MIRAGE GEOMEMBRANES

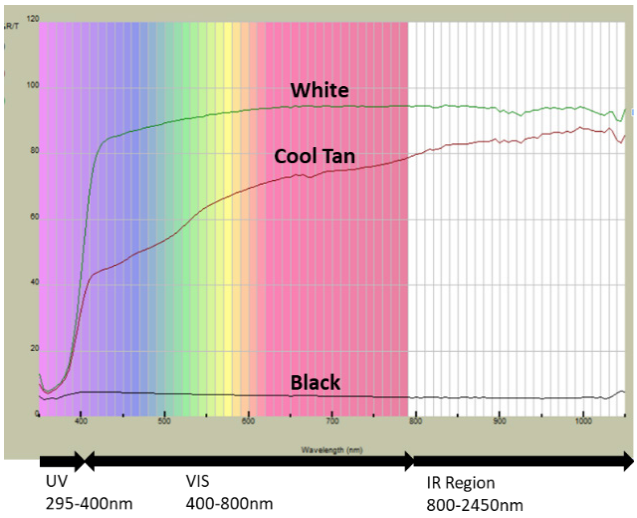
TECHNICAL DOCUMENT

Mirage - DURABLE AND HIGHLY REFLECTIVE MEMBRANES FOR POTABLE WATER APPLICATIONS

MIRAGE DESIGN FEATURES

Highly reflective membranes

Cool tan and white color options.
Reflects more than 70% of light and absorbs less solar energy (Cool tan TSR > 70%, White TSR > 80%).
High performance Infrared-Reflective and weather-resistant titanium dioxide pigments.
Excellent stability with low thermal expansion-contraction.
Reduces heat buildup under floating covers.



Weathering Resistance

Proprietary UV stabilizer and antioxidant package for superior UV weathering resistance.
Accelerated weathering performance over 10,000 hours in Xenon-Arc weathering chamber (80°C BPT, 0.7 W/m^2 irradiance).
Retaining 95% weight after exposure.
Retaining color dE* < 3.0 (CIElab d65/10) after exposure.

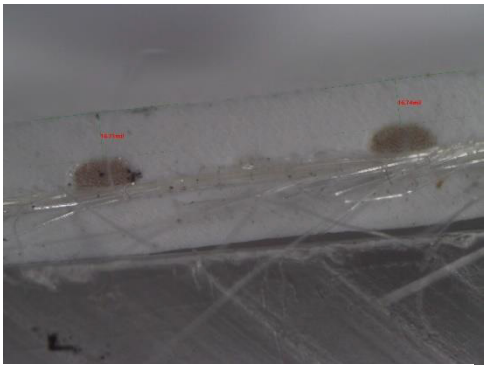
Superior Chlorine Resistance

Over 80% tensile strength retained after immersion in 10 to 200 ppm chlorine concentration (Method GRI-GM34).
No cracking was observed (40x magnification) after immersion.

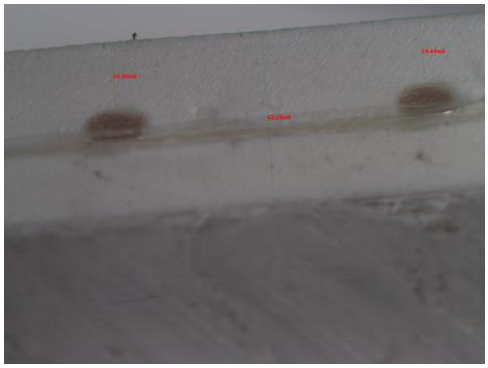
% Tensile Strength Retained (1in)	45 mils	60 mils
10 ppm, 50°C, 180 days	88%	91%
50 ppm, 50°C, 180 days	87%	85%
100 ppm, 50°C, 30 days	90%	90%
200 ppm, 50°C, 30 days	93%	93%

Note: GRI-GM 34 – Star-fold specimens incubated at 50°C ± 1°C at 10 ppm chlorine concentration in distilled deionized water. Samples and solution are changed once a week during incubation. Test data based on knit fabric.

Membrane retains integrity after immersion.



Cross-section of 45 mils membrane after immersion in 200 ppm chlorine concentration for 30 days.
20x magnification. Knit reinforcement.



Cross-section of 60 mils membrane after immersion in 200 ppm chlorine concentration for 30 days.
20x magnification. Knit reinforcement.

Excellent Flexibility

Flexibility to facilitate fabrication, installation and handling in the field.
ASTM D6182 Repeated flex and adhesion testing is used to determine flexing performance. Test is carried out at 100 cycles per min.

Product	Thickness	No of flex cycles – Rank 1 No Damage	No of flex cycles – Rank 2
Knit reinforcement	45 mils	10,000	
	60 mils	20,000	
Woven reinforcement	45 mils	5,000	10,000
	60 mils	10,000	30,000

Note:
ASTM D6182 testing undertaken in both machine and cross-machine directions
Rank of Damage - Description
1= No damage
2= Discoloration or thin cracks in top finish coat only.
3= Cracks into base coats.
4= Cracks large enough to see substrate below.
5= Finish cracks and peels back or flakes off.

Performance properties

Properties	Method	Typical Value
Abrasion Resistance (H18 wheel, 1kg load)	ASTM D3884	+5,000 cycles (45 mils) +8,000 cycles (60 mils)
Ozone resistance 100 pphm, 60ºC	ASTM D1149 Method B	Pass
Permeability, m/s	ASTM E96BW	1.38E-15 (45 mils) 1.04E-15 (60 mils)
Coefficient of linear thermal expansion	ASTM D831-14	1.1 x 10-4 m/m/ºC
Water absorption, 158hr immersion, 70ºC	ASTM D570	< 0.02 kg/m2
Ply adhesion	ASTM D6636	+20 lbs/in / FTB
Seam shear strength, hot weld method	ASTM D7747	+150 lbs/in (knit reinforcement) +320 lbs/in (woven reinforcement) No seam failure. Retains +90% break strength.
Seam peel, hot weld method	ASTM D7747	+30 lbs/in

NSF/ANSI/CAN 61 Tested & Certified

Mirage is available at 120” with Encapsulated edges

Full Product Specification

E2 GEOMEMBRANES

Mirage by E Squared Geomembranes–a revolutionary geomembrane engineered to transform water conservation. Inspired by the natural reflectivity of glaciers, Mirage features high solar reflectivity that effectively bounces the sun's heat back into the atmosphere, dramatically reducing evaporation and keeping water bodies cooler. Designed as a robust, floating cover, it not only safeguards reservoirs, lakes, and agricultural water sources from unnecessary heat absorption but also promotes energy savings and environmental sustainability. With its advanced, durable construction, Mirage offers a cost-effective, long-term solution that meets the challenges of modern water management while paving the way for a more sustainable future.

MIRAGE

Website

New Jersey, USA Virginia, USA Israel

Australia New Zealand

https://e2geomembranes.com/products/mirage/v

Proud to comply with the following:

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January 2026