



WATERPROOFING

Vapor-Lock

Description

Carlisle's Vapor-Lock System utilizes the CCW-711-90 sheet membrane as a preformed first course on difficult-to-waterproof substrates such as lightweight structural concrete and wood. The CCW-711-90 sheet membrane is a 90-mil composite consisting of a self-adhering rubberized asphalt membrane laminated to high-strength, heat resistant woven polypropylene mesh. The woven mesh is designed to withstand high temperatures, allowing the membrane to become an integral reinforcement part of the CCW-500R Hot-Applied Membrane System.

The second course of the Carlisle Vapor-Lock System is the application of CCW-500. The CCW-500 is a single-component rubberized asphalt compound that forms a tough, flexible, monolithic membrane over the CCW-711 sheet membrane. The fast setup time speeds the completion of the waterproofing system.

The Vapor-Lock System is used to waterproof lightweight structural decks, inverted roof systems with steel decks covered by gypsum, DensDeck® or plywood. The Vapor-Lock System is also ideal for conventional waterproofing of split slabs, tunnels and plaza decks.

Installation

Surface Preparation: The substrate surface must be thoroughly clean, dry and free from any surface contaminants or cleaning residue that may harmfully affect the adhesion of the membrane.

Detailing and Flashing: Detail expansion joints per manufacturer's recommendation. Preferred Curb and Parapet Flashing Method (VL-5004A): Apply CCW Contact Adhesive at the juncture of all horizontal surfaces and vertical surfaces to the height indicated on the drawings (8" min. recommended), such as parapet walls, curbs, columns and all penetrations through the deck. Avoid puddles. Allow primer to dry for one hour minimum, eight hours maximum. Membrane will not properly adhere to wet primer. Apply 90 mils of CCW-500 membrane to cover primed areas. Install CCW-711-90 sheet membrane or uncured neoprene flashing into this first course of CCW-500 to cover the vertical section and extend 6" onto deck surface. Flashing installation may be done during crack and joint. Completely cover all flashing material during installation of the subsequent layers of CCW-500 membrane.

At the juncture of all horizontal surfaces to vertical surfaces, such as parapet walls, curbs, columns and all penetrations through the deck, apply CCW Contact Adhesive on the vertical sections to the height indicated on the drawings 8" min. recommended). Allow primer to dry. Apply the CCW-500 over the primed substrate. Install CCW-711-90-mil or over the CCW-500 to cover the vertical section and extend 6" onto the deck surface. Install CCW-500 Membrane over horizontal portion of flashing and onto the vertical portion during the field membrane

installation. Terminate flashing on wall per Carlisle 500-9 Details. Install CCW-500 Membrane over horizontal portion of flashing and onto the vertical portion during the field membrane installation.

Install Sure-Seal® EPDM, Sure-Seal FleeceBACK® 115-mil EPDM or Sure-Seal FleeceBACK 120-mil AFX TPO flashings in exposed areas per Carlisle recommendations. Apply a thin film of CCW Contact Adhesive in a four foot square area around drains. Allow primer to dry one hour minimum, eight hours maximum. Apply 90 mil of CCW-500 membrane to cover primed areas. Install a three foot square section of CCW-711-90 or uncured neoprene flashing over the drain and onto the deck. No splices or seams are allowed within three inches of the drain flange. Terminate the flashing under the clamping ring of the drain and cut away the inner portion of the flashing. Use firm pressure to press the flashing against the CCW-500 surface and ensure good adhesion. Do not interfere with weep holes.

Apply CCW Contact Adhesive to all surfaces to receive CCW-711-90 sheet membrane. Avoid puddles. Allow primer to dry for one hour minimum, eight hours maximum. Membrane will not properly adhere to wet primer.

Apply CCW-711-90 sheet membrane from low to high point, in a shingle fashion so that laps will shed water. Begin installation at low edge of deck overlapping horizontal portion of previously installed flashings. Overlap all edges at least 2 ½". End laps shall be staggered. Place sheet membrane carefully so as to avoid wrinkles and fishmouths. After installation, roll with a metal roller wrapped with a resilient material. Roller should be 18"-24" wide and weigh at least 100 lbs.

Heat CCW-500 membrane blocks in a twin wall kettle with continuous agitation (Caution: Do not exceed maximum safe operating temperatures of 375°F.) Apply a coat of CCW-500 Hot-Applied Membrane at a rate of 13 sq. ft. per gallon or as required to obtain an average thickness of 125 mils. Total thickness of the CCW Vapor-Lock System shall be 215 mils.

Apply CCW-500 at 125 mils over the CCW-711-90 flashing or uncured neoprene flashing.

Protection Course: The membrane must be protected from damage. Install CCW Protection Board H or HS while CCW-500 is still warm and tacky. CCW Protection Board shall be spliced together using CCW-500 for expanded warranties. Integrity testing can be performed with the protection board installed. Install CCW MiraDRAIN and CCW Root Barrier relative to the requirements of the designed overburden.

Testing: Test is required for all expanded warranties beyond the standard material warranty of horizontal applications. The test can be done with Electronic Vector Mapping or flood testing. Flood testing requires 2" minimum head of water for a period of 24 hours.

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Flood Test: Allow CCW-500 membrane to cool. Plug drains and provide barriers necessary to contain flood water. Flood surface with two inch head of water for 24 hours. Inspect for leaks and repair membrane if leaks are found. Retest after making repairs.

Repairs: In the event the CCW-500 Hot -Applied Liquid Membrane is damaged, clean the area with a cloth wet with mineral spirits, allow to fully dry and apply CCW-500 Hot-Applied Liquid Membrane to the damaged area

Coverage Rate

The following is a guide to estimate the amount of materials required for various membrane thicknesses.

215 mils applied = 1.53 lbs/ft² = 7.46 ft²/gal

125 mils applied = .89 lbs/ft² = 12.83 ft²/gal

90 mils applied = 0.64 lbs/ft² = 17.83 ft²/gal

Limitations

- Do not apply CCW-711-90 membrane if temperature is less than 25°F. Do not apply CCW-500 membrane if temperature is less than 0°F. Do not install waterproofing to a damp, frosty or contaminated surface.
- Alternate Substrates: Adequate structural support and the number, type and location of fasteners required to meet applicable codes should be determined and verified by the project engineer.
- Steel decking shall be 22 gauge minimum covered with 5/8" minimum fire-rated Type X gypsum board or approved equal.
- Wood decking shall be 1/2" minimum exterior grade tongue-and-groove plywood installed with the long dimension perpendicular to joists. All butt joints shall be supported by framing.

Warnings and Hazards

Use with adequate ventilation. Workers must use proper protection to prevent burns. Refer to the MSDS for important warnings and product information.

Packaging

CCW-500 is packaged in 45-lb. blocks, one block per carton, 64 cartons per pallet. Each block is sealed in a polyethylene bag inside the carton. The block, including the bag, is placed in the kettle, leaving only disposal of the carton.

CCW-711-90 sheet membrane is packaged in roll sizes of 12" x 45' (45 sq.ft.), 18" x 45' (67.5 sq. ft.), 24" X 45' (90 sq.ft.) and 36" x 45' (135 sq. ft.)

Standards

- US Patent # 5,979,133
- Canadian Specification CGSB-37.50-M89
- UL 790 Class A

Typical Properties

Property	Method	Typical Value
Solids Content	ASTM D1353	100%
Flow	ASTM D5329	Control <3 Post Heating <3
Penetration (1/10 mm)	ASTM D5329	Control @ 77°F=76 Control @ 122°F=124 Post Heating @ 77°F=72 Post Heating @ 122°F=108
Flash Point	ASTM D92	579°F (304°C)
Water Vapor Permeance	ASTM E96 (E)	1.2 ng/Pa·s·m ²
Elongation	ASTM D412	>1,000%
Toughness	CGSB-37.50-M89	8.5J
Ratio of toughness to peak load	CGSB-37.50-M89	0.044
Adhesion	CGSB-37.50-M89	Pass
Viscosity	CGSB-37.50-M89	Control - 6 Post Heating - 4
Water Absorption	CGSB-37.50-M89 max. 0.35g [gain]	0.32g
Pinholing	CGSB-37.50-M89	N/A
Low temperature flexibility	CGSB-37.50-M89	Pass
Low temperature crack bridging	CGSB-37.50-M89	Pass
Heat stability in viscosity, penetration, flow or low temp flexibility after aging	ASTM E 154	Pass
Resiliency	ASTM D3405	>60%
Resistance to mild acids		No effect
Minimum ambient temperature for application		0°F
Acid Resistance	ASTM D896	50% Sulfuric Acid w/o blistering, deterioration, delamination or re-emulsification
Sodium Chloride Resistance	ASTM D896	Passed 20% Sodium Chloride w/o blistering, deterioration, delamination or re-emulsification
Fertilizer Resistance	ASTM D896	Passed 30/10/10 Fertilizer w/o blistering, deterioration, delamination or re-emulsification

Limited Warranty

Carlisle Coatings & Waterproofing Incorporated (Carlisle) warrants this product to be free of defects in workmanship and materials only at the time of shipment from our factory. If any Carlisle materials prove to contain manufacturing defects that substantially affect their performance, Carlisle will, at its option, replace the materials or refund its purchase price. This limited warranty is the only warranty extended by Carlisle with respect to its materials. There are no other warranties, including the implied warranties of merchantability and fitness for a particular purpose. Carlisle specifically disclaims liability for any incidental, consequential, or other damages, including but not limited to, loss of profits or damages to a structure or its contents, arising under any theory of law whatsoever. The dollar value of Carlisle's liability and buyer's remedy under this limited warranty shall not exceed the purchase price of the Carlisle material in question.