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## MANUFACTURER'S GUIDE SPECIFICATIONS

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# **SECTION 07 14 16.11 COLD, FLUID-APPLIED WATERPROOFING**



**SECTION 07 14 16.11****COLD, FLUID-APPLIED WATERPROOFING****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Fluid-applied membrane waterproofing and accessory products by Carlisle Coatings & Waterproofing
- B. Materials and their installation as indicated on drawings, for primarily-vertical, below-grade, foundation wall surfaces, consisting of [Note to Specifier: incorporate one of these sub-paragraphs into this paragraph]:
  - 1. [Waterproofing only] waterproofing membrane fully-adhered to substrate with overlying protection board from the same manufacturer. Waterproofing membrane provides barrier to water under hydrostatic head, while protection board protects the membrane during backfill.
  - 2. [Waterproofing plus drainage] waterproofing membrane fully-adhered to substrate and overlying drainage composite with perimeter drainage system, all from the same manufacturer. Waterproofing membrane provides barrier to water under hydrostatic head, while drainage materials remove hydrostatic pressure from waterproofing membrane while also serving as a protection course during backfill.
  - 3. [Waterproofing plus insulation] waterproofing membrane fully-adhered to the substrate with overlying board insulation from the same manufacturer. Waterproofing membrane provides barrier to water under hydrostatic head, while board insulation provides R-Value and serves as a protection course during backfill.
  - 4. [Waterproofing plus insulation and drainage] Consists of waterproofing membrane fully-adhered to the substrate plus overlying board insulation and overlying drainage composite and perimeter drainage system, all from the same manufacturer. Waterproofing membrane provides barrier to water under hydrostatic head, while board insulation provides R-Value. Drainage materials remove hydrostatic pressure from waterproofing membrane while also serving as a protection course during backfill

**1.02 RELATED SECTIONS**

- A. Division 03 – Concrete
- B. Section 04 20 00 – Unit Masonry
- C. Section 07 21 13 Board Insulation

- D. Section 07 90 00 Joint Protection
- E. Division 22 – Plumbing
- F. Division 26 – Electrical
- G. Division 31 - Earthwork
- H. Section [\_\_\_\_\_] Other

### 1.03 REFERENCES

- A. ASTM C 920 Standard Specification for Elastomeric Joint Sealants
- B. ASTM C 836 Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for use with Separate Wearing Course
- C. ASTM D 412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension
- D. ASTM D 903 Standard Test Method for Peel and Stripping Strength of Adhesive Bonds
- E. ASTM D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
- F. ASTM D 4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
- G. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials.

### 1.04 PERFORMANCE REQUIREMENTS

- A. Product provided by this Section shall be a water-based, rubberized asphalt emulsion which rapidly cures in place to provide a seamless waterproofing membrane.
- B. Product shall be solvent free, have VOC content of not more than 30 grams per liter and shall be free of noxious odors.
- C. Product, when applied at minimum 0.060 inch (60 mils) cured thickness, shall meet the following requirements:

REQUIREMENT	RESULT	TEST METHOD
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Water Vapor Permeance	Not more than 0.1 Perm	ASTM E-96, Method B
Tensile Elongation	Not less than 500 percent	ASTM D-412
Low Temperature Flexibility	No cracking, 180 degree bend over 1-inch mandrel at minus 20 degrees F	ASTM D 1970
Low-Temperature Crack Bridging	Withstand 10 cycles at minus 15 degrees F	ASTM C 836
Peel adhesion on HDPE film, concrete and concrete block	Not less than 10 lb per inch of width OR substrate failure	ASTM D 903
Pull adhesion on concrete and concrete block	Not less than 16 lb per square inch	ASTM D 4541

#### 1.05 SUBMITTALS

- A. Provide submittals in accordance with Section 01 33 00
- B. At bid submission, provide evidence to the Architect of installer qualification by Manufacturer.
- C. Shop drawings showing locations and extent of waterproofing and details of typical conditions.
- D. Manufacturer's technical data sheets and material safety data sheets for Product and Accessories.
- E. Manufacturer's installation instructions.
- F. Manufacturer's documentation of volatile organic compounds (VOC) content for Product and Accessories.
- G. Certification of compatibility by Manufacturer, listing all materials on the Project with which the Product and Accessories may come into contact.
- H. Samples, 3 inch by 4 inch minimum size, of cured Product.

#### 1.06 QUALITY ASSURANCE

- A. Installer shall be experienced in applying the same or similar materials and shall be specifically approved in writing by Manufacturer.
- B. Single-Source Responsibility: Obtain Product and Accessories from single manufacturer.
- C. Product and Accessories shall comply with all state and local regulations controlling use of volatile organic compounds (VOCs).

[Note to Specifier: Retain paragraph D for compliance with requirements of Carlisle's NVELOP™ Plus Warranty.]

- D. Comply with the provisions of the Owner's Building Envelope Commissioning program in accordance with Section 01 91 15.
- E. Pre-Installation/Construction Meetings: Convene [one] [\_\_\_\_\_] week prior to commencing Work of this section, in accordance with Section 01 31 19 - Project Meetings.
- F. Cooperate and coordinate with the Owner's inspection and testing agency. Do not cover any installed Product unless it has been inspected, tested and approved.

#### 1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver Product and Accessories to Project site in original packages with seals unbroken, labeled with Manufacturer's name, product name, lot number and directions for storage.
- B. Protect Product from freezing.
- C. Store Product and Accessories in their original, undamaged packages in clean, dry, protected location and within temperature range required by Manufacturer.
- D. Avoid spillage. Immediately notify Owner, [Architect] [Consultant] if spillage occurs and start clean up procedures. Clean spills and leave area as it was prior to spill.

#### 1.08 WASTE MANAGEMENT AND DISPOSAL

- A. Separate and recycle waste materials in accordance with Section 01 74 19 – Construction Waste Management and Disposal, and with the Waste Reduction Work Plan.
- B. Place materials defined as hazardous or toxic waste in designated containers.
- C. Ensure emptied containers are stored safely for disposal away from children.

#### 1.09 PROJECT CONDITIONS

- A. Do not apply Product or Accessories during rain or accumulating snowfall.

- B. Apply Product and Accessories within approved ambient and substrate temperature range stated in Manufacturer's literature.
  - C. Do not apply Product or Accessories over incompatible materials.
  - D. Observe safety and environmental measures indicated in Manufacturer's MSDS, and mandated by federal, state and local regulations.
- 1.10 WARRANTIES: Provide the Manufacturer's minimum [five] year material warranty under provisions of Section 01 78 36 – Warranties.

## PART 2 PRODUCTS

- 2.01 PRODUCTS: Provide as manufactured by Carlisle Coatings & Waterproofing, Incorporated. 900 Hensley Lane, Wylie, TX 75098. Phone 1-800-527-7092. Website <http://www.carlisle-ccw.com> :
- A. Spray-Grade: Barricoat™-S pourable consistency, water-based, polymer-modified asphalt
  - B. Roller-Grade: Barricoat™-R paste consistency, water-based, polymer-modified asphalt
- 2.02 ACCESSORIES: Provide as manufactured by Carlisle Coatings & Waterproofing, Incorporated:
- A. Co-Spray: Barricure™ chloride-free liquid concentrate.
  - B. Transition Membrane: 60 mil thickness self-adhering waterproofing membrane strips provided in rolls of various widths. Select either:
    - 1. MiraDRI 860 Strips
    - 2. MiraDRI 861 Strips
  - C. Reinforcing Fabric: DCH Reinforcing Fabric woven, white polyester provided in rolls of various widths.
  - D. Contact Adhesive, select any:
    - 1. CCW-702 OR CCW-702 LV Solvent-Based
    - 2. CCW-702 WB Water-Based
  - E. Mastic, select either:
    - 1. LM 800 XL solvent-based synthetic rubber
    - 2. CCW-704 solvent-based rubberized asphalt
  - F. Fill Compound, select either:
    - 1. CCW-703 V Trowel-Grade Polyurethane, 2-part
    - 2. CCW-201 Non-Slump Polyurethane, 2-part

- G. Aerosol Contact Adhesive: CAV-GRIP™
- H. Drainage Composite: MiraDRAIN® as recommended by Manufacturer for the Project.
- I. Perimeter Drainage System: MiraDRAIN - HC®
- J. Protection Board: CCW Protection Board V
- K. Joint Sealant, select either:
  - 1. CCW-201 non-sag, 2-part polyurethane
  - 2. Product by others as approved by Manufacturer. Shall conform to ASTM C 920 Type 1 or 2, Grade NS, Class 25 or 50.
- L. Board Insulation, select either:
  - 1. Insulfoam BG expanded polystyrene, as manufactured by Insulfoam – A Carlisle Company. Available in various thicknesses and compressive strengths.
  - 2. Product by others, as approved by Architect
- M. Insulation Adhesive, select either:
  - 1. CAV-GRIP™
  - 2. Product by others as approved by board insulation and waterproofing membrane manufacturer.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- 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] [Contractor] shall be notified in writing and corrections made.
- B. Concrete shall be cured for a minimum of three days.
- C. Condition of Concrete Surfaces:
  - 1. The concrete surfaces shall be of sound structural grade, minimum of 2500 PSI compressive strength, and shall have a continuous surface, free of fins, ridges, voids or entrained air holes.
  - 2. Concrete shall be cured by water during method. Curing compounds must be of the pure sodium silicate type and be approved by the Carlisle representative or pass ASTM D 4263.
  - 3. Control joints and/or expansion joints shall have been properly installed at strategic points throughout the field of the deck to control cracking caused by deflection and shrinkage.

4. Voids, rock pockets and excessively rough surfaces shall be repaired with approved non-shrink grout or ground to match the unrepaired areas.
- D. Condition of Concrete Masonry Unit (CMU) Surfaces:
  1. Mortar joints shall be struck flush to face of concrete block.
  2. Voids and holes greater than  $\frac{1}{2}$  inch across shall be filled with mortar or non-shrink grout.
  3. Cracks, gaps and joints exceeding  $\frac{1}{4}$  inch width shall be filled with mortar or non-shrink grout.
  4. Surface irregularities exceeding  $\frac{1}{4}$  inch in height or sharp to touch shall be ground smooth or made flush.
  5. If surfaces cannot be made smooth to the satisfaction of the Architect, they shall be covered with a parge coat, typically consisting of one part cement to three parts sand, over area to receive fluid-applied waterproofing.
  6. Mortar droppings shall be removed from surfaces.
- E. Rough gaps around mechanical, electrical and similar penetrations shall be filled with non-shrink grout, mortar, Joint Sealant or Fill Compound and struck flush.
- F. Surfaces shall be sound, dry and free of oil, grease, form release agents, dirt or other contaminants.
- G. Honeycomb in concrete shall be filled with non-shrink grout or Fill Compound

### 3.02 SURFACE PREPARATION

- A. Prepare areas to receive Transition Membrane with Contact Adhesive. Contact Adhesive shall be provided at recommended coverage rate and visible for 1 inch minimum beyond edge of installed Transition Membrane.
- B. Install Transition Membrane according to Manufacturer's instructions in literature.
- C. Encapsulate Reinforcing Fabric as follows: Coat substrate with approximately 30 wet mils of Roller Grade Product, lay fabric into wet surface, coat fabric with approximately 30 more wet mils of Roller Grade Product.
- D. Apply Transition Membrane or Reinforcing Fabric encapsulated in Roller-Grade Product according to Manufacturers instructions and drawings in the following areas:
  1. Cold joints



2. Cracks
3. Expansion joints
4. Control joints
5. Inside/outside corners and other change in plane
6. Mechanical/electrical penetrations
7. Transition to different substrate.

### 3.03 INSTALLATION

- A. Allow materials used during surface preparation to cure fully before applying Product.
- B. Spray-Grade Product: Dispense in tandem with Co-Spray according to instructions in Manufacturer's literature.
- C. Roller-Grade Product: Apply according to according to instructions in Manufacturer's literature
- D. Cured membrane thickness shall measure a minimum of 0.060 inch (60 mils).
- E. Provide complete coverage without pinholes or voids. Apply greater thickness of Product as necessary to provide continuous coating over rough surfaces and irregularities.
- F. Allow Product to dry completely before application of Protection Board, Board Insulation or Drainage Composite

### 3.04 SCHEDULE

- A. Seal penetrations made through installed Product according to Manufacturer's instructions and drawings.
- B. Protection Board installed after Product: Attach to surface of Product with Aerosol Contact Adhesive.
- C. Board Insulation installed after Product: Install in accordance with Section 07 21 13 Board Insulation. Attach to surface of Product with Insulation Adhesive.
- D. Drainage Composite installed after Product: Install with fabric side facing soil and connect to Perimeter Drainage System according to Manufacturer's instructions and drawings. Use Aerosol Contact adhesive, to attach Drainage Composite to surface of Product or to surface of board insulation overlying Product.

- E. Backfill to permanently secure Drainage Composite, Board Insulation and Protection Board.
- F. Avoid damaging Product and Accessories during backfill.

### 3.05 REPAIR AND PROTECTION

- A. Protect from damage during application and remainder of construction period.
- B. Inspect before covering. Repair or replace damaged material according to Manufacturer's instructions and drawings.
- C. Product and Accessories are not designed for permanent exposure. Cover with Drainage Composite, Protection Board or Board Insulation and backfill as soon as schedule allows.
- D. Outdoor exposure of installed Product shall not exceed 30 days.

END OF SECTION