

SECTION 07 18 13
PEDESTRIAN TRAFFIC COATINGS

PART 1 - GENERAL

1.1 SUMMARY (Specification writer shall add, delete or amend, as deemed necessary)

- A. Provide all labor, materials, equipment and supervision as necessary to install a multi-component, waterproof pedestrian traffic coating system consisting of an elastomeric waterproofing membrane layer, cementitious wearing course, and finished acrylic color topcoat (**with an optional clear acrylic sealer**) on (**new or existing**) horizontal concrete deck slabs, 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 03 35 00 – Concrete Finishing
 - 3. Section 03 39 00 – Concrete Curing
 - 4. Section 07 92 00 – Joint Sealants

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

- A. ASTM C109: Standard Test Method for Compressive Strength of Hydraulic Cement Mortars.
- B. ASTM C190: Method of Test for Tensile Strength of Hydraulic Cement Mortars.
- C. ASTM C580: Standard Test Method for Flexural and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing's, and Polymer Concretes.
- D. ICRI Technical Guideline No. 310.2 – 1997 (formerly 03732): Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays.
- E. ICRI Technical Guideline No. 210.3 – 2004 (formerly 03739): Guide to Using In-Situ Tensile Pull-Off Tests to Evaluate Bond of Concrete Surface Materials.

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, available shop drawings, applicable installation guidelines or recommendations, and material safety data sheets for each product and/or composite system included in this specification.
- C. Material and Mock-up Samples: For **initial selection**, submit manufacturer's standard color charts or cured material samples for review by the specification authority and owner's representative. For **final selection**, submit sample boards or perform mock-ups (**specification writer shall specify sample size**) to exhibit pattern, texture, color and finish of the pedestrian traffic coating system.
- D. Material certificates signed by the manufacturer certifying that all components of the pedestrian traffic coating system comply with all requirements specified herein.
- E. Warranties: Submit a sample of the manufacturer's standard material warranty and the contractor's standard labor warranty.

- F. Project Reference List: Contractor shall submit a minimum of 5 recently completed projects that entailed a similar scope of work and include total contract value.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: The manufacturer of the products specified in this section shall have a minimum experience of 5 year in the production of these types of products.
- B. Contractor Qualifications: The contractor installing the products specified in this section shall have a minimum experience of 3 years 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: As required, permanent lighting will be in place and working before installing the proposed pedestrian concrete deck coating system.
- C. Protection: Protect newly installed pedestrian deck coating system from rain or other potentially harmful climatic conditions for a minimum of 24 hours, and damage associated with foot or vehicular traffic and/or from the work of other trades.

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.

2.2 MATERIALS

- A. Miraflex XL (fabric-reinforced pedestrian deck coating system) is a multi-layered, highly flexible, fracture-resistant, waterproofing membrane system consisting of a primary elastomeric waterproofing layer, a cementitious protective wear course, and colored acrylic top coat with optional clear acrylic sealer.

B. System Components:

1. MiraFlex Membrane C - Two-component cementitious, fluid-applied primary waterproofing layer.
2. Miracote Poly Fabric – 10” wide polypropylene fabric for crack and transition reinforcement.
3. Miracote MPC – Two-component, polymer-modified, cementitious, protective wear course.
4. MiraGard Colorbond XL – Single component, self-crosslinking, pigmented acrylic top coat.
5. MiraGard HDWB Sealer – Single component, self-crosslinking, clear acrylic sealer (optional).

2.3 PROPERTIES

A. MiraFlex Membrane C Physical Properties:

Provide a two-component, SBR polymer-modified, highly flexible, and crack-bridging cementitious waterproofing membrane that meets or exceeds the listed minimum physical property requirements.

Two Component Product	Liquid Polymer and Bagged Powder
Bagged Powder Color:	Gray and White
Liquid Polymer Type:	Styrene Butadiene Co-polymer
Working Time:	30 – 45 minutes
Elongation (ASTM D 638)	65%
Tensile Strength (ASTM D 638)	750 psi (7 days dry / 21 days wet)
Adhesion to Peel in Concrete:	8.3 lbs./in. width
Moisture Vapor Transmission (ASTM E 96)	2.5 grams (g/sq. meter/24 hrs.)
Water Vapor Permeability (ASTM E 96):	0.75 perms/inch
Impact Resistance: (MIL-3134) Para. 4.7.3	No cracking or detachment

B. Miracote Poly Fabric Physical Properties:

Provide polypropylene, 10” wide, open weave reinforcing fabric for crack and transition zones.

Type:	Polypropylene
Compatibility:	Alkaline Resistant
Weave:	Open woven mesh

C. Miracote MPC Physical Properties:

Provide a two-component only, liquid polymer-modified, flexible, cementitious protective wearing course that meets or exceeds the listed minimum physical property requirements when tested in accordance with the referenced standard test method.

Two Component System	Liquid Polymer and Bagged Powder
Compressive Strength (ASTM C 109):	2,440 psi
Tensile Strength (ASTM C 190):	450 psi
Flexural Strength (ASTM C 580)	2,415 psi
Adhesion (MIL-D-3134, Para.4.7.14):	515 psi
Water Absorption (ASTM C 642)	1.61% (volume of permeable voids 5.07%)

Water Vapor Permeability (ASTM E 96):	1.96 perms/inch
Impact Resistance: (MIL-3134) Para. 4.7.3 (2# steel ball dropped from 8' height onto coated steel plate)	No cracking or detachment
Flammable Properties (ASTM E 84):	Flame spread – 4 Smoke Density – 0
Fire Resistance (UL 790):	Complies as Class A
D. Physical Properties: MiraGard Colorbond XL	
Vehicle Type:	Self-crosslinking acrylic copolymer
Gloss Meter 60:	>75+
Cleaning Solvent:	Water
Curing Time (77 F):	
Dry to Touch:	1 hour
Recoat	2 - 4 hours
Traffic Exposure	24 hours
Accelerated UV Light Exposure:	
Desert Sunshine Exposure Test “Procedure EMMA”	No effect @ 10X Magnification
E. Physical Properties: MiraGard HDWB Sealer	
Vehicle Type:	Self-crosslinking acrylic copolymer
Cleaning Solvent:	Water
Curing Time (77 F):	
Dry to Touch:	30 minutes
Recoat	1 hour
Traffic Exposure	24 hours
Hot Tire Resistance	7 days

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine all applicable construction substrates and conditions where the horizontal pedestrian deck coating system is to be installed. Notify the Specifying Authority of any unsatisfactory conditions that may be detrimental to the proper and timely completion of the work.
- 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 involved in the installation of the pedestrian deck coating system.
- B. Perform surface and crack repairs as necessary to re-profile, re-level or to restore the integrity of the concrete substrate or other surfaces in general, as directed by the specifying authority. Concrete surface repair products shall be from the same manufacturer, or as approved by the manufacturer of the deck coating system specified herein. Provide letter from the manufacturer of the surface repair materials verifying compatibility with the specified pedestrian deck coating system.
- C. Pedestrian deck coating system must be applied to a clean, sound and mechanically prepared concrete substrate to a minimum (**Specification writer shall choose between CSP-3 or CSP-4**) surface profile, in accordance with the International Concrete Repair Institutes (ICRI) Technical Guideline No. 310.2 - 2013, **Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings and Polymer Overlays**.
- 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 No. 210.3 - 2004 (formerly 03739), **Guide to Using In-Situ Tensile Pull-Off Tests to Evaluate Bond of Concrete Surface Materials**.

3.3 APPLICATION

- A. General: Follow all manufacturers' directions, as published in their product technical data sheets and/or available installation guidelines regarding the application of the cementitious pedestrian deck coating system, as specified herein.
- B. Joint Sealants: At the direction of the specifying authority, install backer rod and polyurethane sealant at joints, transitions, and penetrations. Detail all existing concrete slab cracks in accordance with manufacturer's installation guidelines.
- C. Detailing: Apply a detail coat of MiraFlex Membrane C at all vertical and horizontal transitions, cracks, construction joints, pipe and drain penetrations, changes of plane and any other discontinuities that could undermine waterproofing integrity. Perform all detailing cracks and cold joints noted above as per manufacturers published IG (Installation Guideline) for MiraFlex XL Pedestrian Waterproof Deck Coating.
- D. Priming: No special primers are required. Concrete and other porous or absorptive substrates must be thoroughly wetted down to a near saturated condition with no standing water at the time of application.
- E. Waterproofing Membrane Layer: Apply a base coat of MiraFlex Membrane C at a coverage rate of 160 SF per unit (32 mils wft). Roll material out over the concrete deck surface in one direction, and over all previously detailed transitions, penetrations, changes of plane, construction joints and cracks. When thoroughly dry, apply the second coat of MiraFlex Membrane C in a converse direction and at the same coverage rate and manner as the first coat.
- F. Protective Wear Course: Within 12 to 24 hours after application of the second coat of the membrane layer, apply two coats of Miracote MPC at a rate of 500 SF per coat for each fully mixed unit for a total minimum thickness of 1/16" (approximately 62.5 mils). The MPC protective wear course shall be applied in strict conformance to the most current version of the manufacturer's published installation guidelines and technical instructions.
- G. Acrylic Topcoat: When protective wear course is thoroughly dry (between 12 to 24 hours), apply two coats of MiraGard Colorbond XL by roller, brush or spray at a rate of 250-300 SF per gallon per coat. As an alternate for the second coat of pigmented acrylic topcoat, MiraGard HDWB Sealer may be used as an

optional clear acrylic substitute to enhance stain resistance.

- H. Allow completed pedestrian deck coating system to cure for 24 hours before subjecting to foot traffic.

3.4 CLEANING

- A. Clean work area and remove/discard all debris resulting from the application of the mechanical equipment room flooring 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

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