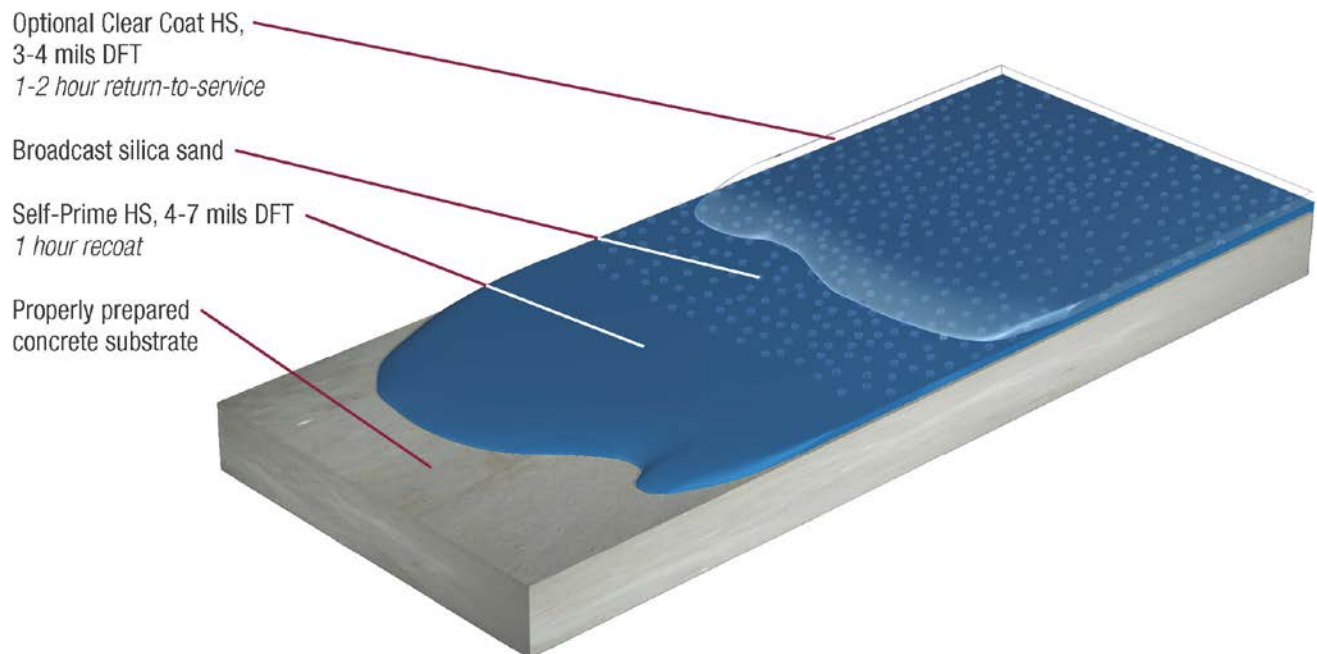


### SECTION 09 67 23: INDUSTRIAL RESINOUS FLOORING

#### FLEXMAR High-Build Silica Sand System

*7-11 mils DFT (with Optional Clear Coat)*



This guide specification is intended to assist the specifier in developing a project specification for the use of a Flexmar all-polyaspartic coating system, featuring **virtually no odor**, with **1-hour recoat** and **1- to 2-hour return-to-service after final coat**. It is not intended to be used as a stand-alone document, nor is it to be used without appropriate modifications. This guide specification must be carefully reviewed for appropriateness for a project, and edited accordingly to comply with project-specific requirements. For questions or assistance modifying this guide specification, contact the manufacturer.

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#### FLEXMAR Coatings, Inc.

P.O. Box 210  
New Kensington, PA 15068

Office: 724-339-1442  
Fax: 724-339-1465

[www.flexmarpolyaspartics.com](http://www.flexmarpolyaspartics.com)

**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Application of 0-VOC, high-build silica sand polyaspartic coating system.

**1.3 ACTION SUBMITTALS**

- A. Product Data: Submit manufacturer's technical data, application instructions, and recommendations for each polyaspartic floor coating component required.
- B. LEED Submittals:
  - 1. Product Data for Credit IEQ 4.2: For liquid-applied flooring components, documentation including printed statement of VOC content.
  - 2. Laboratory Test Reports for Credit IEQ 4: For flooring systems, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Samples for Initial Selection: Submit manufacturer's color charts showing full range of color selection for each type of exposed finish required.
- D. Samples for Verification: For each polyaspartic floor coating system required, submit 6-in.<sup>2</sup> (150-mm<sup>2</sup>) samples applied to a rigid backing to demonstrate color, texture, and finish of polyaspartic floor coatings systems.

**1.4 INFORMATION SUBMITTALS**

- A. Applicator Certificate: Submit official certificate indicating applicator's successful completion of manufacturer's training program.
- B. Material Certificates: Submit official manufacturer certificate for each polyaspartic floor coating system component.
- C. Material Test Reports: Submit polyaspartic floor coating system test report.

**1.5 CLOSEOUT SUBMITTALS**

- A. Maintenance Data: Submit manufacturer's care, cleaning, and maintenance guide to include in maintenance manuals.
- B. Warranty: Submit manufacturer's product warranty.

**1.6 QUALITY ASSURANCE**

- A. Applicator Qualifications: An applicator who has successfully completed manufacturer's training program for the application of specified polyaspartic floor coatings systems, and is currently an authorized applicator of manufacturer's coatings systems.
- B. Source Limitations: Obtain primary polyaspartic floor coating system 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.
- C. Mockups: Apply mockups to verify selections made under sample submittals, and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. Apply full-thickness mockups on 48-in.<sup>2</sup> (1,200-mm<sup>2</sup>) floor area selected by the Architect, Engineer, or Design Professional.
    - a. Include a 48-in. (1,200-mm) length of integral cove base with inside **[and outside]** corner, if specified by the Architect, Engineer, or Design Professional.
  - 2. Simulate finished lighting conditions for Architect's, Engineer's, or Design Professional's review of mockups.
  - 3. Approved mockups may become part of the completed work if undisturbed at time of Substantial Completion.

**1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver and store materials in manufacturer's original, undamaged packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.
- B. Store in clean, dry, protected location at normal room temperature, according to manufacturer's requirements.

**1.8 PROJECT CONDITIONS**

- A. Environmental Conditions: Comply with manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting polyaspartic floor coatings system application.
- B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during polyaspartic floor coating system application.
- C. Close spaces to traffic during polyaspartic floor coating system application, and for not less than 24 hours after application, unless manufacturer recommends a longer period.

**1.9 WARRANTY**

- A. Manufacturer's standard **[10-year residential] [5-year commercial]** warranty against product defects for original owner.

**PART 2 - PRODUCTS****2.1 MANUFACTURERS**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Flexmar Coatings, Inc. named product or comparable product by one of the following:
1. **[Insert manufacturer's name].**

**2.2 MATERIALS**

- A. Abrasion, impact-, and chemical-resistant, commercial- and industrial, silica-sand-filled, polyaspartic-aliphatic-polyurea-based, monolithic floor surfacing designed to produce a seamless floor **[and integral cove base]**.
1. Basis-of-Design Product: Subject to compliance with requirements, provide FLEXMAR Coatings High-Build Silica Sand System with "Self-Prime HS" pigmented polyaspartic coating with silica sand broadcast and optional "Clear Coat HS" clear polyaspartic sealer for commercial and industrial floor coatings system, or comparable product by one of the following:
    - a. **[Insert manufacturer's name].**
- B. System Characteristics:
1. Color and Pattern: **[As selected by Architect, Engineer, or Design Professional] [As indicated by product designation listed above] [Match Architect's, Engineer's, or Design Professional's sample]**.
  2. Wearing Surface: Textured for slip resistance where required, otherwise standard manufacturer's surface as shown by sample.
  3. Overall System Thickness: 7-11 mils DFT, with optional clear coat.
  4. Dry Time: 1- to 2-hour return-to-service after final coat; 1-hour recoat between coats.
- C. Body Coats: Flexmar Coatings Self-Prime HS pigmented polyaspartic coating.
1. Resin: Polyaspartic aliphatic polyurea.
  2. Formulation Description: High solids.
  3. VOC Content: 0 VOC, virtually no odor.
  4. Application Method: Roller, squeegee, or magic trowel.
  5. Thickness of Coats: 4 to 7 mils DFT.
  6. Number of Coats: One.
  7. Aggregates: Broadcast silica sand followed by backroll.

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- D. Optional Topcoat: Flexmar Coatings Clear Coat HS clear polyaspartic sealer.
1. Resin: Polyaspartic aliphatic polyurea.
  2. Formulation Description: High solids.
  3. VOC Content: 0 VOC, virtually no odor.
  4. Type: Clear.
  5. Finish: **[Matte] [Gloss]**.
  6. Number of Coats: One, optional.
  7. Thickness: 3 to 4 mils DFT.
- E. System Physical Properties: Provide polyaspartic floor coating system with the following minimum physical property requirements when tested according to test methods indicated:
1. Adhesion to Concrete: 300 psi (2068 kPa) concrete cohesive failure per ASTM-D 4541 Elcometer.
  2. Tensile Strength: 4,500 psi (31,026 kPa) per ASTM-D 412.
  3. Falling Sand Abrasion Resistance: ASTM-D 968.  
Clear Coat: 32 quarts (30 liters) sand/dry mil.  
Color Coat: 40 quarts (38 liters) sand/dry mil.
  4. Taber Abrasion: 0.34-0.43 grain (22-28 mg) weight loss per ASTM-D 4060, CS-17 wheel, 35.3 oz (1,000 g) load, 1,000 rev.
  5. Flexibility Mandrel Bend: No cracking or peeling, per ASTM-D 522, 1/8 in. (3.2 mm).
  6. Impact: 160/160 in.-lb direct/reverse, no cracking per ASTM-D 2794.
  7. Hardness: 77 Shore D per ASTM-D 2240.
  8. Flammability: Self-extinguishing per ASTM-D 635.
- F. System Chemical Resistance: Test specimens of cured polyaspartic floor coatings systems are unaffected when tested according to manufacturer's Chemical Resistance Chart per ASTM-D 1308 spot testing.

## **PART 3 – EXECUTION**

### **3.1 PREPARATION**

- A. General: Prepare and clean substrates according to manufacturer's written instructions for substrate indicated. Provide clean, dry substrate for application.

- B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with polyaspartic floor coatings.
  - 1. Roughen concrete substrates as follows:
    - a. Grind surfaces with an apparatus that abrades the concrete surface to a profile as specified by system application guide.
  - 2. Repair damaged and deteriorated concrete according to polyaspartic floor coating manufacturer's written instructions.
  - 3. Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.
    - a. Perform anhydrous calcium chloride test, ASTM-F 1869. Proceed with application of polyaspartic floor coating only after substrates have maximum moisture-vapor-emission rate of **[3 lb of water/1000 ft.<sup>2</sup> (1.36 kg of water/92.9 m<sup>2</sup>)]** of slab area in 24 hours.
    - b. Perform plastic sheet test, ASTM-D 4263. Proceed with application only after testing indicates absence of moisture in substrates.
    - c. Perform relative humidity test using in situ probes, ASTM-F 2170. Proceed with installation only after substrates have a maximum **[75]** percent relative humidity level measurement.
  - 4. 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.
- C. Polyaspartic Materials: Mix components and prepare materials according to manufacturer's written instructions.
- D. Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.
- E. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through polyaspartic floor coating according to manufacturer's written instructions.

### 3.2 APPLICATION

- A. General: Apply components of polyaspartic floor coating 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 polyaspartic floor coating system to substrate, and optimum inter-coat adhesion.
  - 2. Cure polyaspartic floor coating system components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
  - 3. At substrate expansion and isolation joints, comply with manufacturer's written instructions.

- B. Apply body coat over prepared substrate at manufacturer's recommended spreading rate.
- C. Integral Cove Base: Apply cove base mix to wall surfaces before applying flooring. Apply according to manufacturer's written instructions and details including those for taping, mixing, priming, troweling, sanding, and topcoating of cove base. Round internal and external corners.
  - 1. Integral Cove Base: **[4 in. (100 mm)]** high.
- D. Apply topcoats in number indicated for flooring system and at spreading rates recommended in writing by manufacturer.

### **3.3 CURING, PROTECTION, AND CLEANING**

- A. Cure according to manufacturer's instructions.
- B. Protect polyaspartic floor coating system from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by manufacturer.
- C. Clean polyaspartic floor coating system using materials and procedures recommended by manufacturer.

**END OF SECTION**