

ULTRA LOW PERM GEOMEMBRANE – 40 MIL

Layfield's Ultra Low Perm Geomembrane liners act as a vapor barrier system that can restrict naturally occurring gases and volatile organic compounds (VOCs) from migrating through the ground and concrete slab.

This seven-layer co-extruded barrier is made from state-of-the-art polyethylene and EVOH resins, providing unmatched impact strength and superior gas and moisture transmission resistance. Layfield's Ultra Low Perm Geomembrane is up to 100 times less permeable than typical high-performance polyethylene vapor retarders against Methane, Radon, and other harmful VOCs, allowing you to construct healthy and safe buildings.

February 2024		Ultra Low Perm Geomembrane – 40 Mil			
Properties	Test Method	Imperial		Metric	
		Minimum	Typical	Minimum	Typical
Appearance		Black			
Thickness (Nominal)		40 mil		1.02 mm	
Weight		205 lbs/msf		1001 g/m ²	
Tensile Strength at Break	ASTM D669	125 lbs/in	140 lbs/in	219 N/cm	245 N/cm
Tensile Elongation at Break	ASTM D669	550%	650%	550%	650%
Tear Strength	ASTM D1004	22 lbs	27 lbs	98 N	120 N
Puncture Resistance	ASTM D4833	70 lbs	90 lbs	311 N	400 N
Oxidation Induction Time (OIT) or High Pressure OIT (HPOIT)	ASTM D3895 ASTM D5885	100 min 400 min	250 min -	100 min 400 min	250 min -
Carbon Black Content ¹	ASTM D4218	2.0%	2.3%	2.0%	2.3%
Carbon Black Dispersion	ASTM D5596	Pass			
Benzene Permeance	See Note ²	2.27 x 10 ⁻¹⁰ m ² /sec or 1.81 x 10 ⁻¹³ m/s			
Toluene Permeance	See Note ²	3.15 x 10 ⁻¹⁰ m ² /sec or 7.28 x 10 ⁻¹⁴ m/s			
Ethylbenzene Permeance	See Note ²	2.47 x 10 ⁻¹⁰ m ² /sec or 1.67 x 10 ⁻¹⁴ m/s			
M & P-Xylenes Permeance	See Note ²	2.33 x 10 ⁻¹⁰ m ² /sec or 1.91 x 10 ⁻¹⁴ m/s			

For up-to-date technical information, be sure to visit us online at www.LayfieldGroup.com

O-Xylene Permeance	See Note ²	2.20 x 10 ⁻¹⁰ m ² /sec or 1.71 x 10 ⁻¹⁴ m/s			
Methane Permeance	ASTM D1434	< 3.70E ⁻¹³ m/s			
Hydrogen Sulfide	See Note ³	1.09E ⁻⁰⁹ m/s			
Trichloroethylene (TCE)	See Note ²	1.53 x 10 ⁻¹⁰ m ² /sec or 5.25 x 10 ⁻¹⁵ m/s			
Perchloroethylene (PCE)	See Note ²	1.44 x 10 ⁻¹⁰ m ² /sec or 5.22 x 10 ⁻¹⁵ m/s			
Cold Temperature Impact	ASTM D746	-40°F	-40°C		
Maximum Static Use Temperature		180°F	82°C		
FACTORY SEAM REQUIREMENTS					
Bonded Seam Strength	ASTM D6392 Mod.	80 lbs/in.	90 lbs/in.	140 N/cm	158 N/cm
Seam Peel Adhesion	ASTM D6392 Mod.	60 lbs/in.	70 lbs/in.	105 N/cm	123 N/cm

¹ No carbon black in barrier layers.

² Aqueous Phase Film Permeance. Permeation of Volatile Organic Compounds through EVOH Thin Film Membranes and Coextruded LLDPE/EVOH/ LLDPE Geomembranes, McWatters and Rowe, Journal of Geotechnical and Geoenvironmental Engineering© ASCE/ September 2015. (Permeation is the Permeation Coefficient adjusted to actual film thickness - calculated at 1 kg/m³.) The study used to determine PCE and TCE is titled: Evaluation of diffusion of PCE & TCE through high performance geomembranes by Di Battista and Rowe, Queens University 8 Feb 2018.

³ The study used to determine diffusion coefficients is titled: Hydrogen Sulfide (H₂S) Transport through Simulated Interim Covers with Conventional and Co-Extruded Ethylene-Vinyl Alcohol (EVOH) Geomembranes.

INSTALLATION

Where appropriate, install Ultra Low Perm Geomembrane in accordance with ASTM E 1643. The subgrade needs to be compacted and graded per the project's plans & specifications. Layfield's Ultra Low Perm Geomembrane needs to be protected from damage during the installation of the reinforcing steel, utilities and during the concrete pour. In the event a repair is required on the Ultra Low Perm Geomembrane as a result of damage, ensure the repair patch material is the same material. All repair patches must have round edges and overlap the repair area by a minimum of 150mm (6").

Layfield's Ultra Low Perm geomembrane is flexible enough to be prefabricated at our facility into large panels. 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.

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