SECTION 09 67 23-RESINOUS FLOORING

PROCRYL FLEX NQ – Flexible Solid Color Self-Leveling Broadcast Methyl Methacrylate Flooring System

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes the following:
   1. Resinous flooring system as shown on the drawings and in schedules.
B. Related sections include the following:
   1. Cast-in-Place Concrete, section 03 30 00
      Concrete Curing, section 03 39 00

1.3 SYSTEM DESCRIPTION

A. The work shall consist of preparation of the substrate, the furnishing and application of a Flexible methyl methacrylate (MMA) Self Leveling solid color natural quartz broadcast seamless floor system.
B. The system shall have the color and texture as specified by the Owner with a nominal thickness of 1/16" –1/4". It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations.
C. Cove base (if required) to be applied where noted on plans and per manufacturers standard details unless otherwise noted.

1.4 SUBMITTALS

A. Product Data: Latest edition of Manufacturer's literature including performance data and installation procedures.
B. Manufacturer's Safety Data Sheet (SDS) for each product being used.
C. Samples: A 3 x 4 inch sample of the proposed system. Color, texture, and thickness shall be representative of overall appearance of finished system.
D. LEED Submittals:
   1. Product data for Credit EQ 4.2: For flooring system, documentation including VOC content and chemical composition.
   2. MR Credit 2.1, 2.2: Construction waste management, packaging can be recycled.

1.5 QUALITY ASSURANCE

A. The Manufacturer shall have a minimum of 5 years' experience in the production, sales, and technical support of epoxy urethane and acrylic industrial flooring and related materials.
B. The Applicator shall have been approved by the flooring system manufacturer in all phases of surface preparation and application of the product specified.
C. No requests for substitutions shall be considered that would change the generic type of the specified System.

D. System shall be in compliance with requirements of United States Department of Agriculture (USDA), Food, Drug Administration (FDA), and local Health Department.

E. A pre-installation conference shall be held between Applicator, General Contractor and the Owner to review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Packaging and Shipping
   1. All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product type and batch number

B. Storage and Protection
   1. The Applicator shall be provided with a storage area for all components. The area shall be between 60°F and 85°F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.
   2. Copies of Safety Data Sheets (SDS) for all components shall be kept on site for review by the Engineer or other personnel.

C. Waste Disposal
   1. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste during installation of the system.

1.7 PROJECT CONDITIONS

A. Site Requirements
   1. Application may proceed while air, material and substrate temperatures are between 32°F and 85°F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.
   2. The relative humidity in the specific location of the application shall be less than 85% and the surface temperature shall be at least 5°F above the dew point.
   3. The Applicator shall ensure that adequate ventilation is available for the work area. This shall include the use of manufacturers approved high CFM fans (if necessary), small bore tubing and suitable around the work area including relevant signage.
   4. Ensure that no open flame (e.g. temporary propane heating) or pilot lights are on during application and curing process
   5. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.

B. Conditions of new concrete to be coated with ProREZ System.
   1. New concrete shall be moisture cured for a minimum of 4 days and have fully cured a minimum of 30 days in accordance with ACI-308 prior to the application of the coating system pending moisture tests.
   2. Concrete shall have a flat rubbed finish, float or light steel trowel finish (a hard steel trowel finish is neither necessary nor desirable).
   3. Sealers and curing agents should not to be used.
   4. Concrete surfaces on grade shall have been constructed with a vapor barrier to protect against the effects of vapor transmission and possible delamination of the system.

C. Safety Requirements
   1. All open flames and spark-producing equipment shall be removed from the work area prior to commencement of application.
   2. "NO SMOKING" signs shall be posted at the entrances to the work area.
   3. The Owner shall be responsible for the removal of foodstuffs from the work area.
   4. Non-related personnel in the work area shall be kept to a minimum.

1.8 WARRANTY

A. ProREZ Performance Resins & Coatings warrants that material shipped to buyers at the time of shipment substantially free from material defects and will perform substantially to ProREZ Performance Resins & Coatings published literature if used in accordance with the latest prescribed procedures and prior to the expiration date.
B. ProREZ Performance Resins & Coatings liability with respect to this warranty is strictly limited to the value of the material purchase.
C. ProREZ Performance Resins & Coatings has no responsibility for the application and processing of products and is under no circumstances liable to any third party whatsoever.

PART 2 – PRODUCTS

2.1 FLOORING- ProREZ Performance Resins & Coatings: ProCryl MMA coating system.

1. System Materials:
   a. Primer: ProREZ Performance Resins & Coatings, ProCryl Primer and Initiator. Inspect primer on completion of cure for uniform thickness over the entire area. A second primer coat may be required on very porous slabs.
   b. Base Coat: ProREZ Performance Resins & Coatings, ProCryl FX Binder, SL Filler and ProColor Universal Pigment and Initiator.
   c. Broadcast: 20–30 mesh size, clean dry silica quartz or other suitable sand.
   d. Grout/Topcoat: ProREZ Performance Resins & Coatings, ProCryl UVR Topcoat resin and ProColor Universal Pigment and initiator.
   e. Optional 2nd Topcoat with larger aggregate size (20-25 mesh) used in broadcast.
2. Patch Materials:
   a. Shallow /Deep Fill and Patching: Use ProREZ Performance Resins & Coatings, ProCryl Binder (up to 1/4").
   b. Deep Fill and Sloping Material (over 1/4"): Use ProREZ Performance Resins & Coatings, ProCryl Cove Resin and Hardener combined with graded quartz aggregate.

2.2 MANUFACTURER

A. ProREZ Performance Resins & Coatings, 47 Inwood Road, Rocky Hill, CT 06067.
B. Manufacturer of Approved System shall be single source and made in the USA.

2.3 PHYSICAL PROPERTIES

1.	Percent Reactive	100%
2.	VOC – EPA Method 24	0 g/L
3.	Adhesion to Concrete, ASTM D 7234	>400 psi, substrate fails
4.	Elongation ASTM D412	80%
5.	Hardness Shore D ASTM C580	0
6.	Tensile Strength, ASTM C307	1,700 PSI
7.	Flammability ASTM D635	Self-Extinguishing
8.	Abrasion Resistance ASTM4060 CS17 Wheel – 100 Cycles	40-50 mg loss
9.	Impact Resistance, MIL- D 3134J	Withstands 16ft/lbs without Cracking, delamination or chipping
10.	Slip Resistance ASTM D2047	>0.9 Passes ADA recommendation

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting flooring performance.
   1. Verify that substrates and conditions are satisfactory for flooring installation and comply with requirements specified.

3.2 PREPARATION

A. General
   1. New and existing concrete surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, and bituminous products.
   2. Moisture Testing: Perform anhydrous calcium chloride test ASTM F 1869-98:
      a. Perform three tests for the first 1,000s.f., and then one test per 1,000s.f. after that.
      b. Application will proceed only when the vapor/moisture emission rates from the slab is less than and not higher than 5lbs/1,000s.f./24hrs.
      c. If the vapor drive exceeds 5lbs/1,000sf/24hrs then the Owner and/or Engineer shall be notified and advised of additional cost for the possible installation of a vapor mitigation system that has been approved by the manufacturer or other means to lower the value to the acceptable limit.
   3. Mechanical Surface Preparation
      a. Shot blast or diamond grind all surfaces to receive flooring system with a mobile steel shot, dust recycling machine (Blastrac or equal), or vacuum-assisted diamond grinding with 16 grit diamonds. All surface and embedded accumulations of paint, toppings hardened concrete layers, laitance, power trowel finishes and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a minimum profile of CSP 4-5 as described by the International Concrete Repair Institute.
      b. Floor areas inaccessible to the mobile blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.

c. At terminations at doorways a minimum 1/8 inch key cut shall be made to properly seat the system, providing a smooth transition between areas. The detail cut shall also apply to drain perimeters and expansion joint edges. Never terminate system to a "feather edge".
d. Cracks and joints (non-moving) greater than 1/8 inch wide are to be chiseled or chipped-out and repaired per manufacturer's recommendations.

4. Bond Test
   a. Bond Tests should be performed to ensure surface is suitably prepared for ProCryl application. Bond tests should pull aggregate at interface with concrete. Please consult with ProRez Technical Department for more information.
5. Patching
   a. At spalled or worn areas, mechanically remove loose or delaminated concrete to a sound concrete and patch per manufactures recommendations.

3.3 APPLICATION

A. General
1. The system shall be applied in four or five distinct steps as listed below:
   a. Substrate preparation
   b. MMA Primer
   c. MMA SL Binder & Broadcast
   d. MMA Grout/Topcoat application
   e Optional 2nd Top Coat
2. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
3. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.
4. The system shall follow the contour of the substrate unless pitching, or other leveling work has been specified by the Architect.
5. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

B. Primer
1. The initiator shall be added to the resin at the prescribed level and thoroughly dispersed by suitably approved mechanical means.
2. The Primer shall be applied over horizontal surfaces using a 3/16" or 15-20 WFT mils notched squeegee as approved by the Manufacturer at a rate of 100s.f. per kit.
3. Immediately upon placing, the primer shall be rolled with a 3/8" non-shed, nap roller.
4. A second Primer coat may be required on overly porous substrates.
5. Allow the material to fully cure.

C. Body-coat (Optional Pigmented)
   1. The Resin shall be poured into a 5-gal Steel Container, the pigment shall be added at 8 oz per gal, ½ gal of SL Filler per gal of Resin, shall be added and mixed for 1 – 2 mins. Finally, the initiator shall be added at the prescribed level and thoroughly dispersed by suitably approved mechanical means for a further 1 minute.
   2. The Body-coat shall be applied over horizontal surfaces 3/8" – 1/2" notched squeegee (dependent on desired thickness) as approved by the Manufacturer.
   3. Immediately upon placing, the body-coat shall be rolled with a Loop Roller.
   4. The Broadcast shall be completed within the window of working time.
   5. Allow the material to fully cure.

D. Topcoat
   1. The Topcoat shall be comprised of a liquid resin and a powder initiator that is mixed and installed per the Manufacturer's recommendations.
   2. The Topcoat shall be squeegee applied and back-rolled with a coverage rate of 100-120s.f/gal.

3.4 FIELD QUALITY CONTROL

A. Tests, Inspection – The following tests shall be conducted by the Applicator:
   1. Temperature
      a. Air, substrate temperatures and, if applicable, dew point.
   2. Coverage Rates
      a. Rates for all layers shall be monitored by checking quantity of material used against the area covered.

3.5 CLEANING AND PROTECTION

A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent any contamination during stages of application and prior to completion of the curing process.
B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.