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Revise this Section by deleting and inserting text to meet Project-specific requirements.

This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
   1. SUMMARY
      1. Section Includes:
         1. Decorative resinous flooring systems.
      2. Related Sections:

Retain Sections in subparagraphs below that contain requirements Contractor might expect to find in this Section but are specified in other Sections.

* + - 1. Section 07 92 00 "Joint Sealants" for sealants installed at joints in resinous flooring systems.
  1. SUBMITTALS
     1. Product Data: For each type of product indicated. Include manufacturer's technical data, application instructions, and recommendations for each resinous flooring component required.
     2. Samples for Initial Selection: For each type of exposed finish required.
     3. Samples for Verification: For each resinous flooring system required, 6 inches (150 mm) square, applied to a rigid backing by Installer for this Project.
     4. Product Schedule: For resinous flooring. Use same designations indicated on Drawings.
     5. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.
     6. Material Certificates: For each resinous flooring component, from manufacturer.
     7. Material Test Reports: For each resinous flooring system.
     8. Maintenance Data: For resinous flooring to include in maintenance manuals.
  2. QUALITY ASSURANCE

Retain first paragraph below if required and if training and approval are available from manufacturers specified. See "Installer Qualifications" Article in the Evaluations.

* + 1. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of flooring systems required for this Project.

Retain subparagraph below with requirements for Installer certificates in "Informational Submittals" Article.

* + - 1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply resinous flooring systems indicated.
    1. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, from single source from single manufacturer. Provide secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from source recommended by manufacturer of primary materials.

Retain paragraph below if Work of this Section is extensive or complex enough to justify a preinstallation conference.

If required by authorities having jurisdiction or Owner, insert fire-test-response-characteristic requirements to suit Project. See "Fire-Test-Response Characteristics" Article in the Evaluations.

* 1. DELIVERY, STORAGE, AND HANDLING
     1. 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.
  2. PROJECT CONDITIONS
     1. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.

Revise first paragraph below if specific foot-candle level is required.

* + 1. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.
    2. Close spaces to traffic during resinous flooring application and for not less than 24 hours after application unless manufacturer recommends a longer period.

If a special warranty is required, insert "Warranty" Article. Requiring a single-source warranty for application and materials from manufacturer may ensure quality but will eliminate some manufacturers. Alternatively, a special warranty signed by the Installer and manufacturer can be required.

1. PRODUCTS
   1. MANUFACTURERS

See Editing Instruction No. 1 in the Evaluations for cautions about naming manufacturers. Retain one of two paragraphs and list of manufacturers in this article. See Section 016000 "Product Requirements."

* + 1. Basis-of-Design Product: Subject to compliance with requirements, provide Ceram #100 Decorative Troweled Mortar system by General Polymers or Owner-approved equal.
  1. DECORATIVE RESINOUS FLOORING

Retain this article for resinous floorings in general commercial areas requiring abrasion, impact, and chemical resistance but where aesthetics are important.

Copy this article and re-edit for each product.

Insert number to complete drawing designation. Use these designations on Drawings to identify each product.

* + 1. Resinous Flooring: Abrasion-, impact- and chemical-resistant, decorative-aggregate-filled, epoxy-resin-based, monolithic floor surfacing designed to produce a seamless floor and integral cove base.
    2. System Characteristics:
       1. Color and Pattern:
       2. Field: 14% Black, 18% Blue, 68% Beige
       3. Perimeter: 20% Black, 20% Light Beige, 20% New Blue.
       4. Wearing Surface: Textured for slip resistance
       5. Overall System Thickness: 1/4 inch (6.4 mm).
    3. Body Coat General Polymers Ceram 100:
       1. Resin: Epoxy.
       2. Formulation Description: 100 percent solids.
       3. Application Method: Troweled or screeded.
          1. Thickness: 1/4 inch (6.4 mm).
          2. Aggregates: Large, multicolored quartz.
    4. Thixotropic Grout Coat General Polymers 3744G Clear:
       1. Resin: Epoxy.
       2. Type: Clear.
       3. Finish: Gloss.
    5. Topcoat: Sealing or finish coats.
       1. Resin: Epoxy.
       2. Type: Clear.
       3. Finish: Gloss.
       4. Number of Coats: Two.
    6. System Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested according to test methods indicated:

Subparagraphs below are examples only and are based on test methods required in ASTM C 722, MIL-D-3134, and manufacturers' literature.

* + - 1. Compressive Strength: 11,000 psi per ASTM C 579.
      2. Tensile Strength: 2,500 psi per ASTM C 307.
      3. Flexural Modulus of Elasticity: 4,500 psi per ASTM C 580.
      4. Impact Resistance: No chipping, cracking, or delamination and not more than 1/16-inch (1.6-mm) permanent indentation per MIL-D-3134.
      5. Resistance to Elevated Temperature: No slip or flow of more than 1/16 inch (1.6 mm) per MIL-D-3134.
      6. Abrasion Resistance: 100 mgs maximum weight loss per ASTM D 4060.
      7. Flammability: Self-extinguishing per ASTM D 635.
      8. Retain first option in first subparagraph below if Class I floor finish materials are required; retain second option if Class II floor finish materials are required.
      9. Hardness: 85/65, Shore D per ASTM D 2240.
      10. Bond Strength: 350psi, 100 percent concrete failure per ACI 503R.

Retain paragraph below to establish criteria for chemical resistance. If retaining, and if criteria apply only to system's topcoat, revise to suit Project.

* 1. ACCESSORIES

Retain first paragraph below if primer is required. Some systems are self-priming. Some manufacturers offer alternative primers.

* + 1. Primer: Type recommended by manufacturer for substrate and body coats indicated.

Retain subparagraph below if required.

* + - 1. Formulation Description: 100 percent solids.
    1. Waterproofing Membrane: Type recommended by manufacturer for substrate and primer and body coats indicated.

Retain subparagraph below if required.

* + - 1. General Polymers Fastop MVT moisture transmission barrier grout.
      2. Liquid system is not acceptable.
    1. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.
    2. Divider Strips: L-type angle, 1/4 inch (6.4 mm) deep.

Brass may react with resinous matrices. Verify that material retained in "Material" Subparagraph below is acceptable to terrazzo manufacturers.

* + - 1. Material: Aluminum.
      2. Top Width: 1/8 inch (3.2 mm)
    1. Control-Joint Strips: Separate, double L-type angles, positioned back to back, that match material and color of divider strips and in depth required for topping thickness indicated.
    2. Strip Adhesive: Epoxy-resin adhesive recommended by adhesive manufacturer for this use
    3. Anchoring Devices:
       1. Strips: Provide mechanical anchoring devices or adhesives for strip materials as recommended by manufacturer and required for secure attachment to substrate.

1. EXECUTION
   1. PREPARATION

Revise first paragraph below to suit resinous flooring system selected. Some systems are moisture tolerant; consult manufacturers for guidance.

* + 1. General: Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry substrate for resinous flooring application.
    2. 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:

Retain one of first two subparagraphs below. See Evaluations.

* + - * 1. 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. Comply with ASTM C 811 requirements unless manufacturer's written instructions are more stringent.
      1. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written instructions.
      2. Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.

For applying impermeable resinous flooring systems, 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) of slab area in 24 hours is generally considered a safe moisture-vapor-emission rate. Consult manufacturers for appropriate rates for permeable systems that will allow moisture vapor to continue through the systems once cured.

* + - * 1. Perform 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/1000 sq. ft. (1.36 kg of water/92.9 sq. m).
        2. Perform plastic sheet test, ASTM D 4263. Proceed with application only after testing indicates absence of moisture in substrates.
        3. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum [75] percent relative humidity level measurement.
      1. 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.
    1. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.
    2. Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.
    3. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written instructions.
  1. APPLICATION
     1. 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 expansion and isolation joints, comply with resinous flooring manufacturer's written instructions.
     2. Apply moisture transmission barrier grout over prepared substrate at manufacturer's recommended spreading rate.
     3. Install metal divider strips at floor perimeters, 6” away from face of wall.
     4. 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: 6 inches (100 mm) high.
     5. Apply troweled or screeded body coats in thickness indicated for flooring system. Hand or power trowel and grout to fill voids. When cured, remove trowel marks and roughness using method recommended by manufacturer.
     6. Apply grout coat, of type recommended by resinous flooring manufacturer, to fill voids in surface of final body coat and to produce wearing surface indicated.
     7. Apply topcoats in number indicated for flooring system and at spreading rates recommended in writing by manufacturer.
  2. FIELD QUALITY CONTROL

With Owner's written permission, retain first paragraph below to ensure compliance with thickness requirements. Core sampling requires repairing damage caused by testing.

* + 1. Core Sampling: At the direction of Owner and at locations designated by Owner, take one core sample per 1000 sq. ft. (92.9 sq. m) 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.

Retain paragraph below if size or nature of Project warrants material sampling. If retaining, revise to suit Project.

* 1. PROTECTION
     1. 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**