

SECTION 09 67 23-RESINOUS FLOORING

PROKRETE SLQ – Application over Plywood – Cementitious Urethane, Decorative Colored Quartz Broadcast

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

Plywood sub-floor must be designed for a maximum deflection of L/360 under dynamic loading.

- A. This section includes the following:
 - 1. Resinous flooring system as shown on the drawings and in schedules.

1.3 SYSTEM DESCRIPTION

- A. The work shall consist of preparation of the substrate, the treating of Plywood joints and the furnishing and application of a seamless, self-leveling, cementitious urethane flooring system broadcasted with colored quartz aggregate, and grouted with either a clear epoxy Novolac, Epoxy, Urethane, or Polyaspartic.
- B. The system shall have the color and texture as specified by the Owner with a nominal thickness of 3/16"-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 manufacturer's 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.
 - 3. MR Credit 6: For flooring system, documentation includes renewable content and chemical composition.

1.5 QUALITY ASSURANCE

- A. The Manufacturer shall have a minimum of 5 years' experience in the production, sales, and technical support of epoxy and urethane industrial flooring and related materials.

- B. The Applicator shall have been approved by the flooring system manufacturer in all phases of surface 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 for 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, 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 generated during installation of the system.

1.7 PROJECT CONDITIONS

- A. Site Requirements
 - 1. Application may proceed while air, material and substrate temperatures are between 55°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% but no less than 30% 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), smooth bore ducting, and suitable enclosure around the work area, including relevant signage.
 - 4. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.
- B. If the Plywood is to be installed by others, then the following should be followed:
 - 1. If application over existing wooden floor, clean and fasten existing wood floor to the floor joists. Floor must be completely sound.
 - 2. Fasten 1/2" exterior-grade plywood "C" plugged with an extended glue line to the existing floor. Stagger the plywood for strength. 3/4" DFPA Exterior or 3/4" DFPA Underlayment grade plywood with exterior glue line must be used if the existing floor cannot be cleaned, or is not sound.
 - 3. All plywood must be completely free of all waxes, varnish or other foreign materials.
 - 4. Secure plywood with exterior grade glue.

5. Use screws at six-inch centers around panel edges and support.
 6. Stagger all panel joints.
 7. If using 2 layers of Plywood, ensure that 2nd layer of Plywood is installed at 90 Degrees to the 1st layer of Plywood.
- 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: ProKRETE SLQ (Self- Leveling Colored Quartz Broadcast) Seamless Flooring System.

1. System Materials:
 - a. Fiberglass Treatment of Joints: ProREZ Performance Resins & Coatings, ProKrete SL Resin, Hardener, SL Aggregate and 10oz. Plain Woven Cloth fiberglass mat.
 - b. Topping: ProREZ Performance Resins & Coatings, ProKrete SL Resin, Hardener and SL Aggregate.
 - c. Broadcast Aggregate: The aggregate shall be ProQuartz 40 or 25 mesh colored silica quartz.
 - d. Grout/Topcoat – Option #1: ProREZ Performance Resins & Coatings, ProPoxy CR Novolac Epoxy resin & hardener.
Topcoat – Option #2: ProREZ Performance Resins & Coatings, ProPoxy S Standard Epoxy resin and hardener, followed by a 2nd topcoat application using ProThane polyurethane resin and hardener.
Topcoat – Option #3: ProREZ Performance Resins & Coatings, ProSpartic Polyaspartic resin & hardener.
2. Patch Materials
 - a. Shallow/Deep Fill and Patching: ProREZ Performance Resins & Coatings, ProKrete SL (up to 1/4").
 - b. Deep Fill and Sloping Material (over 1/4"): Use ProREZ Performance Resins & Coatings, ProKrete CM or KreteFill.

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 PRODUCT REQUIREMENTS

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| A. | Primer/Resurfacer (Topping) | ProKrete SL |
| 1. | Percent Reactive | 100 % |
| 2. | VOC | 0 g/L |
| 3. | Compressive Strength, ASTM C 579 | 9,500 psi |
| 4. | Tensile Strength, ASTM C307 | 1,500 psi |
| 5. | Flexural Strength, ASTM C580 | 2,200 psi |
| B. | Grout/Topcoat Options: | ProPox CR or ProPox S & ProThane
or ProSpartic |

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 APPLICATION

- A. General
 - 1. The system shall be applied in four distinct steps as listed below:
 - a. Substrate preparation.
 - b. Fiberglass treatment of all Plywood Joints.
 - c. Resurfacer application with colored quartz aggregate broadcast.
 - d. Clear grout/topcoat application.
 - 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-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 Applicator.
- B. Fiberglass Application
 - 1. The primer shall comprise of 3 components, resin and hardener and SL aggregate as supplied by the Manufacturer.
 - 2. The fiberglass shall be 10oz. Plain Weave Cloth. Fiberglass shall be pre-cut a minimum of 10 inches wide to be installed at every plywood joint.

3. Apply Prokrete SL at approximately 10-14 mils in thickness with either a flat trowel or squeegee. Ensure the material fills any seams or cracks and extends beyond the area where the fiberglass cloth will be placed. Lay Fiberglass into the wet resin ensuring that no bubbles are trapped using either a roller or a trowel to flatten out the fiberglass cloth over the floor. Immediately apply more material on top of the fiberglass to ensure full encapsulation of the mat.
4. Allow to cure overnight then sand or grind down edges and any bubbles or irregularities.
- C. Resurfacer
 1. The resurfacer shall be applied as a self-leveling system as specified by the Architect. The resurfacer shall be applied in one lift with a nominal thickness of 1/8 – 3/16 inch.
 2. The topping shall be comprised of three components, a resin, hardener and filler as supplied by the Manufacturer.
 3. The hardener shall be added to the resin and thoroughly dispersed by suitably approved mechanical means. SL Aggregate shall then be added to the catalyzed mixture and mixed in a manner to achieve a homogenous blend.
 4. The topping shall be applied over horizontal surfaces using a 1/2 inch “v” notched squeegee, trowels or other systems approved by the Manufacturer.
 5. Immediately upon placing, the topping shall be degassed with a loop roller.
 6. Colored Quartz aggregate shall be broadcasted to excess into the wet material at the rate of .75 lbs/sf.
 7. Allow material to fully cure. Vacuum, sweep, and/or blow to remove all loose aggregate.
- D. Grout/Topcoat#1- Option #2
 1. The Grout/Topcoat shall be comprised of a Part A Resin and Part B Hardener (mix ratio 3:1) which is mixed and installed per the manufacturer’s recommendations.
 2. The Grout/Topcoat shall be squeegee applied and back rolled with a coverage rate of 100-110 sf/gal.
- E. Topcoat#2- Option #2
 1. The topcoat shall be roller applied at the rate of 500-550 sf/gal to yield a dry film thickness of 3-4 mils.
 2. The topcoat shall be comprised of a liquid resin and hardener that is mixed at the ratio of 1 part resin to 2 parts hardener per the manufacturer’s instructions.
 3. The finish floor will have a nominal thickness of ¼ inch.

3.3 FIELD QUALITY CONTROL

- A. Tests, Inspection
 1. The following tests shall be conducted by the Applicator:
 - a. Temperature
 1. Air, substrate temperatures and, if applicable, dew point.
 - b. Coverage Rates
 1. 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.