

SECTION 09 67 23 - RESINOUS FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Resinous flooring systems.

B. Related Sections:

1. Refer to Division 01 Sections for requirements regarding:
 - a. LEED credit achievement goals as summarized by the LEED Scorecard attached to Section 01 81 13 "Sustainable Design Requirements."
 - b. Requirements for documentation of LEED credits.
 - c. Payment application requirements as they relate to LEED documentation requirements.
2. Section 09 66 23 "Resinous Matrix Terrazzo Flooring" for thinset, epoxy-matrix terrazzo.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site. Prior to the start of the Work, and at the Contractor's direction, meet at the Project site to review methods and sequence of installation, special details and conditions, standard of workmanship, testing and quality control requirements, job organization, and other pertinent topics related to the Work. The meeting shall include the Architect, Owner, Contractor, Contractor's Project Superintendent, Subcontractor's Superintendent, resinous flooring manufacturer's technical representative, and any other subcontractors whose work requires coordination with this work.

1.3 ACTION SUBMITTALS

- A. Product Data: Submit product data, specifications, installation instructions, and manufacturer's recommendations covering each material required for the work. Include manufacturer's certification and laboratory test reports as may be required to show compliance with Construction Documents.
- B. Sustainable Design Submittals:

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1. Completed "LEED Criteria Worksheet," for each component material of the product or assembly used in the installation of Work of this Section. Refer to Section 01 81 13 "Sustainable Design Requirements".
 2. Product Data: For coatings, indicating VOC.
 3. Laboratory Test Reports: For flooring products, indicating compliance with requirements for low-emitting materials.
- C. Samples for Verification: For each resinous flooring system required, 12 inches square, fully cured, exposed-finish materials, in colors required for work, applied to a rigid backing.
1. Include aggregate coating on samples.
 2. Provide "stepped" samples for systems utilizing multiple coats.

1.4 INFORMATIONAL SUBMITTALS

- A. Substrate Acceptability: Submit a certified statement issued by the manufacturer and countersigned by the applicator, attesting that all surfaces to receive resinous flooring have been found satisfactory for the reception of the coating, and are not in conflict with the "Warranty" requirements. Application of coating will be construed as acceptance of surfaces.
- B. Certification of Compliance: Furnish certified statement signed by the Contractor, the applicator and the resinous flooring manufacturer, attesting that the materials furnished conform to specified requirements. Certification shall be accompanied by laboratory test reports.
- C. Contractor's Review: Before commencing work submit written statement signed by Contractor, and the Applicator, stating that the Contract Documents have been reviewed with a qualified representative of the manufacturer of the resinous flooring system, and that they all are in agreement that the selected materials are proper, compatible and adequate for the application shown, and that the conditions and details are not in conflict with the Manufacturer's Warranty specified herein.
- D. Manufacturer's Acceptance: Upon completion of the Work submit a written statement signed by the manufacturer stating that the field supervision by the manufacturer's representative was sufficient to insure proper application of the materials, that the Work was installed in accordance with the Contract Documents and that the installation is acceptable to the manufacturer.
- E. Material Certificates: For each resinous flooring component, from manufacturer.
- F. Material Test Reports: For each resinous flooring system, by a qualified testing agency.

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1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For resinous flooring to include in maintenance manuals. Include recommendations for periodic inspections, cleaning, care, maintenance, and repair of resinous flooring.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing of resinous flooring similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required quantities.
- B. Installer Qualifications: A firm certified in writing by manufacturer as a licensed, trained, or approved installer. The firm shall have specialization in the installation of resinous flooring systems; have successfully installed resinous flooring work similar in design and extent to that required for the Project, in not less than three (3) projects of similar scope, to the satisfaction of the Architect; and whose work has resulted in construction with a record of successful in-service performance for a period of five (5) years.
- C. Single-Source Responsibility: Obtain resinous flooring materials from a single manufacturer. Obtain accessory products used in conjunction with resinous flooring from sources acceptable to resinous flooring manufacturer.
- D. Manufacturers Inspection: The Contractor shall arrange and pay for the manufacturer of the resinous flooring to inspect, test, and report on all work pertaining thereto. The Contractor shall arrange for the manufacturer's technical representative to perform the above duties at the start-up, and thereafter, until the completion of the resinous flooring work. The Contractor shall be responsible for carrying out all recommendations of the manufacturer's technical representative to ensure a total and complete installation of the resinous flooring work. The issuance of the manufacturer's final inspection report shall be made prior to the acceptance of the work by the Architect.
- E. Reports: Submit inspection reports.
- F. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Apply full-thickness mockups on 96-inch-square floor area selected by Architect.
 - a. Include 96-inch length of integral cove base with inside and outside corner.
 - 2. Simulate finished lighting conditions for Architect's review of mockups.

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3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Final Acceptance.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.
- B. Store materials in a clean, dry location protected from exposure to direct sunlight. In storage areas, maintain environmental conditions within range recommended in writing by manufacturer.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.
- B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.
- C. Close spaces to traffic during resinous flooring application and for 24 hours after application unless manufacturer recommends a longer period.
- D. Special Project Warranty: Submit special warranty in manufacturer's standard form signed by Installer and authorized representative of manufacturer, agreeing to repair or replace defective resinous flooring work against failures of materials or workmanship; including watertightness, degradation beyond normal wear; for the warranty period. Upon notification of such defective work, and within the warranty period, make the necessary repairs and replacements at the convenience to the Owner.
 1. Warranty Period: Five (5) years after date of Substantial Completion.

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Package Number: T5
Package Name: Terminal Interiors, M-P-E-FP, AV/IT,
Security, Signage, and Landscape
ACAA Project Number: TBD
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PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. It is required that resinous flooring be watertight and not deteriorate excessively for normal exposure, for normal pedestrian traffic in application intended, or manufacturer's recommended cleaning procedures, for the period of warranty.
- B. Flooring products shall comply with the requirements of the California Department of Public Health's (CDPH) "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Standard Method v1.2-2017.
- C. Flammability: Self-extinguishing according to ASTM D 635 or Class 1 according to ASTM E 648.

2.2 MANUFACTURERS

- A. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, from single source from single manufacturer. Obtain secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from manufacturer recommended in writing by manufacturer of primary materials.

2.3 RESINOUS FLOORING

- A. Resinous Flooring System: Abrasion-, impact-, thermal- and chemical-resistant, aggregate-filled, and urethane or polyurethane resin-based monolithic floor surfacing designed to produce a seamless floor and integral cove base.
 - 1. Location: As indicated on Drawing.
- B. Basis-of-Design Product: Subject to requirements, provide products indicated on Drawings, or comparable products, acceptable to the Architect, by one of the following:
 - 1. Dex-O-Tex; Tek-Crete SL.
 - 2. Stonhard; Stonclad UT.
 - 3. Dur-A-Flex; Poly-Crete MDB.
 - 4. BASF Corporation; Cementitious Urethane Flooring.
 - 5. SIKA Corporation USA; SIKAFLOOR PURCEM.
- C. System Characteristics:

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1. Color and Pattern: As selected by Architect from manufacturer's full range.
 2. Wearing Surface: Textured for slip resistance .
 3. Overall System Thickness: Manufacturer's recommended thickness.
 4. Federal Agency Approvals: USDA or FDA approved for food-processing environments.
- D. Waterproofing Membrane: Type recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated.
- E. Reinforcing Membrane: Flexible resin formulation that is recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated and that inhibits substrate cracks from reflecting through resinous flooring.
- F. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry substrate for resinous flooring application.
- B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, wax, and other contaminants incompatible with resinous flooring.
1. Do not use chemicals, including acid etching, sweeping compounds, solvents, or adhesive removers.
 2. Inspect, with Installer present, concrete substrates to be solid and structurally sound. Remove loose, spalled, deteriorated, or weak concrete substrate.
 - a. Repair spalls, cracks, expansion joints, control joints, divots, and open honeycomb, and fill in accordance with resinous flooring manufacturer's written recommendations.
 - b. Treat nonmoving substrate cracks with crack filler or elastomeric compound in accordance with resinous flooring manufacturer's written instructions.
 - c. Patching and Filling: Use patching and fill material to fill holes and depressions in substrates according to resinous flooring manufacturer's written instructions.
 3. Abrasive Surface Preparation: For areas requiring abrasive surface preparation as determined by resinous flooring manufacturer, prepare concrete substrates in accordance with the International Concrete Repair Institute Guideline 310.92 - 1997 "Selecting and Specifying Concrete Surface Preparation for Coatings, Sealers, and Polymer Overlays" (ICRI), Concrete Surface Profile (CSP), and manufacturer's CSP recommendation.

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- a. Prepare concrete substrate to "open" surface pores by means of light scarification, medium shot blast, or medium scarification with vacuum unit to achieve concrete surface profile. Limit grinding to areas not accessible by shot blast or scarification and as instructed in writing by resinous flooring manufacturer.
 - b. Provide CSP number as recommended by resinous flooring manufacturer.
 - c. Identify and repair non-compliant concrete substrates in accordance with resinous flooring manufacturer's written instructions.
4. Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.
- a. Anhydrous Calcium Chloride Test: ASTM F 1869. Proceed with application of resinous flooring only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1,000 sq. ft. of slab area in 24 hours.
 - b. Relative Humidity Test: Use in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
5. Alkalinity and Adhesion Testing: Verify that concrete substrates have pH within acceptable range. Perform tests recommended by manufacturer. Proceed with application only after substrates pass testing.
6. Refer to Section 09 61 43 "Vapor-Control Flooring Treatment" for slab vapor transmission control when moisture testing results exceeds flooring manufacturer's recommendations. Treat slab prior to underlayment and flooring assembly installation.
- C. Patching and Filling: Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.
1. Control Joint Treatment: Treat control joints and other non-moving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written instructions.
- D. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.
- E. Commencement of resinous flooring application indicates acceptance of substrate conditions by Installer.

3.2 INSTALLATION

- A. Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.
 1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.

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2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
 3. Expansion and Isolation Joint Treatment: At substrate expansion and isolation joints, comply with resinous flooring manufacturer's written instructions.
- B. Primer: Apply primer over prepared substrate at manufacturer's recommended spreading rate.
- C. Waterproofing Membrane: Apply waterproofing membrane over entire substrate surface, in manufacturer's recommended thickness.
1. Apply waterproofing membrane to integral cove base substrates.
- D. Reinforcing Membrane: Apply reinforcing membrane to entire substrate surface.
- E. Integral Cove Base: Apply cove base mix to wall surfaces before applying flooring. Apply according to manufacturer's written instructions and details, including those for taping, mixing, priming, troweling, sanding, and topcoating of cove base. Round internal and external corners.
1. Integral Cove Base: As indicated on Drawings.
- F. Self-Leveling Body Coats: Apply self-leveling slurry body coats in thickness indicated for flooring system.
1. Aggregates: Broadcast aggregates at rate recommended by manufacturer and, after resin is cured, remove excess aggregates to provide surface texture indicated.
- G. Troweled or Screeded Body Coats: Apply troweled or screeded body coats in thickness indicated for flooring system. Hand or power trowel and grout to fill voids. When body coats are cured, remove trowel marks and roughness using method recommended by manufacturer.
- H. Grout Coat: Apply grout coat, of type recommended by resinous flooring manufacturer, to fill voids in surface of final body coat.
- I. Topcoats: Apply topcoats in number indicated for flooring system and at spreading rates recommended in writing by manufacturer and to produce wearing surface indicated.

3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a site representative qualified by resinous flooring manufacturer to inspect substrate conditions, surface preparations, membrane assembly application; and to furnish reports to Architect.
- B. Material Sampling: Owner may, at any time and any number of times during resinous flooring application, require material samples for testing for compliance with requirements.

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1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in presence of Contractor.
2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data.
3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements.

3.4 PROTECTION

- A. Protect resinous flooring from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by resinous flooring manufacturer.

END OF SECTION 09 67 23