

SECTION 096723 - RESINOUS FLOORING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes resinous flooring systems with epoxy body coat(s).
 - 1. Application Method: Troweled (Slurry, Seeded or Broadcast mortars are not acceptable)
- B. Related Sections include the following:
 - 1. Division 7 Section "Joint Sealants" for sealants installed at joints in resinous flooring systems.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated. Include manufacturer's technical data, application instructions, and recommendations for each resinous flooring component required.
- B. Samples for Verification: For each resinous flooring system required, 6 inches square, applied to a rigid backing by Installer for this Project.
- C. Product Schedule: Use resinous flooring designations indicated in Part 2 and room designations indicated on Drawings in product schedule.
- D. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.
- E. Material Test Reports: For each resinous flooring component.
- F. Maintenance Data: For resinous flooring to include in maintenance manuals.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer (applicator) who is experienced in applying resinous flooring systems similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance, and who is acceptable to resinous flooring manufacturer.
 - 1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply resinous flooring systems indicated. Resinous flooring manufacturer must be a partner to the warranty covering the installation of the resinous floor by signing a Joint and Several warranty.
- B. Mockups: Apply 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 48-inch- square floor area selected by Owner.
 - a. Include 48-inch length of integral cove base.
2. Simulate finished lighting conditions for Owner's review of mockups.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.4 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 to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects.

1.5 PROJECT 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 not less than 24 hours after application, unless manufacturer recommends a longer period.

1.6 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under the other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Manufacturer to provide a single, written warranty covering both materials and workmanship for a period of one (1) full year from date of substantial completion. Warranty does not include deterioration or failure of flooring system due to unusual weather phenomena, failure of prepared and treated substrate cracks exceeding 1/32 inch in width, fire vandalism, or abuse by snowplow, maintenance equipment and truck traffic.
 1. Deterioration of resinous flooring system includes, but is not limited to, the following:
 - a. Adhesive or cohesive failures.
 - b. Abrasion or tearing failures due to de-lamination or breakdown of coating.
 - c. Surface crazing or spalling.
 - d. Intrusion of water, oils, gasoline, grease, salt. Deicer chemicals, or acids into deck substrate.

PART 2 - PRODUCTS

2.1 RESINOUS FLOORING

A. Products:

1. Stonhard, Inc., Maple Shade, NJ – Local Stonhard contact: Shane Coles, (801) 623-3040. Stonclad GS coated with Stonkote GS4.
2. Sherwin Williams Company – (303)-475-4258. Trafficote #105 Self Leveling Slurry coated with GP 3744 Epoxy.

B. System Characteristics:

1. Color and Pattern: Stonhard “Desert Tan”.
2. Wearing Surface: Provide smooth or textured surface where indicated.
3. Integral Cove Base: 4 inches high, where designated on drawings.
4. Overall System Thickness: 1/8 inch to 3/16 inch.

C. System Components: Manufacturer's standard components that are compatible with each other and as follows:

1. Body Coat(s): Stonhard “Stonclad GS” or Sherwin Williams “Trafficote #105”.
 - a. Resin: Epoxy
 - b. Formulation Description: 100 percent solids
 - c. Application Method: Troweled.
 - 1) Thickness of Coats: 1/8” - 3/16 inch.
 - 2) Number of Coats: One.
 - d. Aggregates: Graded aggregates blended with inorganic pigments.
2. Primer: Type recommended by manufacturer for substrate and body coat(s) indicated.
 - a. Formulation Description: 100 percent solids, Standard Primer
3. Topcoat: Chemical-resistant finish coat(s). Stonhard “Stonkote GS4” or Sherwin Williams “GP 3744”.
 - a. Resin: Epoxy
 - b. Formulation Description: 100 percent solids
 - c. Type: Pigmented
 - d. Finish: Gloss
 - e. Number of Coats: One
4. Sealcoat: UV-resistant seal coat: Stonhard “Stonseal GS6” or Sherwin Williams “GP 4618”.
 - a. Resin: Urethane
 - b. Formulation Description: UV-resistant

- c. Type: Pigmented
 - d. Finish: Gloss
 - e. Number of Coats: One
- D. System Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested according to test methods indicated:
- 1. Compressive Strength: 10,000 psi per ASTM C 579.
 - 2. Tensile Strength: 1,750 psi per ASTM C 307.
 - 3. Flexural Modulus of Elasticity: 2.0×10^6 psi per ASTM C 580.
 - 4. Water Absorption: 0.2% per ASTM C 413.
 - 5. Coefficient of Thermal Expansion: 3.5×10^{-5} in/in^oC per ASTM C 531.
 - 6. Impact Resistance: > 160 in./lbs per ASTM D 4226
 - 7. Abrasion Resistance: 0.08 gm maximum weight loss per ASTM D 4060, C-17 wheel
 - 8. Flammability: Self-extinguishing per ASTM D 635.
 - 9. Hardness: 85-90, Shore D per ASTM D 2240.
 - 10. Bond Strength: 100 percent concrete failure per ASTM D-4541

2.2 MISCELLANEOUS MATERIAL

- A. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.
- B. Joint Sealant: Type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated.

PART 3 - EXECUTION

3.1 PREPARATION

- A. General: Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry, and neutral Ph 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, and other contaminants incompatible with resinous flooring.
 - 1. Roughen concrete substrates as follows:
 - a. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
 - 2. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written recommendations.
 - 3. Verify that concrete substrates are dry.

- a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with application only after substrates have maximum moisture-vapor-emission rate of 5 lb of water/1000 sq. ft. in 24 hours.
 - b. Perform plastic sheet test, ASTM D 4263. Proceed with application only after testing indicates absence of moisture in substrates.
 - c. Perform additional moisture tests recommended by manufacturer. Proceed with application only after substrates pass testing.
 - d. Verify that surface temperature of concrete substrate is not warming or cooling prior to installation.
- C. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.
- D. Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.
- E. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written recommendations.

3.2 APPLICATION

- A. General: 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.
 2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
 3. At substrate control, expansion and isolation joints, provide joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations.
 - a. Apply joint sealant to comply with manufacturer's written recommendations.
- B. Apply primer over prepared substrate at manufacturer's recommended spreading rate.
- C. 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.
- D. Apply self-leveling slurry body coat(s) in thickness indicated for flooring system.
- E. Apply troweled screeded body coat(s) in thickness indicated for flooring system. Hand or power trowel grout to fill voids. When cured, sand to remove trowel marks and roughness.
- F. Apply topcoat(s) in number of coats indicated for flooring system and at spreading rates recommended in writing by manufacturer.
- G. Apply Sealcoat(s) in number of coats indicated for flooring system and at spreading rates recommended in writing by manufacturer.

3.3 FIELD QUALITY CONTROL

- A. Core Sampling: At the direction of Owner and at locations designated by Owner, take 1 core sample per 1000 sq. ft. of resinous flooring, or portion of, to verify thickness. For each sample that fails to comply with requirements, take two additional samples. Repair damage caused by coring and correct deficiencies.
- 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.
 - 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 CLEANING AND PROTECTING

- 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 096723