

LIQUID BOOT®

SPRAY-APPLIED GAS VAPOR BARRIER

PRODUCT DESCRIPTION

Liquid Boot® is specially formulated for use as a:

- Gas Vapor Barrier
- Damp Proofing Membrane

Damp proofing membrane is intended to provide a barrier to water in non-hydrostatic incidental water conditions. Liquid Boot® has been specially designed as an impermeable vapor membrane/barrier for projects that are situated on sites with volatiles, gases or contaminants in the soil. Liquid Boot® is manufactured to meet or exceed the minimum average values listed in the chart below.

BENEFITS

- Spray application provides excellent sealing of penetrations
- Seamless, monolithic membrane means no mechanical fastening required
- Protection from methane gas, VOCs, chlorinated solvents and other contaminates
- Also protects against water vapor

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. A minimum thickness of 60 dry mils, unless specified otherwise.

AVAILABILITY

Shipping is available from two convenient plant locations:

- CETCO, 1001 S Linwood Ave, Santa Ana, CA
- CETCO, 218 NE Industrial Park Rd, Cartersville, GA

Contact your local technical sales manager at: 714-384-0111 or 800-527-9948

PHYSICAL PROPERTIES

PROPERTIES	TEST METHOD	VALUE
Hydrogen Sulfide Gas Permeability	ASTM D1434	None Detected
Chemical Resistance: VOCs, BTEXs (tested at 20,000 ppm)	ASTM D543	Less than 1% weight change
Sodium Sulfate (2% water solution)	ASTM D543, D412, D1434	Less than 1% weight change
Acid Exposure (10% H2SO4 for 90 days)	ASTM D543	Less than 1% weight change
Radon Permeability	Tested by US Dept. of Energy	Ø permeability to Radon (222 Rn)
Chromate Exposure (10% Chromium6+ salt for 31 days)	ASTM E96	Less than 1% weight change
Air Infiltration	ASTM E283-91	0 cfm/sq. ft.
*Bonded Seam Strength Tests	ASTM D6392	Passed
*Micro Organism Resistance (Soil Burial)	ASTM D4068-88	Passed
*Methane Permeability	ASTM 1434-82	Passed
*Oil Resistance Test:	ASTM D543-87	Passed
*Heat Aging:	ASTM D4068-88	Passed
*Dead Load Seam Strength	City of Los Angeles	Passed
*Environmental Stress-Cracking	ASTM D1693-78	Passed
PCE Diffusion Coefficient	Tested at 6,000 mg/m3	2.74 x 10 ⁻¹⁴ m ² /sec
TCE Diffusion Coefficient	Tested at 20,000 mg/m3	8.04 x 10 ⁻¹⁴ m ² /sec
Benzene Diffusion Test	Tested at 43,000 ppm	2.90 x 10 ⁻¹¹ m ² /day

* Required Tests for membranes in the City of Los Angeles Methane Zone

PROPERTIES cont'd	TEST METHOD	VALUE
Soil Burial	ASTM E154-88	Passed
Water Penetration Rate	ASTM D2434	<7.75 x 10 ⁻⁹ cm/sec
Water Vapor Permeability	ASTM E96	0.24 perms
Water Vapor Transmission	ASTM E96	0.10 grains/h-ft ²
Toxicity Test	22 CCR 66696	Passed
Potable Water Containment	ANSI/NSF 61	NSF Certified for tanks >300,000 gal
Coefficient of Friction (with geotextile both sides)	ASTM D5321	0.72
Cold Bend Test	ASTM D146	Passed. Ø cracking at -25°F
Freeze-Thaw Resistance (100 Cycles)	ASTM A742	Meets criteria. Ø spalling or disbondment
Accelerated Weathering and Ultraviolet Exposure	ASTM D822	No adverse effect after 500 hours
Hydrostatic Head Resistance	ASTM D751	Tested to 138 feet or 60 psi
Elongation	ASTM D412	1,332% Ø reinforcement, 90% recovery
Elongation w/8 oz. non-woven geotextile both sides	ASTM D751	100% (same as geotextile tested separately)
Tensile Strength	ASTM D412	58 psi without reinforcement
Tensile Strength w/8 oz. non-woven geotextile both sides	ASTM D751	196 psi (same as geotextile tested separately)
Tensile Bond Strength to Concrete	ASTM D413	2,556 lbs/ft ² uplift force
Puncture Resistance w/8 oz. non-woven geotextile both sides	ASTM D4833	286 lbs. (travel of probe = 0.756 in)
Flame Spread	ASTM E108	Class A with top coat (comparable to UL790)
Electric Volume Resistivity	ASTM D257	1.91 x 10 ¹⁰ ohms-cm

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, work-manship 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.

PACKAGING

- 55 Gallon Drum
- 275 Gallon Tote

LIMITATIONS

- Do not allow materials to freeze in containers.
- Store Liquid Boot® at site in strict compliance with manufacturer's instructions.
- When applying material below 45°F, contact your local technical sales manager.

EQUIPMENT Contact CETCO for complete equipment specifications

- 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®.
- SPRAY TIPS: Replacement tips can be purchased separately from CETCO.