

SECTION 07 13 26

SELF-ADHERING SHEET WATERPROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES:

Installation of sheet membrane waterproofing on surfaces indicated on drawings, consisting of preparation of existing and repaired concrete surfaces, sealing of cracks and joints, and application of CCW MiraDRI 860/861 Sheet Membrane Waterproofing.

1.2 RELATED SECTIONS

- A. Section 03 15 00 – Concrete Accessories/Expansion Joints
- B. Section 03 30 00 - Cast-In-Place Concrete
- C. Section 07 90 00 - Caulking and Sealants
- D. Division 04 - Masonry
- E. Division 20 – Mechanical/Floor Drains and Standpipes
- F. Division 25 – Electrical/Conduit and other Electrical

1.3 REFERENCES

- A. ASTM D 412 Tests for Rubber Properties in Tension
- B. ASTM E 154 Puncture Resistance
- C. ASTM E 96 (B) Water Vapor Transmission of Materials
- D. ASTM D 1970 Self-Adhering Polymer Modified Bituminous Sheet Materials
- E. ASTM D 882 Test Method for Tensile Properties
- F. ASTM D 3767 Practice for Rubber – Measurement of Dimensions
- G. ASTM D 751 Test Method for Coated Fabrics
- H. ASTM D 570 Test Method for Water Absorption of Plastics
- I. UL 790 Tests for Fire Resistance of Roof Covering Materials

1.4 SYSTEM DESCRIPTION

Product provided by this Section is a self-adhesive membrane of not less than 60 mils thickness, consisting of a rubberized asphalt membrane laminated to a 4 mil cross-laminated polyethylene film.

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. Upon completion and acceptance of the work required by this section, the manufacturer will issue a warranty agreeing to promptly replace defective materials for a period of 5 years.
- 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 materials in protected and well ventilated area.

1.9 PROJECT CONDITIONS

- A. Do not apply membrane when surface temperature is below or inclement weather conditions conflict with manufacturer's published requirements.
- 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 installation.
- C. Warn personnel against breathing of vapors and contact of material with skin or eyes. Wear applicable protective clothing and respiratory protection gear.
- D. 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.
- E. 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 CCW MiraDRI 860/861 Sheet Membrane Waterproofing as manufactured by Carlisle Coatings and Waterproofing Incorporated, 900 Hensley Lane, Wylie, Texas 75098, Phone: (800) 527-7092 Fax: (972) 442-0076.

2.2 PRODUCTS

- A. Self-Adhesive Sheet Membrane Waterproofing: Shall be CCW MiraDRI 860/861 consisting of a 56 mil rubberized asphalt membrane laminated to 4 mil cross-laminated polyethylene film, and shall meet or exceed the following requirements:
 - 1. Tensile Strength: 325 psi minimum, ASTM D 412
 - 2. Ultimate Elongation: 350% minimum, ASTM D 412
 - 3. Puncture Resistance: 60 lbs. minimum, ASTM E 154
 - 4. Permeance: 0.05 Perm maximum, ASTM E 96 (B)
 - 5. Low Temperature Flexibility: Unaffected at -45°F, ASTM D 1970, 1" mandrel
 - 6. Tensile to Film: 5000 psi, ASTM D 882
 - 7. Thickness: 60 mils, ASTM D 3767

8. Hydrostatic Head: 230 ft., ASTM D 751
 9. Water Absorption: 0.1% by wt., ASTM D 570
- B. For application temperatures between 25 and 65°F, use CCW-861 Sheet Membrane and CCW-702. For application temperatures above 40°F use CCW MiraDRI 860 sheet membrane and CCW-702, CCW-714 primer, or CCW-AWP.

2.3 ACCESSORY PRODUCTS

- A. Surface Primer: Shall be CCW-702LV Solvent-Based Contact Adhesive, 702WB or Cav-Grip.
- B. Mastic: Shall be CCW-704 Mastic.
- C. Sealants: Shall be CCW-703 Vertical Grade Liqueal⁷ Membrane, one component approved sealant by CCW, CCW-201 two-component Polyurethane Sealant or CCW LM-800XL
- D. Backing Rod: Shall be closed-cell polyethylene foam rod.
- E. Protection Course: Shall be CCW Protection Board-H or CCW 300H for horizontal surfaces or CCW Protection Board-V or CCW 200V for vertical surfaces.
- F. Drainage Composite: Shall be CCW MiraDRAIN[®] as recommended by the manufacturer for each condition.
- G. Perimeter Drainage System: Where required shall be CCW QuickDRAIN[™].

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 and shall have a smooth finish, free of fins, ridges, protrusions, rough spalled areas, loose aggregate, exposed course aggregate, voids or entrained air holes. Rough surfaces shall receive a well-adhered parget coat.
 2. Concrete shall be cured by water curing method. Any curing compounds must be of the pure sodium silicate type and be approved by the Carlisle representative.
 3. Concrete shall be cured at least 7 days and shall be sloped for proper drainage.
 4. Voids, 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 3 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.

3.2 SURFACE PREPARATION

- A. The concrete 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. Install a 3/4" face, 45 degree cant of CCW-201 Polyurethane Sealant or CCW LM-800XL at all angle changes and inside corners including penetrations through the deck, walls, curbs, etc.
- C. All cracks over 1/16" in width and all moving cracks under 1/16" in width shall be routed out to 1/4" minimum in width and depth and filled flush with an approved sealant by CCW or CCW-201 polyurethane sealant.
- D. All expansion joints less than 1" wide shall be cleaned, primed, fitted with a backing rod and caulked with CCW-201 Polyurethane Sealant. For larger joints, contact Carlisle representative.
- E. Allow all sealant to cure at least overnight.
- F. Stir Primer. Apply a thin film of primer 10" wide, centered over sealed cracks and joints, hairline cracks, and cold joints. Apply primer 8" on each side of all corners. Prime concrete around drain flanges. Allow primer to dry per manufacturer's recommendations.

- G. Install an 8" wide strip of CCW MiraDRI 860/861 centered over joints and cracks. Install a 12" wide strip of CCW MiraDRI 860/861 centered over the axis of all corners.
- H. Terminate membrane around drains per CCW MiraDRI 860 series details. Terminate the membrane under the clamping ring. Seal all edges with CCW-704 Mastic. Do not interfere with weep holes.

3.3 APPLICATION

- A. Priming: Clean surfaces to remove residual dust before priming. Stir primer. Apply by spray or roller at a rate recommended by manufacturer. Allow to dry per manufacturer's recommendation.
- B. Horizontal surfaces: Install sheet membrane from low to high point, so that laps will shed water. Overlap edge seams 2½", end laps 5". Stagger end seams. Roll in place with an 18 to 24" wide, 100 lb. (min.) resilient roller. Ensure that all laps are firmly adhered and that there are no gaps or fishmouths.
- C. Vertical Surfaces: Apply in lengths of 8' or less. Overlap edge seams 2½". On walls over 8' high, apply in 8' sections, starting at the lowest point with the higher section overlapping the lower section 5". Roll in place using firm pressure with a hand roller.
- D. Terminations: Consult Carlisle 860-9 Details for proper terminations. Roll terminating edges firmly. Apply CCW-704 mastic to all terminations and >T= joints. Apply CCW-704 Mastic or CCW-703-V Liqueiseal to laps at angle changes, extending 9" in each direction.

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. VERTICAL APPLICATION:
Install CCW QuickDRAIN Perimeter Drainage System as the first course of drainage composite immediately after membrane has been installed on vertical surfaces. Install CCW MiraDRAIN Drainage Composite (consult CCW for recommendation), CCW Protection Board-V Protection Course or CCW 200V on remainder. Stop drainage composite 6" below final grade level.
- B. HORIZONTAL APPLICATION:
Install CCW MiraDRAIN Drainage Composite (consult CCW for recommendation) or CCW Protection Board-H Protection Course or CCW 300HV immediately after flood testing on horizontal surfaces. If flood testing is delayed, install a temporary covering to protect the CCW MiraDRI 860/861 membrane from damage by other trades.

End of Section