

VI-20™ GEOMEMBRANE

HIGH-PERFORMANCE VAPOR INTRUSION BARRIER

DESCRIPTION

VI-20™ is a 7-layer co-extruded geomembrane made using high quality virgin-grade polyethylene and EVOH resins that provide unmatched impact strength as well as superior resistance to VOC vapor transmission. EVOH technology serves as a highly resilient underslab and vertical wall barrier designed to restrict methane, radon and other harmful chemicals. Applications for EVOH originated in the manufacturing of automotive fuel systems to control emissions of hydrocarbons, whose use was mandated by the US EPA and the CA Air Resources Board (CARB) to reduce VOC emissions.

APPLICATION

VI-20™ is a 20-mil, high performance poly-ethylene-EVOH copolymer geomembrane, specially designed for use as a VOC barrier when used in conjunction with LIQUID BOOT® spray-applied vapor intrusion membrane to minimize vapor intrusion and nuisance water (non-hydrostatic conditions) migration into buildings. VI-20™ is ideal for applications with chlorinated solvents, BTEX and other PAHs.

BENEFITS

- Polyethylene layers provide excellent chemical resistance and physical properties
- EVOH barrier technology provides superior protection against diffusion of chemicals when compared to typical HDPE geomembranes
- Manufactured at ISO 9001:2008 certified plant

INSTALLATION

For use as a component of the LIQUID BOOT® Plus system, VI-20™ geomembrane is rolled out on prepared sub-grade, overlapping seams a minimum of six inches (6"). The geomembrane is cut around penetrations so that it lays flat on the sub-grade and tight at all inside corners. A thin (20 mil) tack coat of LIQUID BOOT® ("A" side without catalyst) is sprayed within the seam overlap. Once the VI-20™ geomembrane is installed, penetrations are then treated with VI-20™ Detailing Fabric prior to installation of the LIQUID BOOT® spray-applied vapor intrusion membrane and ULTRASHIELD™ G-1000 protection course.



EVOH technology provided in VI-20™ geomembrane has been shown to have VOC diffusion coefficients 20 times lower than an 80 mil (2 mm) HDPE geomembrane.

PACKAGING

VI-20™ Geomembrane is available in the following packaging option:

- 10 ft. x 150 ft. (3 m x 45 m) Rolls

VI-20™ CHEMICAL & PHYSICAL PROPERTIES		
CHEMICAL PROPERTY	TEST METHOD	RESULT
Benzene Diffusion Coefficient	EPA Method 8260	$4.5 \times 10^{-15} \text{ m}^2/\text{s}$
Ethylbenzene Diffusion Coefficient	EPA Method 8260	$4.0 \times 10^{-15} \text{ m}^2/\text{s}$
m&p-Xylenes Diffusion Coefficient	EPA Method 8260	$3.7 \times 10^{-15} \text{ m}^2/\text{s}$
Methane Permeance	ASTM D1434	$< 1.7 \times 10^{-10} \text{ m}^2/\text{d} \cdot \text{atm}$
o-Xylene Diffusion Coefficient	EPA Method 8260	$3.7 \times 10^{-15} \text{ m}^2/\text{s}$
Radon Diffusion Coefficient	SP Test Method	$< 0.25 \times 10^{-12} \text{ m}^2/\text{s}$
Toluene Diffusion Coefficient	EPA Method 8260	$4.2 \times 10^{-15} \text{ m}^2/\text{s}$
PHYSICAL PROPERTY	TEST METHOD	RESULT
Membrane Composite Thickness	ASTM D5199	20 mil (0.5 mm)
Impact Resistance	ASTM D1709	2,600 g
Tensile Strength	ASTM E154 Section. 9	58 lbf/in (1.0 N/m)
Water Vapor Transmission	ASTM E154 & E96	0.004 grains/hr-ft ² (0.0028 g/hr-m ²)
Water Vapor Retarder Classification	ASTM E1745	Class A, B & C

Note: These are typical property values.

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