

# ABSOLUTE BARRIER® X40BAL

HIGH PERFORMANCE HDPE/EVOH GEOMEMBRANE GAS BARRIER



## PRODUCT DESCRIPTION

Absolute Barrier® X-Series X40BAL is a seven layer co-extruded geomembranes consisting of a durable high-density polyethylene (HDPE) with an inner core of highly effective EVOH barrier resin, designed specifically as a barrier against odors, methane, radon, and VOCs. High strength HDPE provides excellent chemical resistance and durability. The combination of these highly effective resins provides unequaled barrier performance in demanding buried applications.

## PRODUCT USE

Absolute Barrier® X-Series X40BAL is designed to stop gas vapor migration on Brownfield sites, in residential and commercial buildings, along with geomembrane containment covers and systems for effective odor control. 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® performs extremely well preventing the degradation of EPS geofoam by protecting it from harsh VOCs including direct gasoline or diesel fuel contact.

Absolute Barrier® X-Series X40BAL is effective in buried landfill cap applications and are 50 to 400 times less permeable to VOCs than standard 80 mil HDPE geomembranes. Leachate contaminants and landfill odors/gases in municipal and hazardous waste landfills can migrate through standard HDPE contributing to both atmospheric and groundwater contaminations. Absolute Barrier® X40BAL provides an effective barrier against a wide range of VOCs including benzene, toluene, ethylbenzene, o-xylene and many others.

## SIZE & PACKAGING

Absolute Barrier® is available in 16' wide layflat rolls in various lengths. All panels are tightly rolled onto a heavy-duty core for ease of handling and time saving installation. Absolute Barrier® geomembranes are produced in the color black as standard and can be manufactured in other custom colors with minimum quantity order requirements.



Landfill Rainshed Cover

## PRODUCT

## PART #

ABSOLUTE BARRIER® ..... X40BAL

## APPLICATIONS

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



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## PRO-FORMA DATA SHEET - TYPICAL VALUES

		ABSOLUTE BARRIER® X40BAL			
		TYPICAL VALUES		MINIMUM VALUES	
PROPERTIES	TEST METHOD	IMPERIAL	METRIC	IMPERIAL	METRIC
WEIGHT		202 lbs/msf	1015 g/m <sup>2</sup>	188 lbs/msf	967 g/m <sup>2</sup>
THICKNESS	ASTM D5199	42 mils	1.1 mm	40 mils	1.0 mm
DENSITY	ASTM D792 or ASTM D1505	0.94 g/cm <sup>3</sup> (minimum)			
<sup>3</sup> TENSILE STRENGTH	ASTM D638/D6693 1. Tensile Strength at Break 2. % Elongation at Break	109 lbf/in. 411 %	19.1 N/mm 411 %	84 lbf/in. 350 %	10.5 N/mm 350 %
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	60 lbf	267 N
<sup>3</sup> TEAR RESISTANCE	ASTM D1004	32 lbf	142 N	28 lbf	125 N
STRESS CRACK RESISTANCE	ASTM D5397	>1800 hrs		1800 hrs	
LOW TEMP, IMPACT FAILURE TEMP	ASTM D746 Method B	Pass, 5 min @ -40°F			
BENZENE PERMEANCE	See Note <sup>6</sup>	8.79E <sup>-11</sup> m/s			
TOLUENE PERMEANCE	See Note <sup>6</sup>	1.23E <sup>-10</sup> m/s			
ETHYLBENZENE PERMEANCE	See Note <sup>6</sup>	9.63E <sup>-11</sup> m/s			
M & P-XYLENES PERMEANCE	See Note <sup>6</sup>	9.09E <sup>-11</sup> m/s			
O-XYLENE PERMEANCE	See Note <sup>6</sup>	8.60E <sup>-11</sup> m/s			
METHANE PERMEANCE	ASTM D1434	< 3.70E <sup>-13</sup> m/s			
CARBON BLACK DISPERSION	ASTM D5596	Pass - See Note <sup>7</sup>			
CARBON BLACK %	ASTM D1603 or D4218	> 2.0 %		2 %	
PERMS	ASTM E96 - Method A 73° F, 50% RH	< 0.0052 grains/(ft <sup>2</sup> ·hr·in·Hg)	< 0.0034 g/(24hr·m <sup>2</sup> ·mm Hg)	N/A	N/A
MAXIMUM USE TEMPERATURE		180° F	82° C	N/A	N/A

<sup>3</sup> Tests are an average of machine and transverse directions.

<sup>6</sup> 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)

<sup>7</sup> 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.



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Scan QR Code to download technical data sheets.

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](http://www.ravenefd.com)

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