days, and larger projects can be supplied very quickly. Please contact us for further delivery information.

Americover®

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