SECTION 07 12 13

BUILT-UP ASPHALT WATERPROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES:

Installation of patented Vapor-Lock Reinforced hot-applied membrane waterproofing system on surfaces indicated on drawings, consisting of preparation of existing and repaired surfaces, sealing of cracks and joints, application of CCW-711-90 Sheet Membrane and CCW-500 Hot-Applied Membrane.

1.2 RELATED SECTIONS

A. Section 03 15 00 – Concrete Accessories/Expansion Joints
B. Section 03 30 00 - Cast-In-Place Concrete
C. Section 06 12 00 – Structural Panels/Wood Decking
D. Section 07 90 00 – Joint Sealers/Caulking and Sealants
E. Division 20 – Mechanical/Floor Drains and Standpipes
F. Division 25 – Electrical/Conduit and other Electrical

1.3 REFERENCES

A. ASTM applicable standards and test methods.
B. UL 790 Tests for Fire Resistance of Roof Materials.

1.4 SYSTEM DESCRIPTION

Product provided by this Section is a 215 mil thick, reinforced, hot-applied rubberized-asphalt membrane system, consisting of one layer of CCW-711-90 fabric-reinforced membrane and one layer of hot-applied rubberized-asphalt membrane.

1.5 SUBMITTALS

A. General: Submit in accordance with Section 01 30 00.
B. Product Data: Submit manufacturer's product literature and installation instructions.
C. Subcontractor’s approval by Manufacturer: Submit document stating manufacturer's acceptance of subcontractor as an Approved Applicator for the specified materials.
D. Warranty: Submit a sample warranty identifying the terms and conditions stated in Section 1.7.

1.6 QUALITY ASSURANCE

A. Applicator Qualifications: Applicator shall be experienced in applying the same or similar materials and shall be specifically approved in writing by the membrane manufacturer.
B. Regulatory Requirements: Comply with applicable codes, regulations, ordinances, and laws regarding use and application of products that contain volatile organic compounds (VOC).
C. Pre-Application Conference: Prior to beginning work, convene a conference to review conditions, installation procedures, schedules and coordination with other work.

1.7 WARRANTY

A. Provide a written, single-source warranty for all system components agreeing that during the warranty period to promptly make repairs or replacement of defective materials of the waterproofing system without additional cost to the owner.

B. The formation or presence of mold or fungi in a building is dependent upon a broad range of factors including, but not limited to, the presence of spores and nutrient sources, moisture, temperatures, climatic conditions, relative humidity, and heating/ventilating systems and their maintenance and operating capabilities. These factors are beyond the control of Carlisle and Carlisle shall not be responsible for any claims, repairs, restoration, or damages relating to the presence of any irritants, contaminants, vapors, fumes, molds, fungi, bacteria, spores, mycotoxins, or the like in any building or in the air, land, or water serving the building.

1.8 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to Project site in original, factory-sealed, unopened containers bearing manufacturer's name and label intact and legible with following information.
   1. Name of material.
   2. Manufacturer's stock number and date of manufacture.
   3. Material safety data sheet.

B. Store flashing, membrane, mastic and primer in a protected area out of direct sunlight. Protect from rain and physical damage.

1.9 PROJECT CONDITIONS

A. Do not apply CCW-711-90 membrane if temperature is less than 25ºF. Do not apply CCW-500 membrane if temperature is less than 0ºF. Do not install waterproofing to a damp, frosty or contaminated surface.

B. Coordinate waterproofing work with other trades. The applicator shall have sole right of access to the specified areas for the time needed to complete the application.

C. Protect adjoining surfaces not to be waterproofed against damage or soiling. Protect plants, vegetation and animals which might be affected by waterproofing operations.

D. Warn personnel against breathing of vapors and contact of material with skin or eyes. Wear applicable protective clothing and respiratory protection gear.

E. Keep flammable products away from spark or flame. Do not allow the use of spark producing equipment during application and until all vapors have dissipated. Post “NO SMOKING” signs.

F. Maintain work area in a neat and orderly condition, removing empty containers, rags, and rubbish daily from the site.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

Provide products manufactured and supplied by Carlisle Coatings and Waterproofing Incorporated 900 Hensley Lane, Wylie, Texas 75098, Phone: (800) 527-7092 Fax: (972) 442-0076.

2.2 PRODUCTS

A. Preformed sheet membrane: Shall be CCW-711-90 90 Mil Sheet Membrane with polypropylene fabric reinforcement.

B. Hot-applied liquid membrane: Shall be CCW-500 Hot Applied Membrane, rubberized asphalt compound, and shall meet or exceed the requirements of CGSB-37.50-M89.

2.3 ACCESSORY PRODUCTS

A. Flashings: Shall be CCW-711-90 90-Mil Flashing or CCW 60-mil uncured neoprene for non-exposed areas and Sure-Seal® EPDM Flashing for exposed areas.
B. Surface Primer: Shall be CCW-702 for CCW-711-90 membrane applications and CCW-702 under CCW-500 for flashing and detail applications.
C. Mastic: Shall be CCW-704 Mastic.
D. Sealants: Shall be CCW-703 Vertical-Grade LIQUISEAL® Membrane or CCW-201 two-component Polyurethane Sealant.
E. Backer Rod: Shall be closed-cell polyethylene foam rod.
F. Expansion Joints: Shall be the EJ-500
G. Protection Course: Shall be CCW Protection Board-H or HS.
H. Root Barrier: Shall be the CCW Root Barrier
I. Drainage Composite: Shall be CCW MiraDRAIN® as recommended by the manufacturer for each condition.
J. Insulation: Shall be extruded polystyrene insulation with a minimum 60 psi compressive strength as manufactured by Foamular or Dow.
K. Pavers: Where required, shall be as recommended and supplied by the membrane manufacturer.
L. Perimeter Drainage System: Where required, shall be CCW QuickDRAIN™.
M. H.P. Protective Mat shall be applied over insulation prior to ballast placement.

PART 3 - EXECUTION

3.1 INSPECTION

A. Before any waterproofing work is started the waterproofing applicator shall thoroughly examine all surfaces for any deficiencies. Should any deficiencies exist, the architect, owner, or general contractor shall be notified in writing and corrections made.
B. Condition of Concrete Surfaces:

1. The concrete surfaces shall be of sound structural grade, 3500 psi minimum, and shall have a smooth finish, free of voids, spalls, sharp protrusions or loose aggregate.
2. Concrete shall be cured by water curing method. Curing compounds must be of the pure sodium silicate type and be approved by the Carlisle representative.
3. Concrete shall be cured at least seven days and shall be sloped for proper drainage.
4. Voids exceeding 1/2", rock pockets and excessively rough surfaces shall be repaired with approved non-shrink grout or ground to match the unrepaired areas.
5. Two stage drains shall have a minimum three-inch flange and be installed with the flange flush and level with the concrete surface.
6. Surfaces at cold joints shall be on the same plane.

C. 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.
1. Steel decking shall be 22 gauge minimum covered with 5/8" minimum fire-rated Type X gypsum board or approved equal.
2. 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.

3.2 SURFACE PREPARATION

A. The substrate surface must be thoroughly clean, dry and free from any surface contaminates or cleaning residue that may harmfully affect the adhesion of the membrane.
B. Detail expansion joints per manufacturer's recommendation.
C. Flashing Method (VL-500-4A): Apply CCW-550 primer at the juncture of all horizontal surfaces and vertical surfaces to the height indicated on the drawings (eight inch min. recommended), such as parapet walls, curbs, columns and all penetrations through the deck at a rate of 400 sq. ft. per gallon. Avoid puddles. Allow primer to dry for one hour minimum, eight hours maximum. Membrane will not properly adhere to wet primer. Apply 60-90 mils of CCW-500 membrane to cover primed areas. Install CCW-711-90 mil sheet membrane or uncured neoprene flashing into this first course of CCW-500 to cover the

vertical section and extend six-inches onto deck surface. Flashing installation may be done during crack and joint treatment or during installation of the first layer of CCW-500 membrane. Completely cover all flashing material during installation of the subsequent layers of CCW-500 membrane. Terminate flashing on wall per Carlisle 500-9 Details.

D. Install Sure-Seal EPDM flashings in exposed areas per Carlisle recommendations (VL-500-4B). **Always clean and prime EPDM with EP-95 Splice Cement per Carlisle splice procedure prior to application of CCW-500 membrane.**

E. Apply a thin film of CCW-550 Primer in a four foot square area around drains. Allow primer to dry, one hour minimum, eight hours maximum. Apply 90 mils 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.

3.3 APPLICATION

A. Apply CCW-702 primer to all surfaces to receive CCW-711-90 Sheet Membrane at a rate of 300 sq. ft. per gallon. Avoid puddles. Allow primer to dry for one hour minimum, eight hours maximum. Membrane will not properly adhere to wet primer.

B. 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 2-1/2". End laps shall be staggered. Place sheet membrane carefully so as to avoid wrinkles and fish-mouths. After installation, roll with a metal roller wrapped with a resilient material. Roller should be 18" - 24" wide and weigh at least 100 lbs.

C. Heat CCW-500 Membrane blocks in a twin wall kettle with continuous agitation and apply between 375 to 395 F (*Caution: Do not exceed maximum safe operating temperature of 400°F.)*.

D. 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.

E. Apply CCW-500 over the CCW-711-90 sheet membrane and CCW-Uncured Neoprene Flashing.

F. Apply CCW Protection Board H or HS into the last course of CCW-500 and splice the protection board seams together with CCW-500.

3.4 INTEGRITY TESTING

A. Test is required for all expanded warranties beyond the standard material warranty of horizontal applications.

B. 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.

3.5 PROTECTION COURSE

A. Install CCW QuickDRAIN Perimeter Drainage System as the first course of drainage composite immediately after membrane has cured on vertical surfaces. Install CCW MiraDRAIN Drainage Composite.

B. Install CCW MiraDRAIN Drainage Composite 9000 or 9900 over CCW Protection Board-H or HS Protection Course immediately after flood testing on horizontal surfaces. If flood testing is delayed, install a temporary covering to protect the CCW-500 membrane from damage by other trades.

C. Apply the RMB 400 in planter areas covered with soil. Apply over Protection Board and beneath the MiraDRAIN. RMB 400 splices are a minimum of four inches and heat welded

Note: All fluid applied product application rates are based on theoretical coverage relative to the percentage of solids in the material. These are minimum application rates to achieve the required dry film thickness for the system and do not account for substrate condition or porosity. A thicker application of the product may be necessary to achieve the required dry film thickness for system relative to the substrate.

End of Section