

ABSOLUTE BARRIER™ X-Series X40BAL & X60BAL

High Performance HDPE Geomembrane Gas Barrier



Product Description

Absolute Barrier™ X-Series X40BAL and X60BAL are a seven layer co-extruded geomembranes consisting of a durable high-density polyethylene (HDPE) with an inner core of highly effective barrier resin, designed specifically as a barrier against methane, radon and VOCs. High strength HDPE provides excellent chemical resistance and durability. A robust stabilization package that exceeds the industry standard; provides long-term protection from thermal oxidation and ultraviolet degradation in exposed applications.

Product Use

Absolute Barrier™ X-Series X40BAL and X60BAL are designed to stop gas vapor migration on Brownfield sites, in residential and commercial buildings as well as geomembrane containment and covering systems. When installed under concrete slabs as a gas barrier, a passive system is recommended to include a ventilated system with sump(s) that could be converted to an active control system with properly designed ventilation fans. Absolute Barrier™ also performs extremely well against gasoline vapor transmission as well as other VOCs in geofoam protection applications.

Absolute Barrier™ X-Series X40BAL and X60BAL are effective temporary and long term landfill caps and are 50 times less permeable to VOCs than standard 80 mil HDPE geomembranes. Contaminants found in leachate and landfill gas in municipal and hazardous waste landfills can migrate through standard HDPE contributing to both atmospheric and groundwater contaminations.

Both X40BAL and X60BAL provide an effective barrier to a wide range of VOCs including benzene, toluene, ethylbenzene, o-xylene and many others.

Size & Packaging

Absolute Barrier™ is available in 16' wide layflat in various roll lengths. All panels are tightly rolled onto a heavy-duty core for ease of handling and time saving installation.



Textured Landfill Liner

Product	Part #
ABSOLUTE BARRIER™	X40BAL
ABSOLUTE BARRIER™	X60BAL

APPLICATIONS

EPS Geofoam Protection	Underslab Methane Barrier
Landfill Cap	Underslab Vapor Barrier
Temporary Landfill Gas Cover	Remediation Cover / Liner
Floating Gas Cover	Leachate Collection Ponds
Underslab VOC Barrier	Odor Barrier
Underslab Radon Barrier	



PRO-FORMA DATA SHEET - TYPICAL VALUES

PROPERTIES	TEST METHOD	ABSOLUTE BARRIER™ X40BAL		ABSOLUTE BARRIER™ X60BAL	
		Imperial	Metric	Imperial	Metric
WEIGHT		198 lbs/msf	967 g/m ²	296 lbs/msf	1445 g/m ²
THICKNESS	ASTM D5199	40 mils	1.0 mm	60 mils	1.5 mm
DENSITY	ASTM D792 or ASTM D1505	0.94 g/cm ³ (minimum)		0.94 g/cm ³ (minimum)	
*TENSILE STRENGTH lbf/in. width (N/mm width)	ASTM D638/D6693 1. Tensile Strength at Break 2. % Elongation at Break	109 lbf/in. 411 %	19.1 N/mm 411 %	166.5 lbf/in. 404 %	29.2 N/mm 404 %
OXIDATIVE INDUCTION TIME (OIT)	ASTM D3895 Method A	> 100 min.		> 100 min.	
HIGH PRESSURE OIT (HPOIT)	ASTM D5885	> 400 min.		> 400 min.	
PUNCTURE RESISTANCE	ASTM D4833	91 lbf	405 N	141 lbf	627 N
*TEAR RESISTANCE	ASTM D1004	32 lbf	142 N	49 lbf	218 N
STRESS CRACK RESISTANCE	ASTM D5397	>1800 hrs		>1800 hrs	
LOW TEMP, IMPACT FAILURE TEMP	ASTM D746 Method B	Pass, 5 min @ -40°F		Pass, 5 min @ -40°F	
BENZENE PERMEANCE	See Note ¹	2.17E-10 m/s		1.45E-10 m/s	
TOLUENE PERMEANCE	See Note ¹	2.20E-10 m/s		1.47E-10 m/s	
ETHYLBENZENE PERMEANCE	See Note ¹	2.21E-10 m/s		1.47E-10 m/s	
M & P-XYLENES PERMEANCE	See Note ¹	2.21E-10 m/s		1.47E-10 m/s	
O-XYLENE PERMEANCE	See Note ¹	2.20E-10 m/s		1.47E-10 m/s	
CARBON BLACK DISPERSION	ASTM D5596	Pass - See Note ²		Pass - See Note ²	
CARBON BLACK %	ASTM D1603 or D4218	> 2.0 %		> 2.0 %	
PERMS	ASTM E96 Method A 73° F, 50% RH	< 0.0052 grains/(ft ² -hr-in-Hg)	< 0.0034 g/(24hr-m ² -mm Hg)	< 0.0042 grains/(ft ² -hr-in-Hg)	< 0.0028 g/(24hr-m ² -mm Hg)
FACTORY SEAM REQUIREMENTS					
BONDED SEAM STRENGTH	ASTM D6392 Mod.**	120 lbf/in.	534 N/cm	190 lbf/in.	845 N/cm
SEAM PEEL ADHESION	ASTM D6392 Mod.**	80 lbf/in.	356 N/cm	130 lbf/in.	578 N/cm

* Tests are an average of MD and TD directions.

** Raven Industries performs seam testing at 12" per minute.

¹ Aqueous Phase Film Permeance.
Diffusive Transport of VOCs through LLDPE and Two Coextruded Geomembranes, McWatters and Rowe, Journal of Geotechnical and Geoenvironmental Engineering © ASCE/September 2010. (Permeation is the Permeation Coefficient adjusted to actual film thickness)

² Carbon black dispersion (only near spherical agglomerates) for 10 different views: 9 in Categories 1 or 2 and 1 in Category 3

PRO-FORMA SHEET CONTENTS: The data listed in the Pro-Forma data sheet is representative of initial production runs. These values may be revised at anytime without notice as additional test data becomes available.



Absolute Barrier™ X-Series X40BAL and X60BAL are a seven layer, co-extruded membrane consisting of high density polyethylene (HDPE) with an effective barrier core-layer to provide superior resistance to gas transmission. HDPE provides excellent chemical resistance and durability for long term applications. A minimum carbon black content of 2.0% provides excellent protection from UV rays and harsh weather conditions.

Note: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. Chemical resistance, odor transmission, longevity as well as other performance criteria is not implied or given and actual testing must be performed for applicability in specific applications and/or conditions. RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage. Limited Warranty available at www.RavenEFD.com



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