

**MiraFlex Membrane C - Acrylic Modified (Flexible) Cementitious Waterproofing**

(Specification writer shall choose the most appropriate section that applies to a given scope of work)

**SECTION 071614****PART 1 - GENERAL****1.1 SUMMARY**

- A. Provide all labor, materials, equipment and supervision as necessary to install an Acrylic Modified Latex Cement Waterproofing over **(new and/or existing)** horizontal, interior or exterior structures, as shown on the project drawings and as outlined in this specification.
- B. Following all applicable manufacturer's guidelines and application instructions shall be considered a requirement of this specification.
- C. Related Sections: **(Specification writer shall add, delete or amend, as deemed necessary)**
  - 1. Section 03 30 00 – Cast-in-Place Concrete
  - 2. Section.....

**1.2 REFERENCES (Specification writer shall add, delete or amend, as deemed necessary)**

- A. ASTM C 109: Standard Test Method for Compressive Strength of Hydraulic Cement Mortars.
- B. ASTM C 348 - Standard Test Method for Flexural Strength of Hydraulic Cement Mortars.
- C. ASTM C 321 - Standard Test Method for Bond Strength of Chemical-Resistant Mortars.
- D. ASTM E 96 - Standard Test Method for Water Vapor Transmission of Materials.
- E. ICRI Technical Guideline No.03732: Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays.

**1.3 SUBMITTALS (Specification writer shall add, delete or amend, as deemed necessary)**

- A. General: Submit ( ) number of copies each of the following items in accordance with the requirements of the Conditions of Contract and in Division 1 Specification Sections.
- B. Product Data: Submit manufacturer's technical data sheets, any applicable installation guidelines or recommendations, and material safety data sheets for each product included in this specification.
- C. Samples: For **initial selection**, submit manufacturer's standard color charts for review by the specification authority and owner's representative. For **final selection**, submit sample boards **(specification writer shall specify sample size)** to exhibit pattern, texture, color and finish of the decorative stampable concrete overlay system.
- D. Material certificates signed by the manufacturer certifying that the system complies with all requirements specified herein.
- E. Warranty: Submit a sample of the manufacturer's standard material warranty.
- F. Contractor Project Reference List: Contractor shall submit a minimum of 5 recently completed projects of a similar nature and include total contract value of completed work.

#### **1.4 QUALITY ASSURANCE**

- A. **Manufacturer Qualifications:** The manufacturer of the products specified in this section shall have a minimum of 5 years experience in the production of these types of products.
- B. **Contractor Qualifications:** The contractor installing the products specified in this section shall have a minimum of 3 years experience and have successfully completed no less than 5 projects similar in scope and complexity, and is acceptable to and has been trained by the manufacturer.
- C. **Substitutions:** Requests for the approval of any product other than those specified in this section must be submitted to the specifying authority two weeks prior to the bid, and shall include complete application specifications and physical characteristics. Any request after this date will not be accepted. Failure of performance requires immediate removal and replacement of unapproved substituted material with those originally specified at no cost to the owner, Architect, construction manager, or general contractor.

#### **1.5 DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials in original packages and containers with seals unbroken and bearing manufacturer's labels containing brand name, batch or lot numbers, and directions for storage and mixing with other components.
- B. Store materials to comply with manufacturer's directions to prevent from damage and/or deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects.

#### **1.6 PROJECT CONDITIONS**

- A. **Environmental Conditions:** Comply with all the manufacturer's directions for maintenance of ambient and substrate temperature, moisture, humidity, ventilation, and other conditions required to execute and protect completed work. In hot and cold weather conditions or when high evaporation rates or adverse conditions may be expected, the contractor will be responsible for the quality of the completed installation. Follow all recommendations and guidelines of the American Concrete Institute, as published in ACI Committee 305 for Hot-Weather Concreting and ACI Committee 306 for Cold-Weather Concreting.
- B. **Lighting:** Permanent lighting will be in place and working before installing the system.

### **PART 2 – PRODUCTS**

#### **2.1 MANUFACTURERS**

- A. **Approved Manufacturer:** Miracote Division of Crossfield Products Corp., 3000 E. Harcourt Street, Rancho Dominguez, CA 90221, (310) 886-9100; also 140 Valley Road, Roselle Park, NJ 07204, (908) 245-2800, [www.miracote.com](http://www.miracote.com).

#### **2.2 MATERIALS**

- A. **Waterproofing Material - Acrylic Modified Cement Waterproofing:** Cementitious, two-component, acrylic emulsion based, highly flexible, crack bridging waterproof membrane barrier against positive water pressure, with the following characteristics:

## 2.3 PROPERTIES

- A. Physical Properties:
- |                                     |  |
|-------------------------------------|--|
| 1. Product:                         | Miracote MiraFlex Membrane C   |
| 2. Color:                           | Gray, White or Pigmented   |
| 3. Dry Component-A:                 | Unique blend of cementitious material  |
| 4. Liquid Component-B:              | White polymer emulsion and admixtures  |
| 5. Working Time:                    | Approximately 30 minutes   |
| 6. Shore A Hardness: (ASTM D-2240)  | ~ 85   |
| 7. VOC                              | 0 g/L  |
| 9. Bond/Adhesion: (ASTM C-321)      | 215 psi (1.5 MPa) @ 28 days  |
| 10. Tensile Strength: (ASTM D-638)  | 750 psi  |
| 11. Elongation: (ASTM D-638)        | 65%  |
| 12. Crack Bridging: (ASTM E-836)    | 1/8" opening @ 77°F.....Pass (No Rupture)  |
| 13. Vapor Permeability: (ASTM E-96) | .75 perm/inches  |
| 14. Waterproofing:(CRD C 48-92)     | Withstands 200 psi = 460 feet (14 bar = 140 m) hydrostatic pressure (positive side) at 3/32" (2.4 mm) thickness. |

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine all construction substrates and conditions under which waterproofing materials are to be installed. Do not proceed with the waterproofing application until unsatisfactory conditions are corrected.
- B. Do not proceed with the work until all such deficiencies have been corrected by the Contractor in an acceptable manner, and as approved by the Specifying Authority.

### 3.2 PREPARATION

- A. Protect all surrounding areas, walls, window glass, landscaping and other adjacent surfaces from the execution of each item of work including, but not limited to, surface preparation and all application steps.
- B. Substrate preparation:
1. Remove oil, grease, dirt, loose particles, remains of form oils, water repellents, rust or other coatings by high-pressure water blasting (>3000 psi), wet or dry sand blasting, or other mechanical means to produce surfaces suitable for application of waterproofing.
  2. Follow manufacturer's instructions to clean and prepare surfaces and seal cracks and joints.
  3. Voids in concrete substrates: 1/4-inch (6 mm) diameter and larger, pre-treat with patching compound. Less than 1/4-inch (6 mm) diameter can be filled with a scratch coat of one-component waterproofing material.
- C. Rinse surfaces to be waterproofed (excluding drywall or similar) with clean water to saturated surface dry (SSD) condition, with no standing water on horizontal surfaces.
- D. **(As an optional requirement for this project document the specification writer can include the following when deemed necessary)** Contractor shall perform tensile bond tests, as directed by the Specification Authority, in accordance with International Concrete Repair Institutes (ICRI) Technical Guideline 03739, **Guide to Using In-Situ Tensile Pull-Off Tests to Evaluate Bond of Concrete Surface Materials.**

### 3.3 APPLICATION

- A. Mix two-component waterproofing material in proportions recommended by manufacturer.
- B. Cavity fill, honeycombs & formtie holes:
  - a. Fill voids at cleaned and prepared faulty construction joints, cracks, formtie holes, etc. with patching compound in mortar consistency flush to surface.
  - b. Laminate patching compound in 2 to 3 layers as per manufacturer's instructions for larger, spalled or honeycombed areas.
- C. Detailing horizontal and vertical construction joints and cracks (positive side waterproofing only):  
Install joint and crack sealing Fabric, embedded in waterproofing material as follows:
  - 1. Apply two-component waterproofing material by brush in a six to seven inch (15 – 18 cm) wide strip coat centered over all joints, cracks, penetrations and changes of plane to be fabric.
  - 2. While this coat is still wet, unroll joint sealing fabric into the coating and apply a coat of two-component waterproofing material over the fabric, smoothing out wrinkles and fish mouths.
- D. Positive Side Waterproofing:  
Apply two-component waterproofing material in quantities and number of coats as per manufacturer's specifications and recommendations:
  - 1. Apply at 60 mils or 1/16" (1.5 mm) total thickness for all standard applications (i.e. foot traffic, balconies (non-tiled), etc.) and waterproofing up to 13 ft (4.0 m) water head.
  - 2. Apply at 80 - 90 mils (2.0 - 2.4 mm) total thickness for applications exposed to hydrostatic pressure (>13 ft (>4.0 m) water head), under tiles, plaza decks, etc.
- E. Alternative I: Negative Side Waterproofing:  
Follow manufacturer's specifications and instructions for below grade structures (i.e. water and waste water tanks, swimming pools and gutters, basement and retaining walls) where infiltration from ground water is expected:
  - 1. Apply 1<sup>st</sup> (base) coat one-component waterproofing material at 60 mils (1.6 mm)
  - 2. After 24 hrs waiting period, apply 2<sup>nd</sup> (top) coat two-component waterproofing material at 60 mils (1.6 mils) as soon as base coat has reached initial set.
- F. Alternative II: Horizontal surfaces with protective clear acrylic sealer:
  - a. 1 coat application: 200 – 300 sq.ft./gal (4.9 – 7.4 m<sup>2</sup>/L.
  - b. 2 coat application: 350 – 450 sq.ft./gal (8.6 – 11.0 m<sup>2</sup>/L.
- H. Application considerations:
  - 1. Apply, using stainless steel trowel, brush, short nap roller, or appropriate compressed-air spray equipment.
  - 2. Apply only when surface and ambient temperatures are 40°F (5°C) and rising. At high temperatures (i.e. 86°F (30°C) and above) protect application from direct sun and wind to prevent premature surface drying and shrinkage cracks. Apply material in two coats minimum.
  - 3. Application thickness should not exceed 1/8-inch (120 mils (3 mm)).
  - 4. If needed, such as in zones posed to movement or cracking, plaza decks, etc., the waterproofing material can be additionally reinforced with a reinforcing fabric (supplied by waterproofing manufacturer), embedded between two waterproofing layers.

5. Do not bridge cracks greater than 1/16-inch (1.5 mm).
6. Bridge dynamic cracks or joints with elastomeric joint sealing fabric, as supplied by waterproofing manufacturer.
7. Do not overcoat waterproofing material with solvent-based materials.
8. Where a uniform color is desired (i.e. balconies, walkways, etc.), use of ColorPax LIP or MiraGard Colorbond XL is recommended.
9. Prime and protect alkali sensitive metals such as copper, aluminum, galvanized or zinc treated metal first with a primer, before over-coating with waterproofing material. Follow manufacturer's recommendations for primer material.

### **3.4 CLEANING**

- A. Clean work area and remove/discard all debris resulting from the application of the system to the acceptance of the specifying authority or the owner.

### **3.5 PROTECTION**

- A. Protect all completed work of the application during the specified cure time of the material from vehicular or pedestrian traffic, or any exposure to solid or liquid spillage or any other form of contamination.

**END OF SECTION**