FGP Grind & Seal System

Sealed Concrete Protective Surface System

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Mechanically ground and sealed concrete flooring system.
2. High-performance aliphatic urethane sealed concrete system.
3. Smooth gloss or low-gloss protective concrete finish.
4. Cost-effective sealed concrete flooring system for light to moderate 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 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 finish selections.

D. Samples for Verification

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

E. Qualification Data

1. Installer qualifications.
2. Manufacturer qualifications.

F. Field Quality Control Reports

1. 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 concrete polishing or sealed concrete systems.
3. Employ trained personnel familiar with specified products and installation techniques.

B. Manufacturer Qualifications

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

C. Mockups

1. Install minimum 100 Ft^2 mockup demonstrating preparation, gloss level, 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 1-2.
4. Concrete pH shall be between 7.0 and 10.0.
5. Moisture conditions shall comply with manufacturer recommendations.

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 Grind & Seal System.
2. Mechanically ground concrete system finished with a high-performance topical aliphatic urethane sealer designed to enhance durability, stain resistance, cleanability, and appearance. System provides a cost-effective alternative to full mechanical polishing while improving surface protection and reducing porosity for light to moderate service environments.

B. System Components

1. Surface Preparation
    a. Mechanically ground concrete substrate.
    b. Surface profile: CSP 1-2.
2. Seal Coat
    a. Aliphatic Urethane.
    b. Applied at 300–350 Ft^2/Gal.

   c. Thickness: 4.6–5 mils.
3. Topcoat
   a. Aliphatic Urethane.
   b. Applied at 300–350 Ft^2/Gal.
   c. Thickness: 4.6–5 mils.

2.3 PERFORMANCE REQUIREMENTS

A. System Thickness

1. 9–10 mils nominal.

B. Finish

1. Smooth Gloss or Low-Gloss.

C. Physical Properties

1. Gloss Index:
   a) Gloss Finish: >70 @ 60° per ASTM D112.
   b) Low-Gloss Finish: <20 @ 60° per ASTM D112.
2. Flexibility:
   a) Passes 1/8-inch mandrel per ASTM D1737.
3. Adhesion:
   a) Greater than 320 psi concrete failure per ASTM D7234.
4. Abrasion Resistance:
   a) Gloss Finish: 21 mg loss per ASTM D4060.
   b) Low-Gloss Finish: 23 mg loss per ASTM D4060.
5. Impact Resistance:
   a) Gloss Finish: 121 in-lbs per ASTM D2794.
   b) Low-Gloss Finish: 161 in-lbs per ASTM D2794.
6. Moisture Vapor Emission Tolerance:
   a) 3 lbs/1,000 Ft^2/24 hrs per ASTM F1869.

D. Slip Resistance

1. Gloss Finish: 0.40–0.45 DCOF per ANSI A326.3.
2. Low-Gloss Finish: 0.50–0.60 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: 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. Crack Repair Materials.
2. Joint Fill Materials.
3. Edge Detailing Materials.
4. Transition Materials.
5. Surface Densifiers (optional).
6. Anti-slip additives (optional).

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 grind 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 seal coats at specified coverage rates and film thicknesses.
3. Maintain uniform application without puddles, roller marks, or dry areas.
4. Apply topcoat within manufacturer recommended recoat windows.
5. Finished surface shall be uniform in appearance and gloss level.

3.4 FIELD QUALITY CONTROL

1. Inspect completed flooring for uniformity, gloss level, texture, 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 sealer or topcoat may be required over time due to abrasion, UV exposure, chemical exposure, and traffic wear.

END OF SECTION