FGP UC Quartz System

Industrial-Grade Decorative Urethane Cement Quartz System

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Heavy-duty urethane cement quartz broadcast flooring system applied to concrete substrates.
2. Thermal shock-resistant high-traction flooring system.
3. Seamless quartz broadcast resinous flooring system for severe service environments.
4. Resinous flooring system designed for food processing, sanitation, manufacturing, and continuous wet-service conditions.

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 quartz 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 urethane cement quartz 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 3-5.
4. Concrete pH shall be between 7.0 and 10.0.
5. Moisture conditions shall not exceed:
   a) 15 lbs/1,000 Ft^2/24 hrs MVER per ASTM F1869.
   b) Manufacturer recommended in-slab RH limits per ASTM F2170.

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 UC Quartz System.
2. High-performance urethane cement quartz flooring system engineered for severe service environments requiring abrasion resistance, thermal shock resistance, slip resistance, and moisture tolerance. Dense monolithic quartz broadcast surface provides long-term durability under continuous industrial traffic, washdown procedures, sanitation requirements, and thermal cycling conditions while maintaining strong adhesion and chemical resistance.

B. System Components

1. **Basecoat**
   - **a.** Urethane Cement Slurry.

   - **b.** Applied at 36 Ft^2/Kit.
   - **c.** Thickness: 1/8-inch.
2. **Aggregate Broadcast #1**
   - **a.** Colored Quartz Aggregate.
   - **b.** Broadcast to full refusal.
   - **c.** Coverage rate: 0.50 lbs/Ft^2.
3. **Build Coat**
   - **a.** Clear HyperREZ UV.
   - **b.** Applied at 100–120 Ft^2/Gal.
   - **c.** Thickness: 13–16 mils.
4. **Aggregate Broadcast #2**
   - **a.** Colored Quartz Aggregate.
   - **b.** Broadcast to full refusal.
   - **c.** Coverage rate: 0.50 lbs/Ft^2.
5. **Topcoat**
   - **a.** Clear Aspartic 100.
   - **b.** Applied at 120 Ft^2/Gal.
   - **c.** Thickness: 13 mils.

2.3 PERFORMANCE REQUIREMENTS

A. System Thickness

1. 187.5 mils nominal (3/16-inch).

B. Finish

1. Textured Gloss Finish.

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. Coefficient of Thermal Expansion: 1.8×10^{-5} in/in/F per ASTM C531.
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. 0.90–1.05 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. Cove Base Materials.
2. Joint Fill Materials.
3. Edge Detailing Materials.
4. Drain Integration Components.
5. Integral Cove Systems.
6. Termination Strips.
7. Anti-slip additives.
8. Moisture Mitigation Systems where required.

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 slurry, build coat, aggregate broadcasts, and topcoat at specified coverage rates and film thicknesses.
3. Broadcast quartz aggregate to full refusal at each specified layer.
4. Remove excess aggregate prior to application of subsequent coats.
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, sanitation procedures, and traffic wear.

A. Limitations

1. System is not a waterproofing membrane for hydrostatic pressure conditions.
2. Performance may be reduced in areas with constant chemical immersion.
3. Thermal resistance is limited to designed service temperature ranges.
4. System is not suitable for continuous immersion or highly concentrated chemical exposure.

END OF SECTION