

FGP Heavy-Duty Solid Industrial System

Seamless Epoxy System for Operational & Maintenance Environments

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Heavy-duty seamless epoxy flooring system applied to concrete substrates.
2. High-solids industrial epoxy flooring system.
3. Smooth high-gloss chemical-resistant flooring system.
4. Resinous flooring system designed for operational, maintenance, manufacturing, and industrial service environments.

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 color selections.

D. Samples for Verification

1. Minimum 6-inch square sample illustrating color, 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 industrial resinous 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 Ft² mockup demonstrating preparation, texture, 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 Heavy-Duty Solid Industrial System.
2. High-solids seamless epoxy flooring system designed for industrial environments requiring chemical resistance, abrasion resistance, compressive strength, and long-term durability. System provides dense, non-porous monolithic finish with strong adhesion and resistance to industrial agents, staining, and routine service wear.

B. System Components

1. Primer (As Required)
 - a. MV 2112 Moisture Primer.
 - b. Applied at 90 Ft²/Gal.
 - c. Thickness: 18 mils.
 - d. Required when MVE exceeds basecoat tolerances.
2. Basecoat

- a. Pigmented DT 454 Epoxy.
- b. Applied at 135–160 Ft²/Gal.
- c. Thickness: 10–12 mils.
3. Build Coat
 - a. Pigmented DT 454 Epoxy.
 - b. Applied at 80–100 Ft²/Gal.
 - c. Thickness: 16–20 mils.
4. Topcoat
 - a. Pigmented Aspartic 100.
 - b. Applied at 135–160 Ft²/Gal.
 - c. Thickness: 10–12 mils.

2.3 PERFORMANCE REQUIREMENTS

A. System Thickness

1. 46–66 mils nominal.

B. Finish

1. Smooth High-Gloss.

C. Physical Properties

1. Hardness: Shore D 82 per ASTM D2240.
2. Compressive Strength: 12,450 psi per ASTM D695.
3. Tensile Strength: 9,400 psi per ASTM D638.
4. Flexural Strength: 10,300 psi per ASTM D790.
5. Gloss Index: 90 @ 60° per ASTM D112.
6. Adhesion: 450 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 Ft²/24 hrs per ASTM F1869.

D. Slip Resistance

1. 0.45–0.55 DCOF per ANSI A326.3.

E. Fire Performance

1. Class B per ASTM E84.

F. Cure Schedule

1. Light Foot Traffic: 24 hours.
2. Heavy Traffic: 72 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, build coat, and topcoat at specified coverage rates and film thicknesses.
3. Maintain uniform application without puddles, roller marks, or dry areas.
4. Apply subsequent coats within manufacturer recommended recoat windows.
5. Finished surface shall be smooth, seamless, and uniform in appearance.

3.4 FIELD QUALITY CONTROL

1. Inspect completed flooring for uniformity, gloss level, 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.
6. Reapplication of finish coats may be required over time due to abrasion, UV exposure, chemical exposure, and traffic wear.

END OF SECTION