

Resinous flooring is generally used at Animal Holding rooms and Cage Wash areas with enclosed cage washers. When resinous flooring used at a shower situation, or a heavy automatic deluge situation, provide a waterproofing membrane. For resinous flooring installed on slab-on-grade include a separate spec. for Moisture Mitigation.

SECTION 096723 – RESINOUS FLOORING

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(Consultant shall edit specifications and blue text in header to meet project requirements. This includes but is not limited to updating Equipment and/or Material Model Numbers indicated in the specifications and adding any additional specifications that may be required by the project. Also turn off all “Underlines”)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Resinous flooring.
 - 2. Integral cove base accessories.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review manufacturer's written instructions for substrate preparation and environmental conditions affecting resinous flooring installation.
 - 2. Review details of integral cove bases.
 - 3. Review manufacturer's written instructions for installing resinous flooring systems.
 - 4. Review protection measures for adjacent construction and installed flooring, floor drainage requirements, curbs, base details, and so forth.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include manufacturer's technical data, installation instructions, and recommendations for each resinous flooring component required.
- B. Samples for Initial Selection: For each type of exposed finish required.
- C. Samples for Verification: For each resinous flooring system required and for each color and texture specified, 6 inches square, applied to a rigid backing by Installer for this Project.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For each resinous flooring component.
- B. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For resinous flooring to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
 - 1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply resinous flooring systems indicated.
- B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
 - 1. Apply full-thickness mockups on 48-inch square floor area.
 - a. Include 48-inch length of integral cove base with inside and outside corner.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 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.

1.9 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 installation.
- 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 installation and for 24 hours after installation unless manufacturer recommends a longer period.

1.10 WARRANTY/GUARANTEE

- A. All materials, equipment, etc. provided by the contractor shall be warranted and guaranteed to be free from defects in workmanship and materials for a period of two (2) years from date of substantial completion and acceptance of work by UMB. Any defects in workmanship, material, or performance which appear within the guarantee period shall be corrected by the contractor without cost to the Owner, within a reasonable time, to be determined by UMB. In default thereof, owner may have such work done and charge the cost of same to the Contractor. In addition to the above statement, the Warranty/Guarantee period shall also include all labor costs related to all warranty work.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Flammability: Self-extinguishing in accordance with ASTM D635.
- B. VOC Content of Liquid-Applied Flooring Components: Not more than 100 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Sherwin-Williams Company, General Polymers. Ceramic Carpet #400.
 - 2. Sika Corporation; Sikafloor 265 Flexible Epoxy Membrane, Sikafloor Quartzite System, Sikafloor 510 topcoat.
 - 3. Durex Coverings, Inc.; Mosaix Floor #190 with DX-470 Chemical Resistant Polyaspartic Top Coat.
 - 4. Life Sciences Products Inc. SeamTek Type 4 Epoxy Quartz Flooring.

2.3 RESINOUS FLOORING

- A. Resinous Flooring System: Abrasion-, impact-, and chemical-resistant, high-performance-aggregate-filled, resin-based monolithic floor surfacing designed to produce a seamless floor and integral cove base.
- B. 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.
- C. System Characteristics:
 - 1. Color and Pattern: As selected by Architect from manufacturer's full range.

2. Wearing Surface: Smooth with slight profile created by broadcast aggregate for slip resistance.
 3. Overall System Thickness: **1/8 inch** [**3/16” high**] [**Insert thickness requirement**].
- D. System Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested in accordance with test methods indicated:
1. Compressive Strength: 11,500 psi minimum per ASTM C579.
 2. Tensile Strength: 2,500 minimum per ASTM C307.
 3. Flexural Strength: 4,300 minimum per ASTM C580.
 4. Water Absorption: 0.1 percent maximum per ASTM C413.
 5. Indentation: 0 percent maximum per MIL-D-3134.
 6. Impact Resistance: No chipping, cracking, or delamination and not more than 1/16-inch permanent indentation per MIL-D-3134J.
 7. Abrasion Resistance: 90-100 milligrams maximum weight loss per ASTM D4060.
 8. Hardness: 70/65 @ 24 hours, Shore D per ASTM D2240.
- E. Body Coats:
1. Resin: Epoxy.
 2. Formulation Description: 100 percent solids.
 3. Type: Clear.
 4. Installation Method: Self-leveling slurry with broadcast aggregates.
 - a. Thickness of Coats: Manufacturer’s recommended thickness to attain final specified thickness.
 - b. Number of Coats: Two (2) broadcast coats, and grout coat.
 5. Aggregates: Colored quartz (ceramic-coated silica).
- F. Topcoats: Sealing or finish coats.
1. Resin: Chemical Resistant Polyaspartic or Epoxy.
 2. Formulation Description: 100 percent solids epoxy or Chemical Resistant Urethane.
 3. Type: Clear.
 4. Number of Coats: One.
 5. Finish: Gloss.
- G. Primer: Type recommended in writing by resinous flooring manufacturer for substrate and resinous flooring system indicated.
1. Formulation Description: 100 percent solids

Provide waterproofing membrane at installations like showers, not necessary at Animal Holding rooms with drains that get periodically cleaned.

- H. Waterproofing Membrane: Type recommended in writing by resinous flooring manufacturer for substrate and resinous flooring system indicated.
- I. Reinforcing Membrane: Flexible resin formulation that is recommended in writing by resinous flooring manufacturer for substrate and resinous flooring system indicated and that inhibits substrate cracks from reflecting through resinous flooring.
 - 1. Formulation Description: 100 percent solids.
 - a. Provide fiberglass scrim embedded in reinforcing membrane.
- J. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended in writing by manufacturer for installation indicated.

Choose top of cove base below. Generally a square metal cap works best for a smooth and level finished look and is to be used when wall finish above has a thickness.

- K. Cap for Integral Cove Base:
 - 1. **[Provide square metal cap approved by flooring manufacturer] [Feather top of integral cove base for a smooth finish.]**

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare and clean substrates in accordance with resinous flooring manufacturer's written instructions for substrate indicated to ensure adhesion.
- 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.
 - b. Diamond grind surfaces where shot-blast is not possible. Use apparatus that abrades the concrete surface, and contains the dust within the apparatus.
 - c. Comply with requirements in SSPC-SP 13/NACE No. 6, with a Concrete Surface Profile of 3 or greater in accordance with ICRI Technical Guideline No. 310.2R, unless manufacturer's written instructions are more stringent.
 - 2. Repair damaged and deteriorated concrete in accordance with resinous flooring manufacturer's written instructions.
 - 3. Verify that concrete substrates are dry and moisture-vapor emission are within acceptable levels according to manufacturer's written instructions.

Moisture testing is required for all installations. For slab-on-grade projects moisture mitigation will be required, provide a separate spec. section to include Water Vapor Emission Control Systems.

4. Moisture Testing: Perform no fewer than three tests in each installation phase area and with test areas evenly spaced in installation areas.
 - a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 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. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
5. Alkalinity and Adhesion Testing: Perform tests recommended in writing by resinous flooring manufacturer. Proceed with installation only after substrate alkalinity is not less than 6 or more than 8 pH unless otherwise recommended in writing by flooring manufacturer,

C. Patching and Filling: Use patching and fill material to fill holes and depressions in substrates in accordance with manufacturer's written instructions.

1. Control Joint Treatment: Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring in accordance with manufacturer's written instructions.

D. Resinous Materials: Mix components and prepare materials in accordance with resinous flooring manufacturer's written instructions.

3.2 INSTALLATION

A. Apply components of resinous flooring system in accordance with manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness specified.

1. Coordinate installation of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
2. Cure resinous flooring components in accordance with manufacturer's written instructions. Prevent contamination during installation 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 spreading rate recommended in writing by manufacturer.

- C. Reinforcing Membrane: Apply reinforcing membrane to substrate cracks.
- D. Field-Formed Integral Cove Base: Apply cove base mix to wall surfaces before applying flooring coats. Apply in accordance with 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: **[8" high] [24" high] <insert height >**integrated with epoxy wall coating system.
- E. Self-Leveling Body Coats: Apply self-leveling slurry body coats in thickness specified for flooring system.
 - 1. Aggregates: Broadcast aggregates at rate recommended in writing by manufacturer. After resin is cured, remove excess aggregates to provide surface texture indicated.
- F. Grout Coat: Apply grout coat to fill voids in surface of final body coat.
- G. Topcoats: Apply topcoats in number indicated for flooring system specified, at spreading rates recommended in writing by manufacturer, and to produce wearing surface specified.

3.3 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 096723