SECTION 09670 (09 67 23)

RESINOUS FLOORING AND WALL SYSTEMS

TENNANT PERFORMANCE WG 240 GLOSS

RCE-RCE-WG 240

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Resinous Systems of the Following Types:
   1. Tennant Performance WG 240

1.2 RELATED SECTIONS

A. Section 03300 – Cast-In-Place Concrete.

1.3 REFERENCES

A. ASTM International (ASTM):
   1. ASTM D 695 - Standard Test Method for Compressive Properties of Rigid Plastics.
   2. ASTM D1475 - Standard Test Method For Density of Liquid Coatings, Inks, and Related Products.
   3. ASTM D 2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine.
   4. ASTM D 2240 - Standard Test Method for Rubber Property—Durometer Hardness.
   5. ASTM D 2370 - Standard Test Method for Tensile Properties of Organic Coatings.
   6. ASTM D 3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
   7. ASTM D 4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
   8. ASTM D5441 - Standard Test Method for Analysis of Methyl Tert-Butyl Ether (MTBE) by Gas Chromatography.
   9. ASTM D 7234 - Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers.
   10. ASTM F 1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
   11. ASTM F 2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

B. Deutsches Institute fur Normung (DIN):
   1. DIN 53460 – Testing of Plastics; Determination of the Vicat Softening Temperature of Thermoplastics.

C. International Concrete Repair Institute (ICRI):
   1. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair.

D. Military Specifications (MIL):
   1. MIL-D-3134J - Deck Covering Materials.

E. National Floor Safety Institute (NFSI):
   1. ANSI/NFSI B101.1 - Test Method for Measuring Wet SCOF of Common Hard-Surface Floor Materials.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data:
   1. Manufacturer's data sheets on each product to be used, including properties, VOC content, wet static coefficient of friction, compressive strength, tensile strength, elongation and similar properties.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements and recommendations.
   4. Typical installation methods.

C. Verification Samples: Two representative units of each system, including color and texture.

D. Shop Drawings: Include details of materials, construction and finish. Include relationship with adjacent construction.

E. Manufacturer’s Certification: Submit manufacturer’s certification that materials comply with specified requirements and are suitable for intended application.

F. Manufacturer’s Project References: Submit manufacturer’s list of successfully completed resinous flooring system projects, including project name and location, name of architect, and type and quantity of flooring systems furnished.

G. Applicator’s Project References: Submit applicator’s list of successfully completed resinous flooring system projects, including project name and location, name of architect, and type and quantity of flooring systems applied.

H. Care and Maintenance Instructions: Submit manufacturer’s care and maintenance instructions, including cleaning instructions.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.

B. Applicator’s Qualifications:
   1. Applicator regularly engaged, for a minimum of 5 years, in application of resinous flooring systems of similar type to that specified.
   2. Employ persons trained for application of resinous flooring systems.

C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

D. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
   1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
   2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
   3. Retain mock-up during construction as a standard for comparison with completed work.
   4. Do not alter or remove mock-up until work is completed or removal is authorized.

1.6 PRE-INSTALLATION CONFERENCE

A. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name, manufacturer, and batch number.

B. Storage and Handling Requirements:
   1. Store and handle materials in accordance with manufacturer's instructions.
   2. Keep materials in manufacturer's original, unopened containers and packaging until application.
   3. Store materials in clean, dry area indoors between 65 and 80 degrees F (18 and 27 degrees C).
   4. Store materials out of direct sunlight.
   5. Keep materials from freezing.
   6. Protect materials during storage, handling, and application to prevent contamination or damage.

1.8 PROJECT CONDITIONS

A. Apply flooring system under the following ambient conditions:
   1. Ambient and Concrete Floor Temperatures: Between 65 and 85 degrees F (18 and 29 degrees C).
   2. Material Temperature: Between 65 and 85 degrees F (18 and 29 degrees C).
   3. Relative Humidity: Maximum 80 percent.
   4. Dew Point: Floor temperature more than 5 degrees over dew point.

B. Do not apply flooring system under ambient conditions outside manufacturer's limits.

1.9 WARRANTY

A. Submit manufacturer's standard warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Tennant Coatings Inc., which is located at: 701 N. Lilac Dr.; Minneapolis, MN 55440; Toll Free Tel: 800-228-4943; Email:request info (Coatings@tennantco.com); Web:http://www.tennantcoatings.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 TENNANT PERFORMANCE WG-240

A. Tennant Performance WG-240, RCE-RCE-Wear Guard 240.
   1. Primer Coat: Eco-RCE, 3-5 mils.
   2. Build Coat: Eco-RCE, 17-13 mils.
   3. Topcoat: Wear Guard 240, 4 mils.
   4. Color: As selected by Architect from manufacturer's full range.

2.3 PRODUCT PROPERTIES

A. Eco-RCE: A two-component, rapid cure high solids epoxy designed for experienced applicators.
   1. Volatile Organic Compound-VOC, EPA-Method 24, < 100 @ 10 mils (0.25 mm) or greater
   2. Density-lb./gal (kg/L), ASTM D1475, A-9.46/1.135 | B-8.22 / 0.986 A/B-9.04 / 1.085
   3. Percent Solids (nonvolatiles), ASTM D2369, Method E, ≥ 90.79 @ 10 mils or greater
   4. Tensile Strength psi (MPa), ASTM D2370, 5,200 (35.9)
   5. Percent Elongation, ASTM D2370, 4
   6. Shore D Hardness, ASTM D2240, 80-85 @ 0 sec | 75-80 @ 15 sec

B. Wear Guard 240: A one-component, moisture-cure aromatic urethane for protecting interior concrete floors.
   1. Volatile Organic Compound-VOC, ASTM D3960, A+B 2.06 lb./gal (247 g/L)
   2. Abrasion Resistance, Taber Abraser, CS-17 Taber Abrasion Wheel, 1,000 gram load, 1,000 revolutions, ASTM D4060, 20-30 mg/loss
   3. Coefficient of Friction-James Friction Test, ASTM D2047, 0.52-0.55
   4. Tensile Strength, ASTM, D2370, 5,600 psi (38.61 MPa)
   5. Percent Elongation, ASTM D2370, 76

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine concrete surfaces to receive flooring system. Verify concrete is structurally sound.

B. Moisture Testing of Concrete: Perform at least one of the following two tests to determine moisture in concrete. Type of test and frequence as recommended by manufacturer and installer.
   1. In-situ Probe Test:
      a. Measure relative humidity in concrete in accordance with ASTM F 2170.
      b. Application of flooring system shall start only if test results are below 75 percent relative concrete humidity.
      c. If test results are above limits, notify Architect and flooring manufacturer in writing.

C. Do not begin preparation or installation until satisfactory moisture test results are achieved. Provide flooring manufacturer's recommended moisture vapor control coating if required.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Protection of In-Place Conditions: Protect adjacent surfaces and adjoining walls from contact with flooring system materials.

C. Surface Preparation:
   1. Prepare concrete surface in accordance with manufacturer's instructions.
   2. Remove dirt, dust, debris, oil, grease, curing agents, bond breakers, paint, coatings, sealers, silicones, and other surface contaminants which could adversely affect application of flooring system.
   3. Steel shot blast concrete to a minimum surface profile of ICRI 310.2R, CSP 5.
   4. Key-cut termination points with 1/4-inch (6-mm) by 1/4-inch (6-mm) cut.
   5. Patch depressions, divots, and cracks in concrete in accordance with manufacturer's instructions.
   6. Mechanically remove loose, delaminated, and damaged concrete and repair in accordance with manufacturer's instructions.
   7. Joints: Fill joints in accordance with manufacturer's instructions.

3.3 INSTALLATION

A. Install flooring system in accordance with manufacturer's instructions and approved submittals at locations indicated on the Drawings.

B. Ensure concrete is dry, clean, and prepared in accordance with manufacturer's instructions.

C. Allow concrete to cure a minimum of 7 days before applying flooring system.

D. Mixing:
   1. Mix material components together in accordance with manufacturer's instructions.
   2. Mix only enough material that can be applied within working time.
   3. Add and mix colorants with materials in accordance with manufacturer's instructions to achieve uniform color.

E. Apply flooring system materials to obtain consistent mil thickness and smooth, uniform appearance and texture.

F. Overlay: Apply overlay in accordance with manufacturer's instructions. Apply overlay to prepared concrete surface.

G. Traction Aggregate: Broadcast traction aggregate in accordance with manufacturer's instructions. Broadcast traction aggregate into wet overlay.

H. Cove:
   1. Apply cove primer and cove in accordance with manufacturer's instructions at locations indicated on the Drawings.
   2. Apply cove to height and shape as indicated on the Drawings.
   3. Apply cove to create seamless, smooth transition between flooring and walls.

I. Seal Coat:
   1. Apply seal coat in accordance with manufacturer's instructions.
   2. Apply seal coat over traction aggregate.

3.4 FIELD QUALITY CONTROL

A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

3.5 CLEANING AND PROTECTION

A. Allow flooring system to dry in accordance with manufacturer's instructions before opening to traffic.

B. Allow flooring system to dry a minimum of 1 week before cleaning by mechanical means.

C. Protect completed flooring system from damage during construction.

END OF SECTION