SECTION 09 67 23

RESINOUS FLOORING

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\*\* NOTE TO SPECIFIER \*\* Sherwin-Williams; Epoxy flooring, urethane slurry flooring, epoxy terrazzo flooring.  
This section is based on the products of Sherwin-Williams, which is located at:101 Prospect Ave.Cleveland, OH 44115Toll Free Tel: 800-4-SHERWIN (474-3794)Tel: 216-566-2000Fax: 216-566-1392Email: [request info (specifications@sherwin.com)](https://arcat.com/rfi?action=email&company=Sherwin-Williams&message=RE%253A%2520Spec%2520Question%2520(09675gen)%253A%2520&coid=35477&spec=09675gen&rep=&fax=216-566-1392)  
Web: <https://www.sherwin-williams.com/architects-specifiers-designers> | <https://www.uniflexroof.com>   
 [ [Click Here](https://arcat.com/company/sherwin-williams-35477) ] for additional information.  
Our innovative products, strong support of the specification community, and select team of highly skilled local installers have earned Sherwin-Williams seamless floor and wall systems a market leadership position.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Decorative broadcast epoxy flooring system. (Ceramic Carpet #400)
    2. MER (mechanical equipment room) waterproofing system. (EPO-FLEX MER I) (EPO-FLEX MER II)
    3. Urethane slurry flooring system. (Fastop 12S)
    4. Epoxy terrazzo. (#1100)
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ACI 503R - Adhesives for Concrete.
    2. ASTM International (ASTM):
       1. ASTM C 190 - Method of Test for Tensile Strength of Hydraulic Cement Mortars.
       2. ASTM C 293 - Standard Test Method for Flexural Strength of Concrete (Using Simple Beam With Center-Point Loading).
       3. ASTM C 307 - Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacings.
       4. ASTM C 579 - Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
       5. ASTM C 580 - Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
       6. ASTM C 884 - Standard Test Method for Thermal Compatibility Between Concrete and an Epoxy-Resin Overlay.
       7. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
       8. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics.
       9. ASTM D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
       10. ASTM D 2240 - Standard Test Method for Rubber Property-Durometer Hardness.
       11. ASTM D 4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
    3. ICRI - International Concrete Repair Institute, Inc.
    4. MIL-D-3134J - Military Specification: Deck Covering Materials (05 Oct 1988).
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Installation methods.
     3. System Data: Submit manufacturer's specifications on cured system and individual components of the Flooring System, including physical properties and performance properties and tests along with Material Safety Data Sheets. Each individual component of the system shall be evaluated on the basis of these standards. For any tests not listed in the manufacturer's standard nationally published data, the manufacturer shall supply the missing data accompanied by the independent testing laboratory's test results which prove compliance in accordance with the referenced standards. Furnish required number of sets of this information for review.
     4. Shop Drawings: Submit details of construction; include relationship with adjacent construction.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified complete sets of color chips representing manufacturer's full range of available colors and patterns.

\*\* NOTE TO SPECIFIER \*\* Insert number or range of colors to be available.

* + - 1. Submit manufacturer's standard color chart. Computerized custom color matching shall be available upon request. Furnish required number of sets of this information for review and selection.
    1. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.
       1. Submit a cured system sample which the Contractor has made for verification purposes and finish texture approval.
    2. Contractor Experience: The Contractor shall furnish a list of projects using either specified material or equivalent that they have installed during the last three years. Information shall include: project name, square footage, owner contact name with owner's address and phone number. Also, the contractor shall furnish resumes detailing the experience of key project personnel including supervisors and mechanics.
    3. Installer Certificates for Qualification: Signed by manufacturer certifying that installers comply with specified requirements.
    4. Manufacturer's Packing Slip: The Contractor shall submit a copy of the manufacturer's packing slip, tagged for the specific Project, along with calculations, signed by an officer of the primary material supplier demonstrating that the quantity of material furnished for the project will achieve the specified coverage and mil thickness.
    5. Maintenance Data: For maintenance manuals.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Obtain Flooring System materials from a single manufacturer with a minimum of five years verifiable experience providing materials of the type specified in this section.
     2. Installer Qualifications:
        1. Installation shall be performed by a manufacturer approved installer with skilled mechanics having not less than three years satisfactory experience in the installation of the type of system as specified in this section, and shall be approved in writing by the manufacturer of the flooring system.

\*\* NOTE TO SPECIFIER \*\* Epoxy Terrazzo Flooring System only. Delete if not required.

* + - 1. Installer shall be in good standing with the National Terrazzo Mosaic Association (NTMA).

\*\* NOTE TO SPECIFIER \*\* Epoxy Terrazzo Flooring System only. Delete if not required.

* + 1. LEED Submittal (for LEED V3 NC):
       1. Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content.
          1. Include statement indicating costs for each product having recycled content,
       2. Product Data Credit MR 5:1: For products manufactured within 500 miles of Project site.
          1. Include statement indicating costs for each product sourced and manufactured within 500 miles of Project site.
          2. Indicate location of material manufacturer and the travel distance from the manufacturer to Project site.
       3. Product Data for Credit EQ-4.1: Indicating VOC content measured in grams/liter and compliance with Green Seal GS-11 chemical content.
          1. Include letter of certification from manufacturer that adhesives proposed for use in the Project will comply with requirements of LEED N.C. 2.1 Credit EQ-4.1.
    2. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, from single source from single manufacturer. Provide secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from source recommended by manufacturer of primary materials.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mockups: Apply mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution. Do not cover up mockup area.
       1. Apply full-thickness mockups on 16 square feet (1.5 sq. meters) floor area selected by Architect.
       2. Simulate finished lighting conditions for Architect's review of mockups.
       3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
       4. Mockup shall demonstrate desired slip resistance for review and approval by General Contractor prior to installing project areas.
    2. Floor System Thickness Verification:

\*\* NOTE TO SPECIFIER \*\* Insert number of cores per 1000 sq. ft.

* + - 1. At the Owner's discretion, the Contractor shall take two 1 inch (24 mm) random cores per 1,000 sq. ft. (93 sq. meters) through the system into the substrate to verify proper system thickness. Cored areas less than specified thickness shall be removed and replaced or increased in thickness by the installing contractor, in a manner that does not affect the performance or integrity of the system. Cored areas which comply with the recommended system thickness shall be built-up to match the surrounding surface elevation prior to applying the seal coats. Cores taken and patched will be noticeable; therefore, cores shall be taken from areas where aesthetics are less critical. Cost associated with repair of cored areas that comply with specification thickness are the responsibility of the Owner.
  1. PRE-INSTALLATION MEETINGS
     1. Convene minimum two weeks prior to starting work of this section.
  2. DELIVERY, STORAGE, AND HANDLING
     1. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
     2. Primary system materials shall be delivered in the manufacturer's undamaged, unopened containers. Each container shall be clearly marked with the following:
        1. Product names and/or Numbers.
        2. Manufacturer's name.
        3. Component designation (A, B, etc.).
        4. Product Mix Ratio.
        5. Health and Safety Information.
        6. CHEMTREC Emergency Response Information.
     3. Provide equipment and personnel to handle the materials by methods which prevent damage.
     4. The Contractor shall promptly inspect direct jobsite material deliveries to assure that quantities are correct, comply with requirements and are not damaged.
     5. The Contractor shall be responsible for materials furnished and shall replace, at its expense, such materials that are found to be defective in manufacture or that have become damaged in transit, handling or storage.
     6. Store materials in accordance with manufacturer's instructions, with seals and labels intact and legible. Maintain temperatures within the required range. Do not use materials which exceed the manufacturer's maximum recommended shelf life.
     7. Handling: Handle materials to avoid damage.
  3. PROJECT CONDITIONS
     1. 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 recommended limits.
     2. The Contractor shall visit the jobsite prior to the installation of the Flooring System to evaluate substrate condition, including substrate moisture transmission, quantity and severity of cracking, and the extent of repairs needed. Substrate imperfections should be repaired only after mechanical preparation of the substrate. Surface preparation reveals most imperfections requiring repair. Concrete substrates shall be tested to verify that the moisture vapor transmission of the substrate does not exceed the Flooring System manufacturers' recommendations. Cost associated with repair, leveling and remediation of the substrate are the responsibility of the provider of the substrate.
     3. The Contractor shall exercise care during surface preparation and system installation to protect surrounding substrates and surfaces, as well as in-place equipment. The Contractor shall prepare the substrate to remove laitance and open the surface. This shall be achieved by light brush grit blasting. Surface profile achieved shall be similar to medium grit sandpaper and free from bond-inhibiting contaminants.
     4. Concrete subfloor tolerances shall be in accordance with ACI 302. Each drain in the installation area shall be working and raised or lowered to the actual finished elevation of the Flooring System.
     5. The minimum slab temperature shall be conditioned to 60 degrees F (16 degrees C) before commencing installation, during installation, and for at least 72 hours after installation is complete. The substrate temperature shall be at least 5 degrees F above the dew point during installation.
     6. Maintain lighting at a minimum uniform level of 50 or more foot candles in areas where the Flooring System is being installed.
     7. Leaks from pipes and other sources must be corrected prior to the installation of the Flooring System.
  4. SEQUENCING
     1. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
  5. WARRANTY
     1. The Contractor and the manufacturer shall furnish a standard guarantee of the Flooring System for a period of one year after installation. The labor and material guarantee shall include loss of bond and wear-through to the concrete substrate from normal use.
     2. Not included in the warranty are damage due to structural design deficiencies including but not limited to slab cracking from lateral, vertical or rotational movement, and gouging or other damage due to fork lifts, other equipment, delamination caused by vapor transmission, Acts of God, or other elements beyond the scope of protection of this system nor causes not related to the system materials.
     3. In case of a warranty claim, the Owner shall notify the manufacturer and Contractor in writing within 30 days of the first appearance of problems covered under this Warranty. The Owner will provide free and unencumbered access to the area during normal working hours for repairs.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Sherwin-Williams, which is located at:101 Prospect Ave.Cleveland, OH 44115Toll Free Tel: 800-4-SHERWIN (474-3794)Tel: 216-566-2000Fax: 216-566-1392Email: [request info (specifications@sherwin.com)](https://arcat.com/rfi?action=email&company=Sherwin-Williams&message=RE%253A%2520Spec%2520Question%2520(09675gen)%253A%2520&coid=35477&spec=09675gen&rep=&fax=216-566-1392);Web: <https://www.sherwin-williams.com/architects-specifiers-designers> | <https://www.uniflexroof.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. DECORATIVE BROADCAST EPOXY FLOORING SYSTEM
     1. Product: Ceramic Carpet #400, 1/8 inch (3 mm) Decorative Broadcast Epoxy Flooring System, as manufactured by Sherwin-Williams.
        1. Flooring system consists of 3579 Standard Primer / Binder as the primer, 3561 Epoxy Resin Glaze as the binder resin, 5900F Colored Quartz Aggregate, and 3746 Self-Leveling Epoxy as the grout.

\*\* NOTE TO SPECIFIER \*\* Delete seal coat not required.

* + - * 1. Seal Coat: 3746 Self-Leveling Epoxy
        2. Seal Coat: 4410 WB Polyurethane Gloss
        3. Seal Coat: 4411 WB Polyurethane Satin
    1. Typical Physical Properties

\*\* NOTE TO SPECIFIER \*\* Delete color provision not required.

* + - 1. Color: Pre-Blended Standard Colors.
      2. Color: Custom Color Blends Available.
      3. Hardness at 24 hours Shore D (ASTM D 2240): 70/65.
      4. Compressive strength (ASTM C 579): 12,000 psi
      5. Tensile Strength (ASTM C 307): 2,500 psi.
      6. Tensile Strength (ASTM D 638): 6,000 psi.
      7. Abrasion Resistance (ASTM D 4060, CS-17 Wheel, 1,000 cycles):90-100 milligrams lost.
      8. Flexural Strength (ASTM C 580): 4,500 psi.
      9. Flexural Strength (ASTM D 790): 10,000 psi.
      10. Adhesion: 300 psi.
      11. Adhesion (ACI 503R): Concrete Failure.
      12. Flammability: Self-extinguishing over concrete.
      13. Resistance Elevated Temperatures (MIL-D-3134J): No slip or flow at required temperature of 158 degree F (70 degrees C).
      14. Impact Resistance (MIL-D-3134J): Withstands 16 ft-lbs without cracking, delaminating or chipping
          1. ASTM D = Resin only.
          2. ASTM C = Mortar system.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. MECHANICAL EQUIPMENT ROOM WATERPROOFING SYSTEM

\*\* NOTE TO SPECIFIER \*\* Delete product option not required.

* + 1. Product: EPO-FLEX MER I System (1/16 inch (1.5 mm)) as manufactured by Sherwin-Williams.
       1. The Mechanical Equipment Room Waterproofing System consists of 3579 Standard Primer / Binder as optional (required if slab outgases) primer, one coat of 3555 EPO-FLEX HD Epoxy Coating as a waterproofing membrane, a second coat of 3555 EPO-FLEX HD Epoxy Coating as a wear course with 5310-8 Dry Silica (20-40 mesh) or other Hard Aggregate.
    2. Product: EPO-FLEX MER II System (3/32 inch (2.4 mm)) as manufactured by Sherwin-Williams.
       1. The Mechanical Equipment Room Waterproofing System consists of 3579 Standard Primer / Binder as primer, one coat of 3555 EPO-FLEX HD Epoxy Coating as a waterproofing membrane, a second coat of 3555 EPO-FLEX HD Epoxy Coating as a wear course with 5310-8 Dry Silica (20-40 mesh) or other Hard Aggregate, and 3746 Self-Leveling Epoxy as the seal coat.
    3. Typical Physical Properties (3555):
       1. Hardness at 24 hours Shore D (ASTM D 2240): 50/40.
       2. Tensile Strength (ASTM D 412): 1,700 psi.
       3. Elongation (ASTM D 412): 80%.
       4. Adhesion: 300 psi.
       5. Adhesion (ACI 503R): Concrete Failure.
       6. Abrasion Resistance (ASTM D 4060, CS-17 Wheel, 1,000 cycles): 100 milligrams lost.
       7. Flammability: Self-extinguishing over concrete.
       8. Thermal Cycling (ASTM C 884) 24 hours, -21 degree C to 25 degree C (-6 to 77 degrees F): No cracking.
          1. ASTM D = Resin only.
          2. ASTM C = Mortar system.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. URETHANE SLURRY FLOORING SYSTEM
     1. Product: Sherwin-Williams Fastop URETHANE SLURRY FLOORING SYSTEM as manufactured by Sherwin-Williams with Cove consists of:
        1. The total system thickness shall be a 1/4 inch (6 mm) nominal.
        2. Color and Pattern: As indicated from manufacturers listed offerings.

\*\* NOTE TO SPECIFIER \*\* Delete cove material not required.

* + - 1. Cove: 4040 FasTop Urethane Primer (Cove),
      2. Cove: 4060 FasTop Cove Base Binder Resin,
      3. Cove: 5055 FasTop Cove Base Aggregate (Cove),

\*\* NOTE TO SPECIFIER \*\* Slurry System.

* + - 1. Primer: 3477 Epoxy Water Emulsion Primer Sealer for outgassing,
      2. Binder Resin: 4080 FasTop 12S Binder Resin,
      3. Slurry Aggregate: 5080 FasTop 12S Aggregate
      4. Broadcast: 5310-8 Dry Silica Sand (20-40 Mesh or larger)

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

* + - 1. Seal: 4090TC FasTop 12 TC/M-Urethane Top Coating / 5095 FasTop 12 TC AGGREGATE.
    1. Typical Physical Properties:
       1. VOC Content of Resinous Flooring: Provide resinous flooring systems, for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
          1. Resinous Flooring: 100 g/L.
       2. Resinous Flooring: Abrasion-, impact- and chemical-resistant, high-performance, resin-based, monolithic floor surfacing designed to produce a seamless floor.
       3. Slip Resistance: Provide slip resistant finish.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. EPOXY TERRAZZO FLOORING SYSTEM
     1. Product: Epoxy Terrazzo #1100 Flooring System as manufactured by Sherwin-Williams.
        1. The Thin-set Epoxy Terrazzo Flooring System shall be #1100 Epoxy Thin-set Terrazzo with 3579 Penetrating Primer, 3520 Epoxy Terrazzo Matrix as the binder resin, 5270 Epoxy Filler, Marble Chips , 4503 Acrylic as the seal coat. System Primer: 3579 Epoxy Primer.
        2. Mortar Installation: 3520 as the binder resin 5270 Filler #0, #1 and #2 Marble Chips (#2 Marble Chips for a 3/8 inch System only).
        3. Grinding and Grout Coat: 3520 Terrazzo Binder Resin 5270 Filler.
        4. Seal Coat: 4503 Terrazzo Sealer.
     2. Typical Physical Properties at 73 degree F (23 degrees C) (unless otherwise noted):
        1. Compressive Strength (ASTM D695): 10,000 psi.
        2. Tensile Strength (ASTM D 638): 3,000 psi.
        3. Abrasion Resistance (ASTM 4060 70-90 mg lost.
        4. Flexural Strength (ASTM D 790 ): 4,500 psi.
        5. Bond Strength (ACI 503R): 300 psi.
        6. Flammability: Self-Extinguishing over concrete.
        7. Resistance to Elevated Temperatures (MIL-D-3134J): No slip or flow at required temperature of 158 degrees F (70 degrees C).
           1. ASTM C = Mortar.
           2. ASTM D = Resin Only.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   2. SURFACE PREPARATION
      1. For preparation of concrete substrates follow manufacturer's "Instruction for Concrete Surface Preparation" (Form G-1).

\*\* NOTE TO SPECIFIER \*\* Installation of Ceramic Carpet #400, MER and Epoxy Terrazzo #1100 Flooring System. Delete if not required.

* 1. INSTALLATION
     1. General: Apply each components of the flooring system in compliance with manufacturer's written installation instructions and strictly adhere to mixing and installation methods, recoat windows, cure times and environmental restrictions. The flooring system is to be installed directly over non-moving control joints and cracks which have been treated with EPO-FLEX epoxy, and the Flooring System shall terminate at the edge of isolation and expansion joints as designated by the Architect. Integral cove base shall be installed where specified in the drawings.
     2. Inspection: Prior to commencing Work, thoroughly examine all underlying and adjoining work, surfaces and conditions upon which Work is in any way dependent for perfect results. Report all conditions which affect Work. No "waiver of responsibility" for incomplete, inadequate or defective underlying and adjoining work, surfaces and conditions will be considered, unless notice of such unsatisfactory conditions has been filed and agreed to in writing before Work begins. Commencement of Work constitutes acceptance of surfaces. Test and report for moisture level in substrate to verify compliance with manufacturer's requirements. Do not proceed unless acceptable test results are achieved.
     3. Cracks:
        1. After preparation, evaluation of quantity and severity of cracks in concrete will determine the needed repairs.

\*\* NOTE TO SPECIFIER \*\* Coordinate with General Requirements. Delete if not required.

* + - 1. Contract Unit Pricing:
         1. Original bid assumes repair and treatment of \_\_\_\_ linear feet of cracks and control joints. Additional treatment is considered excessive and shall be bid on a per linear foot basis.
      2. For requirements pertaining to the treatment of cracks in concrete substrates, consult Manufacturer's publication, Concrete 102.
    1. Control Joints:

\*\* NOTE TO SPECIFIER \*\* Coordinate with General Requirements. Delete if not required.

* + - 1. Contract Unit Pricing:
         1. Original bid assumes repair and treatment of \_\_\_\_ linear feet of cracks and control joints. Additional treatment is considered excessive and shall be bid on a per linear foot basis.
      2. For requirements pertaining to the treatment of control joints in concrete substrates, follow manufacturer's publication, Concrete 103.
    1. Isolation/Expansion and Other Joints Subject to Movement
       1. All expansion joints shall be honored through the flooring system. For requirements pertaining to the above, follow manufacturer's publication, Concrete 105.

\*\* NOTE TO SPECIFIER \*\* Installation of urethane slurry flooring system. Delete if not required.

* 1. INSTALLATION
     1. Inspection: Prior to commencing Work, thoroughly examine all underlying and adjoining work, surfaces and conditions upon which Work is in any way dependent for perfect results. Report all conditions which affect Work. No "waiver of responsibility" for incomplete, inadequate or defective underlaying and adjoining work, surfaces and conditions will be considered, unless notice of such unsatisfactory conditions has been filed and agreed to in writing before Work begins. Commencement of Work constitutes acceptance of surfaces. Test and report for moisture level in substrate to verify compliance with manufacturer's requirements. Do not proceed unless acceptable test results are achieved.
     2. Surface Preparation: Remove all surface contamination, loose or weakly adherent particles, laitance, grease, oil, curing compounds, paint, dust and debris by blast track method or approved mechanical means (acid etch not allowed). If surface is questionable try a test patch. Create a minimum surface profile for the system specified in accordance with the methods described in ICRI No. 03732 to achieve profile numbers as follows:
        1. Thin film, to 10 mils: CSP-1 to CSP-3.
        2. Thin and medium films, 10 to 40 mils: CSP-3 to CSP-5.
        3. Self-leveling mortars, to 3/16 inch: CSP-4 to CSP-6.
        4. Mortars and laminates, to 1/4 inch or more: CSP-5 to CSP-9.
     3. Environmental Conditions:
        1. All applicators and all other personnel in the area of the Flooring System installation shall take all required and necessary safety precautions. Manufacturers' installation instructions shall be followed.
        2. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written instructions.
        3. Alkalinity and Adhesion Testing: Verify that concrete substrates have pH within acceptable range. Perform tests recommended by manufacturer. Proceed with application only after substrates pass testing.
        4. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.
        5. Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.
        6. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written instructions.
     4. Applications:
        1. Install resinous floor over properly prepared concrete surface in strict accordance with the manufacturer's directions.
           1. Install the primer and/or base coats over thoroughly cleaned and prepared concrete.
           2. Install topcoat over flooring after excess aggregate has been removed.
           3. Maintain a slab temperature of 60 degree F to 80 degree F (16 degrees to 27 degrees C) for 24 hours minimum before applying floor topping.
        2. Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.
           1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
           2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
           3. At substrate expansion and isolation joints, comply with resinous flooring manufacturer's written instructions.
        3. Sealant: Saw cut resinous floor topping at expansion joints in concrete slab. Fill saw cuts with sealant prior to final seal coat application. Follow manufacturer's written recommendations.
        4. Primer: Apply primer over prepared substrate at manufacturer's recommended spreading rate.
        5. Slip Resistant Finish: Provide grit for slip resistance.
        6. Topcoats: Apply topcoats in number indicated for flooring system and at spreading rates recommended in writing by manufacturer.
  2. CURING, CLEANING AND PROTECTION
     1. Cure the flooring system materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of the installation and prior to completion of the curing process.
     2. Protect the flooring system from damage and wear during other phases of the construction operation, using temporary coverings as recommended by the manufacturer, if required. Remove temporary covering just prior to final inspection.
     3. Clean the flooring system just prior to final inspection, using materials and procedures suitable to the system manufacturer.
     4. Test each cleaner, in a small area, utilizing your cleaning technique to determine if color, gloss or texture will be affected. This precaution will demonstrate the effect of your cleaner and technique. If no deleterious effects are observed, continue with the procedure. If deleterious effects do occur, modify the cleaning material and/or procedure. For recommendations regarding types of cleaners, contact the flooring system manufacturer.

END OF SECTION