Resinous Flooring Specification
CastorCrete SL-CQ
Division 9 Finishes
Section 09 67 23 - Resinous Flooring

NOTE TO SPECIFIER:

CastorCrete SL-CQ is a trowel-applied polyurethane cement mortar with an aesthetic colored quartz broadcast aggregate topping system that is installed at 3/16 inch (4.8 mm) to3/8 inch (9.5 mm) to protect concrete from extreme physical and chemical abuse. It is very resistant to impact and abrasion, and stands up to steel wheeled cart traffic. It is unaffected by hot cooking oils, animal fats and most solvents. CastorCrete SL-CQ has a been formulated to compensate for the difference in the co-efficient of thermal expansion of concrete. The concrete must be "keyed" to maintain adhesion when subjected to the thermal shock of freezing or hot water or steam cleaning. It can be used at constant service temperatures up to 200°F* (93^{0}C)*. CastorCrete SL-CQ can be purchased with an anti-microbial additive to inhibit the growth of fungi and other micro-organisms. It is manufactured by Arizona Polymer Flooring. Note: * The constant service temperature upper limits will be limited by the topping system chemistry.

PART 1 – GENERAL

1.1 Related Work Specified in Other Sections (Delete if Not Applicable):

1.1.1 CastorCrete SL-CQ bonded direct to concrete. The portland cement concrete substrate shall be placed, finished and leveled in accordance with industry standards.

a. New portland cement concrete shall be placed in accordance with American Concrete Institute, ACI 302.2R Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.
b. Per ACI 302.2R the new concrete is to be placed directly on the subgrade moisture barrier in accordance with ASTM E1745 Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.
c. Existing portland cement concrete must be cored to determine if it was placed (in accordance with ACI 302.2R) on an adequate positive side moisture barrier. If not, the existing concrete surface will most likely require a positive side moisture mitigation primer.

1.1.2 Testing Moisture Levels and Allowable Moisture Limits:

a. Moisture Vapor Transmission testing per ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Substrate Using Anhydrous Calcium Chloride. Limit is ten pounds per 1,000 square feet (92.9 square meters) in 72 hours. If the moisture limit exceeds the manufacturer's published limits a manufacturer's approved moisture mitigation primer shall be required.
b. Relative Humidity testing per ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. Limit is a Relative Humidity of 85% or less in 72 hours. If the relative humidity limit is exceeded a manufacturer's approved moisture mitigation primer shall be required.

1.1.3 Concrete Condition:

a. A maximum height variation not to exceed 1/4 inch (6.35 mm) in 10 feet (3.05 meters).
b. No curing agents, other additives and contaminates which might prevent a bond must be removed.
c. Concrete is to be free of sodium silicate and potassium silicate sealers or densifiers. If they are present they must be removed.
d. Concrete or cementitious overlayments must be sound and durable, if not they must be repaired.

1.2 Quality Assurance:

1.2.1 Acceptable Manufacturer:

a. Materials shall meet or exceed the Specification minimum or maximum physical and mechanical properties.
b. Materials shall be manufactured by single manufacturer.
c. Material manufacturer must provide Application Instructions, clearly stating that the submitted products meet the requirements of the Specification.
d. Alternative material suppliers must submit Technical Data Sheet, Application Instructions and Certification of Compliance at least twenty-eight (28) days prior to bid. Submittals made after the required stated lead-time, shall be considered non-responsive and rejected.

1.2.2 Acceptable Installer:

a. Acceptable installers shall have a written endorsement from the manufacturer stating that they are qualified to install the materials in this specification.
b. Acceptable installers shall submit a letter from the material manufacturer and signed by an officer of the company stating that the installer is in good financial standing with the material manufacturer.
c. Acceptable installer shall perform all work in accordance with the material manufacturer's Application Instructions.
d. The installer must furnish a detailed list of projects of similar magnitude to the one specified that they have completed in the last three years. The package must include a list of specific contacts, job titles, addresses and the phone number of contacts.

1.3 Submittal:

1.3.1 Samples:

a. The installer shall submit a maximum of three samples, minimum 6 inch by 6 inch (15.2 cm by 15.2 cm) for each color specified and the samples shall be clearly labeled.
b. Slip-resistance surfacing systems must meet ANSI (American National Standard Institute) and

NFSI (National Floor Safety Institute) B101.3 Test Method for Measuring Wet DCOF (dynamic coefficient of friction) of Common Hard-Surface Floor Materials, a. incline surfaces >0.45; b. level surfaces >0.42.

1.3.2 Maintenance Literature:

a. The installer shall submit a copy of the material manufacturer's recommended care and maintenance procedures.

1.3.3 Quality Assurance Certification:

a. Material shall be delivered to the job-site in unopened containers, properly labeled by the supplier, including product name, component(s), batch or lot number.
b. Material manufacturer shall furnish through the installer, current Safety Data Sheets, which shall comply with current state, providence, federal government or military requirements.

1.4 Delivery, Storage and Handling:

1.4.1 Delivery of Material:

a. Material shall be delivered to the job-site undamaged and protected from damage after delivery by the General Contractor or the installer.
b. Material shall be delivered to the job-site in unopened containers, properly labeled by the manufacturer and with the proper Safety Data Sheet per 1.3.3.
c. Proper Labels, include:
    1) Manufacturer's Name and Address
    2) Product Name and/or Number
    3) Component Reference'
    4) Mix Ratio (if applicable)
    5) CHEMTREC Emergency Response Information
    6) Lot or Batch Number(s)

1.4.2 Storage of Material:

a. Materials shall be stored in a covered area, out of the elements (including direct sunlight) that is clean, dry and heated (if required) and maintained between 60^0F to 90^0F (15.6^0C to 32.2^0C).

1.4.3 Handling:

a. Material shall be handled only by the approved installer, in accordance with industry standards and compliance with Safety Data Sheet(s) requirements.

1.5 Access:

1.5.1 Installer shall be provided free and unencumbered access to all areas deemed necessary

by the installer in order to execute the work in accordance with this Specification.

1.5.2 Material manufacturer shall be granted free and unencumbered access to observe the substrate prior to installation, during the installation and after the installation.

1.6 Warranty:

1.6.1 The manufacturer guarantees that the products are free from manufacturing defects and complies with their published specification.

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PART 2 – PRODUCTS

2.1 Manufacturer:

A. Arizona Polymer Flooring, 4565 W. Watkins St., Phoenix, Arizona 85043, Phone: 623.435.2277.
B. CastorCrete SL-CQ: Resin system, crack and control joint filler shall be supplied.

2.1.1 CastorCrete SL-CQ is a gauge rake, trowel-applied polyurethane cement mortar and a double broadcasting of aesthetic colored quartz topping. It is installed at 1/4 inch (6.35 mm) to 3/8 inch (9.5 mm).

2.2 Physical Properties CastorCrete SL:

Typical Physical Properties @ 70^0F (21^0C)

Tensile Strength	ASTM C307	1,400 psi
Ultimate Compressive Strength	ASTM C579	8,500 psi
Ultimate Flexural Strength	ASTM C580	2,700 psi
Hardness, Shore D	ASTM D2240	75 – 80 (depends on top coat)
Adhesion to Concrete	ASTM D7234	400 psi (concrete failure)
Water Absorption	ASTM C413	< 0.1 %
Thermal Compatibility with Concrete	ASTM C884	Passes
Coefficient of Thermal Expansion	ASTM C513	1.1 $X10^{-5}$ minimum
Flammability when Bonded to Concrete	ASTM D635	Self-Extinguishing
Abrasion Resistance	ASTM C501	32 mg
Microbial (Fungi) Resistance	ASTM G21	Passes #1
Coefficient of Friction, Static Wet	ANSI/NFSI B101.1	Meets ADA Flat & Ramp
Coefficient of Friction, Dynamic Wet	ANSI/NFSI B101.3	Meets ADA Flat & Ramp

2.3 Mix

2.3.1 Mix all components in accordance with the material manufacturer's recommendations.

PART 3 – EXECUTION

3.2 Inspection:

3.2.1 Examine areas to receive the CastorCrete SL-CQ:

a. Pre-existing defects in the concrete or cementitious overlayments substrate must be corrected.
b. Deviation from the concrete and cementitious overlayment part of this Specification requires resolution prior to placement of the CastorCrete SL-CQ.
c. If the substrate is found to be in non-conformity of (concrete or cementitious overlayment) the substrate specification, correct the non-conforming substrate prior to placement if CastorCrete SL.
d. The installer shall start work after other trades have corrected the defects.

3.3 Installation:

3.3.1 Substrate:

a. Prepare the substrate to receive CastorCrete SL-CQ in accordance with the manufacturer's recommendation and Application Instruction.

3.3.2 Placing the CastorCrete SL-CQ:

a. Mix and place per manufacturer's Application Instructions.
b. Work shall be inspected and accepted, or a punch list of corrections shall be issued by the General Manager or Project Manager or Owner or End-User.

3.4 Cure and Protection:

3.4.1 Protect the CastorCrete SL-CQ coat from damage from other trades in accordance with the material manufacturer's recommendations.

3.5 Cleaning:

3.5.1 Cleaning the CastorCrete SL-CQ in accordance with the material manufacturer's recommendation.

3.5.2 Cleaners not recommended by the material manufacturer may have a deleterious effect on the appearance (color, gloss, etc.) or they may affect the performance (softening, loss of texture, etc.). Prior to using a cleaner not recommended by the material manufacturer, test the cleaner in an isolated area to determine its affect.

END OF SECTION

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This Specification was prepared by:

Arizona Polymer Flooring
4565 W. Watkins St.
Phoenix, AZ 85043
623-435-2277