SECTION 09 67 23

RESINOUS FLOORING

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies a seamless flooring system with integral base.

B. Flooring consists of epoxy resin, aggregate, and finish coats for non-slip finish.

1.2 RELATED WORK

A. Color and room finish schedule: Refer to Room Finish Schedule indicted on the Drawings.

1.3 SUBMITTALS

A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Manufacturer's Literature and Data:

1. Description of product to be provided; technical data showing compliance with specifications.
2. Application and installation instructions, including proposed deviations from specifications.

C. Samples:

1. Each color specified in Room Finish Schedule indicted on the Drawings.
2. Sample 300 mm (12-inch) square in each finish specified.
3. Sample showing construction from substrate to finish surface in thickness specified.

D. Certification and Approval:

1. Manufacturer's certification of material compliance.
2. Manufacturer's approval of installers.
3. Contractor's certificate of compliance with Quality Assurance requirements.

E. Warranty: Manufacturers warranty of materials and installation.

1.4 QUALITY ASSURANCE

A. Single Source Responsibility:

1. Obtain primary resinous flooring materials including primers, resins, hardening agents, finish or sealing coats from a single manufacturer.
2. Provide secondary materials only of type and from source recommended by manufacturer of primary materials.

B. Installer trained and approved by manufacturer of primary material and having completed at least five projects of similar size and complexity.

C. Pre-Installation Conference

1. Arrange a meeting not less than thirty days prior to starting work.

2. Attendance

a. Contractor

b. Project Engineer

c. Manufacturer and Installer's Representative

1.5 MATERIAL PACKAGING DELIVERY AND STORAGE

A. Deliver materials to the site in original sealed packages or containers, clearly marked with the manufacturer's name or brand, type and color, production run number and date of manufacture.

B. Protect materials from damage and contamination in storage.

C. Maintain temperature of storage area between 15° C and 32° C (60° F and 90° F).

D. Package materials in factory pre-weighed and in single, easy to manage batches sized for ease of handling and mixing proportions from entire package or packages.

1.6 WARRANTY

A. Work subject to the terms of the Article "Warranty of Construction" FAR clause 52.246-21.

B. Extend warranty period to three years.

1.7 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.

B. American Society for Testing and Materials (ASTM):

1. B221-06 Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes

2. C267-01 (R2006) Chemical Resistance of Mortars, Grouts, and Monolithic Surfacings

3. C413-01 (R2006) Absorption of Chemical-Resistant Mortars, Grouts, and Monolithic Surfacings, and Polymer Concretes

4. C580-02 Flexural Strength and Modulus of Elasticity of Chemical Resistant Mortars, Grouts, Monolithic Surfacings and Polymer Concretes

5. C722-04 Chemical-Resistant Resin Monolithic Surfacing

6. C811-98 (R2003) Surface Preparation of Concrete for Application of Chemical-Resistant Resin Monolithic Surfacings

7. C882-05 Bond Strength of Epoxy-Resin Systems Used

with Concrete by Slant Shear

8. D2047-04 Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine

C. National Association of Architectural Metal Manufacturers (NAAMM):

1. AMP 501 Finishes for Aluminum

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Epoxy resinous flooring includes concrete epoxy primer, colored quartz aggregate epoxy resin mortar, clear epoxy sealer coat, and finish coat for non-slip finish.

B. System resistant to chemicals and abrasion.

2.2 EPOXY FLOORING SYSTEM

A. Conform to ASTM C722, Type A, Epoxy resin, quartz aggregate.

B. Physical Properties of flooring system addition to C722 when tested as follows:

Property	Test	Value
Hardness	ASTM D2240 Shore Durometer	75-80
Bond	ASTM C882 Bonding epoxy flooring to hardened concrete	min 400 psi
Water Absorption	ASTM C413	max 0.1 percent
Abrasion Resistance	ASTM D4060 Taber Abrader CS-17 wheel, 1000 gm load; 1000 cycle	max 0.10 gms. weight loss
Flexural Strength	ASTM C580	min 2200 psi
Extent of Burning extinguishing Heat Resistant	ASTM D635 For continuous exposure min 140 deg. F For intermittent spills min 200 deg. F	max 0.25 inch self No Effect No Effect
Coefficient of Friction	ASTM D 2047	0.7
Chemical Resistance of the following: Acetic acid Ammonium hydroxide Citric Acid Fatty acid Motor Oil, 20W Hydrochloric acid Salt water Sodium Hydroxide Sulfuric acid Trisodium phosphate	ASTM C267 5 percent 10 percent 50 percent 10 percent 10 percent 10 percent 5 percent	No Effect

Urine	
Feces	
Hydrogen peroxide	28 percent
Distilled Water	
Sodium Hypochloride	5.28 percent

C. Primer, Coloring, Sealer, and Finish coats as standard with manufacture of flooring system.

D. Base cap: Extruded aluminum, clear anodized finish unless specified otherwise in Room Finish Schedule indicted on the Drawings.

2.3 BASE CAP STRIP

A. Aluminum, Extruded: ASTM B221, Alloy 6063-T6.

B. Shape for 5 mm (3/16 inch) depth of base material, "J" configuration.

C. Finish:

1. Finish exposed surfaces in accordance with NAAMM Metal Finishes Manual.

2. Aluminum: NAAMM Amp 501:

a. Clear anodic coating, AA-C22A41 chemically etched medium matte, with Architectural Class 1, 0.7 mils or thicker.

b. Colored anodic coating, AA-C22A42, chemically etched medium matte with Architectural Class 1, 0.7 mils or thicker.

PART 3 - EXECUTION

3.1 PROJECT CONDITIONS

A. Maintain temperature of materials above 21° C (70° F), for 48 hours before installation.

B. Maintain temperature of rooms where work occurs, between 21° C and 32° C (70° F and 90° F) for at least 48 hours, before, during, and 24 hours after installation. Maintain temperature at least 21° C (70° F) thereafter.

C. Do not install materials until building is permanently enclosed and wet construction is complete, dry, and cured.

D. Concrete substrate cured and not less than 30 days old.

E. Area free of other trades during and for a period of 24 hours after installation.

3.2 INSTALLATION REQUIREMENTS

A. The respective manufacturer's instructions for application and installation will be considered for use when approved by the Project Engineer.

B. Submit proposed installation deviation from this specification to the Project Engineer indicating the differences in the method of installation.

3.3 PREPARATION

A. Prepare surface in accordance with ASTM C811 except where specific manufacturers instructions supersede.

B. Mechanically remove bond inhibiting materials and loose or laitance materials to ensure bond.

C. Prepare wall and set base cap mold level.

1. Fill voids within the height of the wall where base is applied even with the wall surface.

2. Grind, sand, or cut away protrusions.

3.4 APPLICATION

A. Mix and apply each component of resinous flooring system in compliance with manufacturer's specifications to produce a uniform monolithic flooring surface of 5 mm (3/16 inch) minimum thickness.

B. Turn flooring up for coved 100 mm (4-inch) high base at vertical wall surfaces and penetrations. Cove joint with floor; 6 mm (1/4 inch) radius. Round interior and external corners.

C. Apply primer over prepared substrate at manufacturers specified rate. Coordinate timing of primer application with application of troweled mortar to ensure optimum adhesion between resinous flooring materials and substrate.

D. Uniformly spread mortar over substrate adjusted to manufacturer's recommended maximum thickness to plane line of floor.

E. Trowel finish for smooth surface on base and coved surface.

F. Grout mortar surface as specified by manufacturer and broad cast colored quartz aggregate uniformly distributed for non-slip texture on floors to within one inch of base cove horizontal edge.

G. Apply a clear finish coat.

3.5 CURING, PROTECTION AND CLEANING

A. Cure resinous flooring materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of application and prior to completion of curing process.

B. Close area of application for a minimum of 24 hours.

C. Protect resinous flooring materials from damage and wear during construction operation.

1. Cover flooring with kraft paper.

2. Cover paper with 6 mm (1/4 inch) thick hardboard, plywood, or particle board where area is in foot or vehicle traffic pattern, rolling or fixed scaffolding and overhead work occurs.

D. Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer.

3.6 TOLERANCE

A. From line of plane: Maximum 3 mm (1/8 inch) in total distance of flooring and base.

B. From radius of cove: Maximum of 3 mm (1/8 inch) plus or 1.6 mm (1/16-inch) minus.

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