

(Specification writer shall choose the most appropriate section that applies to a given scope of work, including but not limited to, the following listed sections)

**SECTION 03 01 30
RESURFACING OF CAST-IN-PLACE CONCRETE
or
SECTION 03 01 40
RESURFACING OF PRECAST CONCRETE
or
SECTION 03 01 50
RESURFACING OF CAST DECKS AND UNDERLAYMENT**

PART 1 – GENERAL

1.1 SUMMARY

- A. Provide all labor, materials, equipment and supervision as necessary to install a two-component, polyacrylate resin composition underlayment as scheduled on the drawings and/or specified herein, 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. ASTM D4263: Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Test Method.
- E. ASTM F1869-04: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Sub-floor Using Anhydrous Calcium Chloride.
- F. 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. LEED Submittals:
 - 1. Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, submit documentation indicating percentages by weight of post-consumer and pre-consumer recycled content.
 - a. Include statement indicating costs for each product having recycled content.
 - b. Include LEED Product Information Form for LEED Credits MR 4.1 and 4.2.
 - 2. Product Data for Credit EQ 4.2: For field applied, interior, paints coatings and primers, include printed statement of VOC content indicating compliance with Credit requirements.
 - a. Include LEED Product Information Form for LEED Credit EQ 4.2.
 - 3. Provide additional documentation for products as required to achieve each Credit(s).
- D. Samples: For **initial selection**, submit manufacturer's standard color charts for review by the specification authority and owner's representative.
- E. Material certificates signed by the manufacturer certifying that the polyacrylate resin composition underlayment system complies with all requirements of the material specified herein.
- F. Warranty: Submit a sample of the manufacturer's standard material warranty.
- G. 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 two-component, polymer-modified cementitious architectural resurfacing system.
- C. Protection: Protect newly installed underlayment from rain or other potentially harmful climatic conditions

for a minimum of 24 hours, from any potential damages due 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. Polyacrylate resin composition underlayment: Miracote MiraPatch RM I is a pre-packaged, two-component, polyacrylate, underlayment system that is applied in a nominal thickness from 1/16” to 3” on to properly prepared, new or existing, concrete substrates. **(Specification writer shall add, delete or amend, as deemed necessary to include other acceptable substrates such as, masonry, metal, wood and tile).** One unit of Miracote MiraPatch RM I consists of two gallons of MiraPatch RM I Liquid, and two 50# bags of MiraPatch RM I Powder.

2.3 PROPERTIES

- A. Physical Properties:
Provide polyacrylate system that meets or exceeds the listed minimum physical property requirements when tested according to the referenced standard test method in parentheses.

Compressive Strength (ASTM C109).....	5,140 psi.
Flexural Strength (ASTM C78).....	1,268 psi
Flexural Modulus of Elasticity (ASTM C580).....	2,415 psi.
Indentation (MIL PRF 3134).....	0.005" max.
Impact Resistance (Gardner Impact Tester).....	No chipping, cracking, or delamination and not more than 0.014" indentation
Adhesion (A.C.I. Comm. No. 503.1).....	>400 psi (100% failure in concrete)
Shear Bond Strength (ASTM C882).....	410 psi

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine all concrete or other substrates and conditions where the Polyacrylate resin composition underlayment 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 of the installation.

- B. Perform surface and crack repairs as necessary to re-profile, re-level or to restore the integrity of the concrete substrate 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 Polyacrylate resin composition underlayment system specified herein..
- C. Polyacrylate resin composition underlayment system must be applied to a clean, sound and mechanically prepared concrete substrate to a minimum (**Specification writer shall choose between CSP-3 to CSP-6**) surface profile, in accordance with the International Concrete Repair Institutes (ICRI) Technical Guideline 03732, **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 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 Polyacrylate resin composition underlayment system, as specified herein.
- B. Substrate Conditioning: Dampen substrate with potable water only. Maintain substrate at saturated surface dry (SSD) condition with no standing water or puddles during the placement of the bondcoat/primer.
- C. Priming: Apply bondcoat/primer over prepared substrate at manufacturer's recommended spreading rate.
- D. Body Coat: Over fresh bondcoat/ primer, trowel apply polyacrylate mortar mix at nominal thickness as specified; hand or power trowel. When cured, sand or grind if necessary to remove trowel marks or roughness.
(Note to Specifier: MiraPatch RM I Underlayment may be applied in any thickness from 1/16" to 3" thickness in one application, or any thickness in multiple applications for leveling or sloping as required, note on drawings specific application parameters.)

3.4 CLEANING

- A. Clean work area and remove/discard all debris resulting from the application of the Polyacrylate resin composition underlayment 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