FGP Medium-Duty Urethane Cement System

Thermal and Moisture-Resistant System for Process Environments

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Medium-duty urethane cement flooring system applied to concrete substrates.
2. Thermal shock-resistant urethane cement flooring system.
3. Moisture-tolerant seamless industrial flooring system.
4. Textured urethane cement flooring system designed for processing, washdown, sanitation, and moisture-exposed 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, texture, 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 urethane cement flooring systems.
3. Employ trained personnel familiar with specified products and installation 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 3-5.
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 Medium-Duty Urethane Cement System.
2. High-build thermal shock-resistant urethane cement flooring system designed for durability, hygiene, and long-term performance in processing and washdown environments. Self-leveling formulation provides dense seamless finish with resistance to moisture, chemicals, abrasion, and moderate mechanical stress while maintaining dimensional stability under thermal cycling and sanitation procedures.

B. System Components

1. Basecoat
    a. Urethane Cement Slurry.

   b. Applied at 36 Ft^2/Kit.
   c. Thickness: 1/8-inch (125 mils).
2. Aggregate Broadcast
   a. 20/40 mesh silica sand.
   b. Broadcast to full refusal.
   c. Coverage rate: 0.50 lbs/Ft^2.
3. Topcoat
   a. Pigmented Aspartic 100.
   b. Applied at 120 Ft^2/Gal.
   c. Thickness: 13 mils.

2.3 PERFORMANCE REQUIREMENTS

A. System Thickness

1. 187 mils nominal (3/16-inch).

B. Finish

1. Solid Color Textured Gloss.

C. Physical Properties

1. Hardness: Shore D 76 per ASTM D2240.
2. Compressive Strength: 8,368 psi per ASTM C579.
3. Tensile Strength: 1,547 psi per ASTM C307.
4. Flexural Strength: 2,246 psi per ASTM C580.
5. Elongation: 5% per ASTM D638.
6. Adhesion: 450 psi concrete failure per ASTM D7234.
7. Abrasion Resistance: 20 mg loss per ASTM D4060.
8. Impact Resistance: 175 in-lbs per ASTM D2794.
9. Moisture Vapor Emission Tolerance: 15 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. Foot Traffic: 24 hours.
2. Vehicular/Equipment 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. Joint Fill Materials.
2. Cove Base Materials.
3. Edge Detailing Materials.
4. Drain Integration Components.
5. Transition 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 urethane cement materials at specified coverage rates and film thicknesses.
3. Maintain uniform application and consistent aggregate broadcast texture.
4. Broadcast silica aggregate to full refusal.
5. Remove excess aggregate prior to topcoat application.
6. Apply topcoat 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, chemical exposure, sanitation procedures, UV exposure, and traffic wear.

END OF SECTION