FGP Polyurea Flake System

High-Tensile Decorative Broadcast Flooring System

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. High-performance polyurea flake broadcast flooring system applied to concrete substrates.
2. Rapid-cure flexible decorative flooring system.
3. Seamless textured polyurea flooring system for impact and mechanical loading environments.
4. Resinous flooring system designed for flexibility, impact resistance, thermal cycling, and abrasion resistance.

B. Related Requirements:

1. Division 01 Sections for administrative, procedural, and temporary requirements.
2. Section 03 30 00 – Cast-in-Place Concrete.
3. Section 07 92 00 – Joint Sealants.
4. Section 09 05 61 – Common Work Results for Flooring Preparation.

1.2 SUBMITTALS

A. Product Data

1. Manufacturer's Technical Data Sheets (TDS).
2. Safety Data Sheets (SDS).
3. Installation instructions.

B. Shop Drawings

1. Flooring layout.
2. Terminations and transitions.
3. Interface with adjacent materials.

C. Samples for Initial Selection

1. Manufacturer's standard flake blend selections.

D. Samples for Verification

1. Minimum 6-inch square sample illustrating color, texture, gloss, and finish.

E. Qualification Data

1. Installer qualifications.
2. Manufacturer qualifications.

F. Field Quality Control Reports

1. Moisture testing reports.

2. Surface preparation verification.

G. Closeout Submittals

1. Maintenance data.
2. Warranty documentation.

1.3 QUALITY ASSURANCE

A. Installer Qualifications

1. Installer shall be approved by manufacturer.
2. Minimum five (5) years documented experience installing comparable polyurea flooring systems.
3. Employ trained personnel familiar with specified products and application methods.

B. Manufacturer Qualifications

1. Manufacturer shall specialize in resinous flooring systems.
2. Provide documentation of successful comparable installations.

C. Mockups

1. Install minimum 100 Ft^2 mockup demonstrating texture, preparation, and workmanship.
2. Approved mockup may remain as part of completed work.

D. Preinstallation Conference

1. Review substrate conditions.
2. Review environmental conditions.
3. Review sequencing and protection requirements.

1.4 DELIVERY, STORAGE, AND HANDLING

1. Deliver materials in original unopened containers with labels intact.
2. Store materials in clean, dry, temperature-controlled environment.
3. Protect materials from freezing, moisture, excessive heat, and direct sunlight.
4. Condition materials to 65°F–75°F prior to installation.

1.5 PROJECT CONDITIONS

A. Environmental Limitations

1. Maintain ambient temperature between 60°F and 85°F.
2. Maintain substrate temperature between 50°F and 85°F.
3. Relative humidity shall not exceed 80%.
4. Substrate temperature shall remain minimum 5°F above dew point.
5. Provide adequate ventilation during installation and curing.

B. Lighting

1. Provide permanent lighting or equivalent illumination for installation and inspection.

C. Substrate Conditions

1. Concrete compressive strength shall be minimum 3,000 psi.
2. Substrate shall be structurally sound and free of contaminants.
3. Surface profile shall comply with ICRI CSP 2-4.
4. Concrete pH shall be between 7.0 and 10.0.
5. Moisture conditions exceeding basecoat tolerances shall require moisture mitigation primer.

1.6 WARRANTY

A. Manufacturer Warranty

1. Provide manufacturer's standard written warranty against material defects.

B. Installer Warranty

1. Provide written workmanship warranty for one (1) year.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product

1. Floorguard Products.

B. Source Limitations

1. Obtain primary flooring system materials from single manufacturer.

C. Substitutions

1. Comply with Division 01 requirements.

2.2 RESINOUS FLOORING SYSTEM

A. System Description

1. FGP Polyurea Flake System.
2. High-performance rapid-cure polyurea flooring system engineered for superior flexibility, tensile strength, impact resistance, and abrasion resistance in demanding environments. Polyurea matrix technology provides enhanced elongation and accommodates low to moderate dynamic movement and thermal cycling while maintaining strong adhesion and long-term durability under service conditions.

B. System Components

1. **Primer (As Required)**
   - **a.** MV 2112 Moisture Primer.
   - **b.** Applied at 90 Ft^2/Gal.
   - **c.** Thickness: 18 mils.

   d. Required when MVE exceeds basecoat tolerances.
2. **Basecoat**
   a. Pigmented Polyurea Basecoat.
   b. Applied at 180–200 Ft^2/Gal.
   c. Thickness: 8–9 mils.
3. **Aggregate Broadcast**
   a. Decorative Vinyl Flake.
   b. Full broadcast to refusal.
   c. Coverage rate: 0.13 lbs/Ft^2.
4. **Topcoat**
   a. Clear Aspartic 85.
   b. Applied at 135–150 Ft^2/Gal.
   c. Thickness: 10.7–13 mils.

2.3 PERFORMANCE REQUIREMENTS

A. System Thickness

1. 35–50 mils nominal.

B. Finish

1. Textured Gloss Finish.

C. Physical Properties

1. Hardness: Shore D 84 per ASTM D2240.
2. Compressive Strength: 7,000 psi per ASTM D695.
3. Tensile Strength: 1,950 psi per ASTM D638.
4. Tear Strength: 2.1 lbs-f per ASTM D1004.
5. Elongation: 65% per ASTM D638.
6. Adhesion: 400 psi concrete failure per ASTM D7234.
7. Abrasion Resistance: 20 mg loss per ASTM D4060.
8. Impact Resistance: 160 in-lbs per ASTM D2794.
9. Moisture Vapor Emission Tolerance: 3 lbs/1,000 Ft^2/24 hrs per ASTM F1869.

D. Slip Resistance

1. 0.80–0.90 DCOF per ANSI A326.3.

E. Fire Performance

1. Class B per ASTM E84.

F. Cure Schedule

1. Light Foot Traffic: 12 hours.
2. Heavy Traffic: 48 hours.
3. Full Cure: 5–7 days.

2.4 ACCESSORIES

A. Provide manufacturer's standard accessory materials compatible with flooring system.

B. Accessories may include:

1. Moisture Mitigation Systems.
2. Crack Repair Materials.
3. Joint Fill Materials.
4. Cove Base Materials.
5. Edge Detailing Materials.
6. Anti-slip additives.
7. Termination Strips.

PART 3 – EXECUTION

3.1 EXAMINATION

1. Verify substrates are acceptable for installation.
2. Proceed only after unsatisfactory conditions are corrected.

3.2 PREPARATION

1. Remove contaminants including oil, grease, curing compounds, sealers, and laitance.
2. Mechanically prepare substrate to achieve required CSP profile.
3. Perform moisture testing:
   a) ASTM F1869.
   b) ASTM F2170.
4. Repair cracks, spalls, and voids prior to installation.
5. Vacuum and remove all dust and debris.

3.3 INSTALLATION

1. Install flooring system in accordance with manufacturer written instructions.
2. Apply primer, basecoat, broadcast aggregate, and topcoat at specified coverage rates and film thicknesses.
3. Broadcast decorative flake to full refusal.
4. Remove excess aggregate prior to topcoat application.
5. Maintain uniform application without puddles, roller marks, or dry areas.
6. Apply subsequent coats within manufacturer recommended recoat windows.
7. Finished surface shall be seamless, dense, textured, and uniform in appearance.

3.4 FIELD QUALITY CONTROL

1. Inspect completed flooring for uniformity, texture, thickness, and appearance.
2. Verify proper cure prior to opening to traffic.
3. Repair or replace defective work.

3.5 CLEANING AND PROTECTION

1. Remove debris and clean finished surfaces.
2. Protect installed flooring from damage during construction.
3. Restrict traffic during cure schedule.
4. Use pH-neutral cleaners for routine maintenance.
5. Avoid harsh solvents, caustic cleaners, and abrasive cleaning pads unless approved.
6. Reapplication of finish coats may be required over time due to abrasion, UV exposure, chemical exposure, and traffic wear.

A. Limitations

1. System has limited tolerance for high-load point impacts or steel-wheel traffic.
2. System is not suitable for severe structural slab movement or active cracking substrates.
3. Moisture vapor conditions exceeding tolerances require moisture mitigation primer.
4. System is not recommended for continuous chemical immersion or aggressive spill zones.

END OF SECTION