

LIQUID BOOT® 500 HIGH-PERFORMANCE VAPOR INTRUSION BARRIER

DESCRIPTION

LIQUID BOOT® 500 is a high-performance spray-applied, polymer-modified asphalt-based membrane which provides a barrier against vapor intrusion into structures. LIQUID BOOT® 500 is sprayed on to a substrate layer BASEFABRIC T-60. BASEFABRIC T-60 is a durable, non-woven geotextile made from high quality polypropylene that is installed directly onto the subgrade to provide a uniform substrate for the installation of LIQUID BOOT® 500 vapor intrusion barrier membrane system.

The LIQUID BOOT® 500 system combines the mechanical properties of BASE FABRIC T-60 with the vapor barrier performance properties of LIQUID BOOT® 500. LIQUID BOOT® 500 provides for an outstanding seal on seams, penetrations, and on terminations for the vapor barrier system.

APPLICATION

LIQUID BOOT® 500 is used under slabs to mitigate vapor intrusion on sites containing methane, radon, and low levels of volatile organic compounds (VOCs), chlorinated solvents, BTEX and other PAHs. LIQUID BOOT® 500 should not be used on foundation walls.

BENEFITS

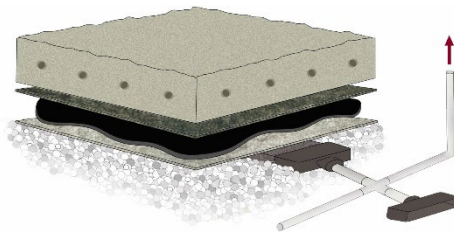
- Spray-application provides excellent sealing of penetrations, eliminating the need for mechanical fastening
- Seamless, monolithic membrane eliminates seaming-related membrane installation defects
- Unique formulation provides superior protection from methane gases and water vapor
- Fully adhered system reduces risk of gas migration
- Protection from methane gas, low levels of VOCs, chlorinated solvents and other contaminants

INSTALLATION

Protect all adjacent areas not to receive gas vapor barrier. Ambient temperature shall be within manufacturer's specifications. All plumbing, electrical, mechanical and structural items to be under or passing through the gas vapor barrier shall be secured in their proper positions and appropriately protected prior to membrane application. Gas vapor barrier shall be installed before placement of reinforcing steel. Expansion joints must be filled with a conventional waterproof expansion joint material. Surface preparation shall be per manufacturer's specification. Spray-apply a minimum thickness of 60 dry mils, unless specified otherwise. Refer to LIQUID BOOT® Installation Manual for further detailing and installation guidelines.

Install ULTRASHIELD™ G-1000 protection geotextile directly over the cured LIQUID BOOT® 500 barrier membrane, prior to the installation of the reinforced concrete floor slab.

As part of an overall gas vapor mitigation system, a sub-membrane gas vapor conveyance and ventilation system is recommended to be used in conjunction with LIQUID BOOT® 500 for non-hydrostatic conditions. The gas vapor collection and conveyance system can be GEOVENT or other piping system per project design.



LIQUID BOOT® 500 gas vapor barrier membrane system illustrated with the GEOVENT gas vapor conveyance and ventilation.

EQUIPMENT

- COMPRESSOR: Minimum output of 155–185 cubic feet per minute (CFM)
- PUMPS: For “A” drum, an air-powered piston pump of 4:1 ratio (suggested model: Graco, 4:1 Bulldog). For “B” drum, an air powered diaphragm pump (0–100 psi)
- HOSES: For “A” drum, ½” wire hose with a solvent resistant core (for diesel cleaning flush), hose rated for 500 psi minimum. For “B” drum, a 3/8” fluid hose rated at only 300 psi may be used
- SPRAY WAND: Only the spray wand sold by CETCO is approved for the application of LIQUID BOOT® 500
- SPRAY TIPS: Replacement tips can be purchased separately from CETCO



Spray applied LIQUID BOOT® 500 effectively seals the surface of BASEFABRIC T-60 and other irregular surfaces that are considered critical vapor intrusion pathways.

PACKAGING

BASEFABRIC T-60 is available in the following packaging:

- 15.5 ft. x 300 ft. (4.7 m x 91 m) Rolls

LIQUID BOOT® 500 is available in the following packaging options:

- 55 Gallon Drum
- 275 Gallon Tote

ULTRASHIELD™ G-1000 is available in the following packaging:

- 15 ft. x 180 ft. (4.5 m x 54.8 m) Rolls

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LIQUID BOOT® 500 CHEMICAL & PHYSICAL PROPERTIES		
CHEMICAL PROPERTY	TEST METHOD	RESULT
Benzene Diffusion Coefficient	Geokinetics	$3.4 \times 10^{-16} \text{ m}^2/\text{s}$
PCE Diffusion Coefficient	Geokinetics	$1.3 \times 10^{-13} \text{ m}^2/\text{s}$
TCE Diffusion Coefficient	Geokinetics	$9.1 \times 10^{-13} \text{ m}^2/\text{s}$
Radon Permeability	Tested by US Dept. of Energy	Zero permeability to Radon (222Rn)
Methane Permeance	ASTM D1434	< 20 ml /m ² •d•atm
PHYSICAL PROPERTY	TEST METHOD	TYPICAL RESULT
System Composite Thickness ²	ASTM D5199	165 mil (4.2 mm)
Barrier Membrane Composite Thickness ³	ASTM D5199	60 mil (1.5 mm)
Tensile Strength ³	ASTM D638	89 lbf/in (155 N/cm)
Tensile elongation ³	ASTM D638	>1,000 %
Puncture	ASTM E154	160 lb (710 N)
Water Vapor Retarder Classification	ASTM E1745	Class A, B & C
Water Permeance	ASTM E96-B	0.069 Perms
Environmental Stress Cracking Resistance	ASTM D1693	Passed 500 Hours
Microorganism Resistance (Soil Burial)	ASTM D4068	Passed
Oil Resistance	ASTM D543	Passed
Adhesion to Concrete	ASTM D903	>8 lbf/in

NOTE:

¹ System composite thickness includes 60 dry mils of LIQUID BOOT® 500 and 105 mils of ULTRASHIELD™ G-1000.

² Membrane composed of 60 mils of LIQUID BOOT® 500.

³ Elongation was measured for T60 component.

LIMITED WARRANTY

CETCO warrants its products to be free of defects. This warranty only applies when the product is applied by Approved Applicators trained by CETCO. As factors which affect the result obtained from this product, including weather, equipment, construction, workmanship and other variables are all beyond CETCO's control, we warrant only that the material herein conforms to our product specifications. Under this warranty we will replace at no charge any product proved to be defective within 12 months of manufacture, provided it has been applied in accordance with our written directions for uses we recommend as suitable for this product. This warranty is in lieu of any and all other warranties expressed or implied (including any implied warranty of merchantability or fitness for a particular use), and the Manufacturer shall have no further liability of any kind including liability for consequential or incidental damages resulting from any defects or any delays caused by replacement or otherwise. This warranty shall become valid only when the product has been paid for in full.

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