



Surface Shell HP Urethane Concrete System

SECTION 09 67 00
FLUID APPLIED RESINOUS FLOORING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. High-performance coatings including the following:
 - 1. Cleaners and patch/repair specialty products.
 - 2. Seal-Krete high performance flooring systems.

1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 07 90 00 - Joint Sealants.

1.3 REFERENCES

- A. ASTM F 1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- B. ASTM F 2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- C. SSPC: The Society for Protective Coatings:
 - 1. SSPC-SP 1 - Solvent Cleaning.
 - 2. SSPC-SP 2 - Hand Tool Cleaning.
 - 3. SSPC-SP 3 - Power Tool Cleaning.
 - 4. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete.
- D. ICRI: International Concrete Repair Institute
 - 1. CSP Concrete Surface Preparation Standards
- E. Safety Data Sheets: Per manufacturer's SDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.

1.4 DEFINITIONS

- A. LEED as used in this Section refers to Leadership in Energy and Environmental Design. Products listed meet LEED criteria for environmentally safe interior primers, paints and coatings.
- B. VOC as used in this Section refers to Volatile Organic Compounds found in primers, paints, sealers and stains. The level of VOCs appears after each product listed in the Schedule in grams per liter (g/L).

- C. Rust-Oleum Seal-Krete High Performance Systems are referred to as SKHP.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Coordinate with Section 01 30 00 - Administrative Requirements.
- C. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Submit descriptive data and specific recommendations for mixing, application, curing including any precautions of special handling instructions required to comply with the Occupational Safety and Health Act.
 - 2. Prepare instructions and recommendations.
 - 3. Submit storage and handling requirements and recommendations.
- D. Selection Samples: For each finish product specified, submit maximum of three samples, 6 inches by 6 inches for each color and type of coating available from manufacturer's full range.
- E. Verification Samples: For each finish product specified, submit maximum of three samples, 6 inches by 6 inches for each color and type of coating as specified.
- F. Maintenance Literature: Submit two copies of manufacturer's maintenance recommendations.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Materials used in the floor surfacing shall be the products of a single manufacturer.
- B. Installer Qualifications:
 - 1. Installer shall be acceptable to Architect and manufacturer.
 - 2. Installation shall be performed by an applicator with a minimum of 3 years experience in work of similar nature and scope. Installer shall be approved by the manufacturer of the floor surfacing materials. The Contractor shall furnish a written statement from the manufacturer that the installer is acceptable.
 - 3. Contractor shall have proven experience with specified system.
- C. Certification:
 - 1. Manufacturer shall furnish statement attesting that materials meet specification requirements.
 - 2. Manufacturer shall furnish properly labeled material and Technical/Safety Data Sheets which comply with current state and federal requirements.
- D. Pre-Construction Meeting:
 - 1. Pre-job meeting between Contractor, Architect, and installer shall be held to discuss concrete substrate, location of joints and/or saw cuts to minimize sub-floor cracking.
- E. Mock-Up: Provide an installed mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Mock-up size shall not be less than 50 square feet.
 - 3. Acceptable mock-up to be standard of quality for installed work.
 - 4. Unacceptable installed work to be removed and replaced or refinished until acceptable.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:
 - 1. Product name and type (description).
 - 2. Application and use instructions.
 - 3. Surface preparation.
 - 4. VOC content.
 - 5. Environmental issues.
 - 6. Batch date.
 - 7. Color number.
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
- D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.8 PROJECT CONDITIONS

- A. Maintain the ambient room and floor temperature at 60 degree F (15 degrees C) or above for a period extending from 72 hours before or per manufacturer's technical data sheet, during and after floor installation. Concrete to receive surfacing shall have cured for at least 28 days and be free of all curing compounds.
- B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- C. When using polyureas or moisture cured urethane products, pay special attention to humidity levels. At higher humidity levels, these products will have a shorter working time.

1.9 WARRANTY

- A. The technical data and suggestions of use are correct to the best of our knowledge, and offered in good faith. The statements of this specification do not constitute a warranty, expressed, or implied, as to the performance of these products. As conditions and use of our materials are beyond our control, we can guarantee these products only to conform to our standards of quality, and our liability, if any, will be limited to replacement of defective materials. All technical information is subject to change without notice.
- B. Special written project warranties may be issued on a request basis at the discretion of the Rust-Oleum Corporation Technical and Legal Departments and would not be contained within this specification document.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Rust-Oleum®, which is located at: 11 Hawthorn Pkwy.; Vernon Hills, IL 60061; Toll Free Tel: 800-323-3584; Tel: 847-367-7700; Fax: 847-816-2330; Email: technicalservice@rustoleum.com; Web: <https://www.rustoleum.com>.
- B. Specification and product questions should be directed to Rust-Oleum Technical Service at technicalservice@rustoleum.com.
- C. Substitutions: Not permitted.

2.2 CLEANERS AND PATCH/REPAIR SPECIALTY PRODUCTS

- A. Patch/Repair Products:
 - 1. Rust-Oleum Seal-Krete HP Fast Cure Concrete Repair.
 - 2. Rust-Oleum Concrete Saver Flexible Joint Sealant.
- B. Moisture Mitigating Vapor Barriers (Optional if required by testing):
 - 1. Rust-Oleum Seal-Krete HP Vapor Shell Epoxy.
 - a. Use for up to 25 lbs MVT

2.3 SEAL-KRETE HIGH PERFORMANCE FLOOR SYSTEMS (SKHP)

- A. High Performance Floor Systems (SKHP):
 - 1. Rust-Oleum Seal-Krete HP Surface Shell HP Urethane Concrete Solid Color System.
 - a. Primer: RO SKHP Surface Shell HP applied at 32-40 sq ft per kit.
 - b. Grout Coat: RO SKHP Epoxy Shell 1000 EPL tinted and applied at 12-16 mils DFT.

PART 3 EXECUTION

3.1 EXAMINATION

- A. The Contractor shall review the product manufacturer's special instructions for surface preparation, application, temperature, re-coat times, and product limitations.
- B. The Contractor shall review product health and safety precautions listed by the manufacturer.
- C. The Contractor shall be responsible for enforcing on site health and safety requirements associated with the Work.
- D. Ensure that surfaces to receive coating are dry immediately prior to application.
- E. Ensure that moisture-retaining substrates to receive coating have moisture content within tolerances allowed by coating manufacturer.
- F. Examine areas to receive coatings for:
 - 1. Concrete surfaces shall be in sound condition and properly prepared prior to flooring system installation.
 - 2. Defects in existing work that affect proper execution of coating work.
 - 3. Deviations beyond allowable tolerances for the concrete slab work.
- G. Correct conditions that could impair performance or appearance of coatings in accordance with specified surface preparation procedures before proceeding with coating application.
- H. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 SURFACE PREPARATION

- A. All cleaning and surface preparations specified herein are minimums. Prepare substrate to receive coating in accordance with manufacturer's recommendations.
- B. All surfaces to be coated shall be free of cracks, pits, fins, projections, or other imperfections that would interfere with the formation of a uniform, unbroken coating film.
- C. Substrate shall be free of dirt, waxes, curing agents, and other foreign materials prior to mechanical surface preparation.

- D. New concrete shall have cured for a minimum 30 days prior to coating application. If a cure and seal agent was added to the concrete or applied after initial cure, the concrete must be abrasive blast cleaned or mechanically abraded to remove the sealer and expose fresh concrete.
- E. Acceptable Substrates:
1. Level tolerance: Concrete sub-floor shall be level with a maximum variation from level of 1/4 inch (6 mm) in 10 feet (3048 mm). Any irregularity of the surface requiring patching and/or leveling shall be done using material approved by the manufacturer.
 2. Concrete floor shall have a steel trowel finish.
 3. Concrete shall be cured a minimum of 28 days. No curing agents shall be used in areas to receive coating.
 4. Concrete slab shall have an efficient moisture barrier of minimum 10 mils (.2540 mm) placed directly under the concrete slab. Do not use vapor barrier manufactured with recycled content. Testing shall be done to verify that the moisture vapor emission rate of the slab does not exceed that as recommended by the manufacturer at time of installation of the epoxy coating flooring. Moisture vapor emission and moisture content testing shall conform with the requirements of ASTM F 1869 (Calcium Chloride Test) and ASTM F 2170 (Relative Humidity Probe Test). If test results show excessive levels of moisture content or vapor emission rate above that recommended by the manufacturer, apply manufacturer's recommended moisture vapor emission control material.
 5. Saw cutting of control joints shall be done between 12 and 24 hours after placement of the structural concrete.
- F. Concrete, SSPC-SP13 or NACE 6: This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all types of cementitious surfaces including cast-in-place concrete floors and walls, precast slabs, masonry walls, and shotcrete surfaces. An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.
- G. Concrete surfaces shall be mechanically abraded, or abrasive blast cleaned to remove all laitance to provide a uniform surface profile with a profile depth recommended by the fluid applied resinous system selected per ICRI CSP Standards. **ICRI CSP Level required for this project is CSP 4 or 5.** Contact Manufacturer's technical service department for specific surface preparation questions.
- H. The coating contractor is to examine the substrate to determine if it is in satisfactory condition to receive the specified floor system. Obtain coating contractor's written report listing conditions detrimental to performance of work in this specification. Do not proceed with the application of specified floor coating until unsatisfactory conditions have been corrected.

3.3 MIXING AND THINNING

- A. Mixing:
1. The base component and activator must be combined with power mixing. Hand mixing is not adequate.
 2. Scrape out the container of the activator to transfer as much material as possible.
 3. Use a suitable mixing blade which will not entrain air. Mix at 500-750 RPM for 1-3 minutes.
 4. Application must begin as soon as the material has been completely mixed.
- B. Thinning: Thinning is not required. Do not thin.

3.4 APPLICATION

- A. Weather Conditions:
 - 1. Apply when air and surface temperatures are between 60-80 degrees F (15-27 degrees C) and surface temperature is at least 5 degrees F (3 degrees C) above the dew point.
 - 2. The relative humidity should not be greater than 85 percent.
- B. Coating Application:
 - 1. Do not attempt to work out of the container. Immediately after mixing material, pour out the activated material in a long thin stripe across the top of the work section of floor. Use only the material that flows naturally out of the container.
 - 2. Do not scrape out the container of activated material or turn buckets upside down on floor to drain. Doing so may result with transfer of un-activated material to the floor which will result with soft spots in the coating.
 - 3. Install in accordance with manufacturer's instructions.
 - 4. Locate all flexible joints required.
 - 5. Provide accessories necessary for complete installation.
- C. Protection of Surfaces:
 - 1. The Coating Contractor shall be responsible for protecting all adjacent surfaces from spills, drips, or any other form of coating damage.
 - 2. The coating contractor and its subcontractors shall be responsible for removing spots or repairing damaged surfaces to the satisfaction of the Architect.

3.5 CLEAN-UP

- A. Clean-up shall be done to remove all spills, drips, overspray, or other unwanted coating from all surfaces not intended to be coated.
- B. All used rags, brushes, roller covers, and other application related materials shall be removed from the work site and disposed in a proper manner and in accordance with local waste regulations.
- C. All equipment, staging, ladders, and other contractor materials brought onto the jobsite by the contractor shall be removed at the conclusion of the job in a timely manner.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION