**SECTION 09 67 26**

**SIKAFLOOR® PRONTO® RB-1823 CQ** **(formerly MasterTop 1823 SRS CQ) Methyl-Methacrylate Based Self-Leveling Flooring System w/ a Decorative or Solid Quartz Broadcast.**

**PART 1 GENERAL**

1.01 WORK INCLUDED:

A. Provisions established within the Contract, Division 1, General Requirements, the Drawings are collectively applicable to this Section.

B. Related sections Section 09770 Special Protective Wall Coatings.

1.02 Products installed but not furnished under this section:

A. Division 3 - Concrete (poured in place).

B. Division 7 - Sealants: Control joints, expansion joints and doorframes.

C. Division 15 - Mechanical: Drains

1.03 SYSTEM DESCRIPTION

A. The Sikafloor® Pronto RB-1823 CQ floor topping system shall be a nominal 1/4” thick, including 3/16” Sikafloor®-40 BC Pronto Self-Leveling basecoat (color and texture selected by owner), with appropriate Primers and Topcoat.

1. The Sikafloor® Pronto RB-1823 CQ floor topping system shall cure and be available to normal traffic in no more than 60 minutes at 24° F after application of last coat. It shall have a maximum water absorption value of 0.04 weight percent in accordance with ASTM D570.It shall be chemically resistant to a wide range of acids, alkalis, salts, fats, oils, and other chemicals.

C. The finished floor coating system shall be uniform in color, texture, and appearance. All edges that terminate at walls, floor discontinuities, and other embedded items shall be sharp, uniform, and cosmetically acceptable with no thick or ragged edge. The Flooring Installer shall work out an acceptable masking technique to ensure the acceptable finish of all edges.

D. See Paragraph 3.3 and/or 3.07 for number and thicknesses of each coat/layer in each system.

1.04 REFERENCE STANDARDS

 A. NACE No. 6/SSPC-SP 13 - Surface Preparation of Concrete

 B. ACI 308 – Standard Practice for Curing Concrete

 C. ACI 302.1R-80 - Guide for Concrete Floor and Slab Construction

 D. American Society for Testing and Materials (ASTM)

1.05 SUBMITTALS:

A. Prior to commencing work, submit manufacturer’s technical information and installation details to describe materials to be used. The same manufacturer shall supply all polymer underlayments wall and floor finishes.

B. Submit manufacturer’s certificate of compliance that materials meet specification requirements.

C. Before beginning work, samples of the flooring system shall be provided for architect’s approval.

1.06 QUALITY ASSURANCE:

A. Manufacturer Qualifications:

1. Sika Corporation • Flooring 201 Polito Avenue, Lyndhurst, NJ 07071 Tel: 800 933 7452 [www.SikaFloorUSA.com](http://www.SikaFloorUSA.com).

2. No request for substitution shall be considered that would change the generic type of coating system specified (i.e., 100% reactive, Methyl Methacrylate based acrylic liquid). Equivalent materials of other manufacturer's may be substituted only on approval of the Architect or Engineer. Requests shall include the respective manufacturer's technical literature for each product giving the name, generic type, descriptive information, recommended dry film thickness (DFT), Material Safety Data Sheet (MSDS), and certified test reports showing results to equal performance criteria of products specified herein.

3. Manufacturer must show a minimum 10-year history of manufacturing MMA products for the specified application. Manufacturer must show a minimum of 10 projects of equal size and magnitude as this project.

B. Flooring Installer Qualifications:

1. Pre-qualification requirements: Each bidder for this project shall be pre-qualified and approved by the material manufacturer at the time of bid submittal. Acceptability will include judgment on equipment, history, and financial strength. In no case will Sika Corporation permit the application of any of its materials by untrained, non-approved Flooring Installer or personnel. This is a commercial/industrial grade decorative floor and cove base system that requires expert installation techniques. Contact: Christopher Bauer bauer.christopher@us.sika.com Mobile: 952-334-4661 with any questions.

2. Each approved Flooring Installer shall have been trained by the Manufacturer in all phases of surface preparation and application of the specified flooring system(s). The approved Flooring Installer must possess proper surface preparation equipment as recommended by manufacturer.

3. Each approved Flooring Installer must have five years’ experience of installing the specified flooring system and submit a list of five projects/references as a prequalification requirement. At least one of the five projects/references must be of equal size, quantity, and magnitude to this project as a prequalification requirement. Owner has the option to personally inspect the projects/references to accept or reject any of the Flooring Installers prior to bid time as a prequalification requirement.

C. Acceptance Sample:

1. A minimum one-foot square representative sample of the specified flooring system shall be prepared by the Manufacturer's representative and submitted to the Owner prior to the bidding phase of the project. All bidders shall inspect the "acceptance sample" before submitting their bids.

2. The installed flooring system shall be similar to the acceptance sample in thicknesses of respective film layers, color, texture, overall appearance and finish.

D. Bond Testing:

1. Surface preparation efforts shall be evaluated by conducting Bond Tests at the site prior to application of the flooring system(s).

2. See paragraph 3.03 or consult with Material Manufacturer for specific procedure.

E. Pre-Job Meeting

1. Owner requires a Pre-Job Meeting with representatives of Owner, Architect, General Contractor, Flooring Installer, and Material Manufacturer in attendance. The agenda shall include a review and clarification of this specification, application procedures, quality control, inspection and acceptance criteria, and production schedules. Flooring installer is not authorized to proceed until this meeting is held or waived by Owner.

1.07 DELIVERY AND STORAGE:

A. Material shall be delivered to project site in manufacturer’s original unopened containers bearing manufacturer’s name, product and color.

B. Materials shall be stored indoors, protected from damage, moisture, direct sunlight and temperatures below 50 degrees F or above 80 degrees F.

1.08 PROJECT AND ENVIRONMENTAL CONDITIONS

A. Evaluate the substrate condition, including moisture content and extent of substrate leveling and repairs required, if any.

B. Coordinate flooring work with other trades to ensure adequate illumination, ventilation, and dust free environment during application and curing of flooring.

1. Comply with material manufacturer’s recommended temperature limitations for flooring application.
2. Do not apply materials if relative humidity is above 85% (percent) or within 5º of dew point at time of application.
3. Utilities, including electric, water, heat and finished lighting to be supplied by General Contractor
4. Erect suitable barriers and post legible signs at points of entry to prevent traffic and trades from entering the work area during application and cure period of the floor.
5. Protection of finished floor from damage by subsequent trades shall be the responsibility of the General Contractor.

1.09 WARRANTY:

A. Flooring Installer shall furnish a written warranty covering both material and workmanship for a period of ( ) year from date of installation.

**PART 2 PRODUCTS**

2.01 MANUFACTURER:

Sika Corporation

201 Polito Avenue · Lyndhurst · NJ · 07071 · United States

 www.SikaFloorUSA.com

2.02 MATERIALS:

1. Sikafloor® Pronto RB-1823 CQ Methyl Methacrylate (MMA) Acrylic Resin System:
2. Primer/Sealer Coat: Sikafloor®-51 P Pronto. NOTE: Sikafloor®-41 P Pronto with Sikafloor®-103IN Pronto additive may be a suitable substitute for priming floors with installation temps above 15 degrees F and must be approved by Manufacturer and Architect prior to beginning installation.

2. Coving/Patching/Sloping (if required): Sikafloor® Pronto 1817 PC Polymer Concrete

3. Basecoat: Sikafloor®-40 BC Pronto Self-Leveling, consisting of Sikafloor® -40 BC Pronto Self-Leveling resin, Sikafloor® PGM 155 Pronto pigment and Sikafloor®-100SL Pronto with decorative or solid trowel grade quartz broadcast.

4. Topcoat: Sikafloor®-40 BC Pronto Colorless Topcoat Resin

5. Pigment: Sikafloor® PGM 155 Pronto pigment added to Basecoat to compliment decorative or solid trowel grade quartz.

6. Decorative or solid trowel grade quartz for broadcasting: Blend(s) to be chosen by owner. See 2.2.1 E

* + 1. Product Performance Criteria

A. **Sikafloor®-51 P Pronto Primer/Sealer**

|  |  |  |
| --- | --- | --- |
| 1. | Percentage Reactive Resin: | 100%  |
| 2. | Solid Content by Volume: | 100% |
| 3. | Viscosity: (ASTM 2393) | 220-330 cps |
| 4. | Shore D Hardness: (ASTM 2240) | 83 |
| 5. | Water Absorption, Wt. % (ASTM D570) per 24 hours: | < 0.1 % |
| 6. | Tensile Strength, psi (ASTM D638) | 4250 psi |

B. **Sikafloor® Pronto 1817 PC Polymer Concrete**

|  |  |  |
| --- | --- | --- |
| 1.  | Percentage of reactive resin | 100% |
| 2. | Water Absorption, Wt. % (ASTM D570 per 24 hours: |  0.02% |
| 3. | Tensile Strength, psi (ASTM D638) | 1000 |
| 4. | Tensile Modulus, psi X 10 to the 5th (ASTM D638): | 1.2 |
| 5. | Coefficient of Thermal Expansion, in./in./deg. F (ASTM D696) psi x10-6: | 18 |
| 6.  | Compressive Strength, psi (ASTM C39) |  7,000 |
|   | (ASTM C109) | 9,200 |

C. **Sikafloor®-40 BC Pronto Self-Leveling Basecoat**

|  |  |  |
| --- | --- | --- |
| 1. | Percentage of reactive resin:  | 100% |
| 2. | Solid Content by Mass: | 100% |
| 3. | Viscosity: (ASTM 2393) | 450-550 cps |
| 4. | Shore D Hardness: (ASTM 2240) | 61 |
| 5. | Water Absorption, Wt. % (ASTM D570 per 24 hours): | 0.1% |
| 6. | Tensile Strength, psi (ASTM D638): | 1,350 psi  |

D. **Sikafloor®-40 TC Pronto Colorless Topcoat Resin**

|  |  |  |
| --- | --- | --- |
| 1. | Percentage of reactive resin:  | 100% |
| 2. | Solid Content by Mass: | 100% |
| 3. | Viscosity: (ASTM 2393) | 450-550 cps |
| 4. | Shore D Hardness: (ASTM 2240) | 61 |
| 5. | Water Absorption, Wt. % (ASTM D570 per 24 hours): | 0.1% |
| 6. | Tensile Strength, psi (ASTM D638): | 1,350 psi  |

8. Chemical Resistance, ASTM D543:

Effect of weak acids: none

Effect of strong acids: slight

Effect of alkalis: none

Effect of salt solutions: none

Effect of oil, grease: none

Effect of sunlight (UV radiation): none

E**.** Decorative or Solid Trowel Grade Quartz:

1.The blend will be selected and approved by the owner and included as part of the submittal process

2.2.2 PRODUCT INSTALLATION & APPLICATION CRITERIA

A. All Sikafloor® Pronto MMA Material Systems:

1. Pot Life at 68° F.: 10-15 minutes

2. Cure Time at 68° F.: 60 minutes

3. Recoat Time at 68° F.: 60-90 minutes

# **PART 3 EXECUTION**

3.01 SURFACE CONDITIONS:

A. Concrete must have a curing period of 28 days minimum at 70° F. The surface must be clean and dry, physically sound and free of contamination. Surfaces must be free of holes, voids or defects. Cracks and abrupt changes in surface profile must be corrected. Fins and projections must be removed. All curing compounds and sealers must be removed.

B. Conduct quantitative moisture testing in accordance with ASTM-F2659-10 utilizing Tramex type impedance moisture meter. Maximum acceptable test result is 5%. If more than stated value, contact your Sika Technical Flooring Specialist for Sikafloor and Sika Ucrete moisture tolerant primer/basecoat options.

C. Flooring Installer must report, in writing, surfaces left in improper condition by other trades. Application will constitute acceptance of surfaces by the Flooring Installer.

3.02 PREWORK INSPECTION

A. Examine all surfaces to be coated with MMA material systems and report to the Owner and/or Engineer any conditions that will adversely affect the appearance or performance of these coating systems and that cannot be put into acceptable condition by the preparatory work specified in Paragraph 3.03.

B. Do not proceed with application until the surface is acceptable or authorization to proceed is given by the Engineer.

C. In the event the Flooring Installer has employed all acceptable methods of surface preparation and cannot remedy adverse conditions that would lead to failure of the installation, Flooring Installer shall withdraw from the contract and Owner will be financially responsible only for preparation efforts.

3.03 PREPARATION:

A. Surface Preparation - General

1. Concrete substrate must be clean and dry. Dislodge dirt, mortar spatter, paint overspray, and other dry surface accumulations and contamination by scraping, brushing, sweeping, vacuuming, and/or compressed air blow-down.

2. New concrete: See 1.08 - C for requirements.

1. Surfaces that are heavily contaminated shall be cleaned with the appropriate degreaser, detergent, or other appropriate cleaner/surfactant followed by thoroughly rinsing with fresh water to remove the accumulation prior to mechanical cleaning efforts. Mechanical cleaning will not remove such deposits, but only drive them deeper.

4. Conduct quantitative moisture testing in accordance with ASTM-F2659-10 utilizing Tramex type impedance moisture meter. Maximum acceptable test result is 5%. If in excess of stated value, contact your Sika Technical Flooring Specialist for Sikafloor or Sika Ucrete moisture tolerant primer/basecoat options.

B. Bond Testing

1. The Flooring Installer shall evaluate all surface preparation by conducting bond tests at strategic locations.

2. Mix (32) ounces of the Sikafloor®-51 P Pronto primer with #10-#12 mesh, dry quartz until an easily trowelable mixture is obtained. Add Sikafloor®-101 AC Pronto and Sikafloor®-100 HD Pronto per manufactures instructions (based on temperature) and mix well. Apply palm-sized patties 1/4" to 1/2" thick.

3. After one (1) hour at (68° F.), patties must be cured tack-free and cooled to ambient temperature of concrete. Remove patties with hammer and chisel and examine fracture/delamination plane. Concrete with fractured aggregate must be attached to the entire underside of the patty.

4. If only laitance or a small amount of concrete is attached or if interface between patty and substrate is tacky, further substrate preparation is required.

5. If further surface preparation is required, bond tests shall be conducted again when this has been completed.

6. If no amount or kind of surface preparation produces satisfactory bond tests, the Flooring Installer shall report that to the Owner, Engineer, and Manufacturer.

C. Mechanical Surface Preparation and Cleaning

1. The Sikafloor® Pronto MMA system requires a CSP 4-5 in accordance with ICRI CSP Surface Preparation Standards. All accessible concrete floor surfaces shall be mechanically blast cleaned using a mobile steelshot, dust recycling machine such as BLASTRAC, as manufactured by Wheelabrator Corp., or approved equivalent. All surface and embedded accumulations of paint, toppings, hardened concrete layers, laitance, power trowel finishes, and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a profile similar to 40 grit sandpaper and exposing the upper fascia of concrete aggregate.

2. Floor areas inaccessible to the mobile blast cleaning machines shall be mechanically abraded to the same degree of cleanliness, soundness, and profile using vertical disc scarifiers, starwheel scarifiers, needle guns, scabblers, or other suitably effective equipment.

3. After blasting, traces or accumulations of spent abrasive, laitance, removed toppings, and other debris shall be removed with brush or vacuum.

4. Conduct Bond Tests to check adequacy of surface preparation. See Paragraph 3.03 - B (Bond Testing).

5. Application of the respective specified material system(s) must be completed before any water or other contamination of the surface occurs.

3.04 INSTALLATION:

A. Application of Sikafloor® Pronto RB-1823 Decorative Quartz Flooring System consists of:

1. applying the primer/sealer,
2. applying cant coving with Sikafloor® Pronto 1817 PC system (if required),
3. performing patching and sloping with Sikafloor® Pronto 1817 PC system (if required),
4. re-priming Sikafloor® Pronto 1817 PC areas
5. applying the Basecoat, broadcasting the decorative or solid quartz.
6. applying the topcoats,

Time for curing (45 - 60 minutes) shall be allowed between each coat.

Thicknesses are specified below and/or in Paragraph 3.07.

B. Open only the containers of component materials to be use in each specific application as needed. Refer to Manufacturer's data sheets for pot-life/temperature relationship to determine size of batches to mix and mix ratios for each respective coat of the system.

C. Measure, add, and mix the accelerator (Sikafloor®-101 AC Pronto) and initiator (Sikafloor®-100 HD Pronto) into the respective resin components in the proportions and sequence recommended by the Material Manufacturer. Pot life is short, so mix only as much material at a time as can be easily and efficiently applied.

3.04.1 PRIME COAT

A. Measure, add, and mix the Sikafloor®-51 P Pronto with Sikafloor®-101 AC Pronto accelerator per the Sikafloor Pronto Mixing Chart. Add initiator (Sikafloor®-100 HD Pronto) into the respective resin components in the proportions recommended by the Material Manufacturer based on temperature.

B. Pour the mixture batches onto the floor surface and use a 9" or 18" wide, 3/8 thick-napped, solvent-resistant paint roller to roll out the material at a rate of 100 sq. ft./ gal. to form a uniform, continuous film, ensuring that all crevices, cracks, other surface discontinuities have been saturated and coated. Use a paint brush to reach areas inaccessible to the roller. Work quickly and deliberately; the pot life is short (10 -15 minutes). Do not leave any "puddles"; roll out any such accumulations.

C. Allow the primer/sealer coat to cure.

D. If any of the concrete has absorbed all of the primer or if the concrete still has a dry look, re-prime these areas before applying the subsequent coats.

3.04.2 COVING (If required)

* 1. Surface Preparation
1. If concrete walls are to be painted prior to installation of cove base, the bottom portion of the walls shall remain un-coated to the height of the cove base to insure a proper bond to the concrete wall.
2. If walls are constructed of a non-compatible material or if a coating exists, a backer board of ¼” plexiglass or ½” cement board cut to the desired height of the cove base needs to be installed. The top of the backer board should be cut at a 45° angle to create a “beveled” edge.
3. If a backer board needs to be installed it shall be fastened using a high-grade construction adhesive as well as counter sunk screws or concrete masonry anchors.
	1. System Description
4. Cant Cove base shall be installed according to manufacturer’s recommendations:
5. Sikafloor®-1817 PC Pronto cant cove base consisting of a trowel applied cant base mix (See 3.04.3)
6. Cant Cove base will be reprimed prior to receiving a broadcast and topcoat consistent with the flooring system.

3.04.3 PATCHING/SLOPING (If required)

1. Measure, add, and mix the Sikafloor® Pronto 1817 PC (Sikafloor®-17 RS Pronto Part A resin and Sikafloor®-17 RS Pronto Part B powder component), and necessary aggregate (if required) in the proportions recommended by the Material Manufacturer.
2. Use mixture to repair any damaged concrete, or to slope any areas as needed.
3. Once cured, material must be re-primed before Basecoat system is applied.

3.04.4 BASECOAT

A. Size the batches and mix according to Manufacturer's instructions. The entire batch should be poured and spread at once, i.e., do not let material set in pail.

B. Spread the Basecoat material with a pin/gauge rake set to a depth of 3/16”. Lightly trowel to a uniform thickness of 3/16” as necessary.

C. Immediately after application, roll with a porcupine roller to release any trapped air from the Basecoat.

D. Broadcast decorative or solid quartz into the fresh material before it begins to cure. It is important that the quartz "rains" down, and not be thrown into the surface.

E. Allow the Basecoat to cure.

F. Use a flooring swing machine with a brush attached to dislodge excess quartz followed by a tight sweep and vacuum to remove remaining quartz particles.

3.04.5 FIRST TOPCOAT

A. Apply with clean rollers at a rate of 80 - 100 sq. ft./gal. in the same way as the Primer/Sealer was applied as described in Paragraph 3.04.01. Apply light singular back roll for uniform application. Immediately pull tape.

B. Allow topcoat to cure.

C. Sand first topcoat with flooring swing machine mounted with abrasive 80 grit sanding screen prior to next topcoat. Follow with a sweep and tight vacuum.

3.04.5a INTERMEDIATE TOPCOAT(Optional)

A. Tape off floor/cove base that requires a smooth finish. Apply with clean rollers at a rate of 80 - 100 sq. ft./gal. in the same way as the FIRST TOPCOAT was applied. Apply light singular back roll for uniform application. Immediately pull tape.

B. Allow topcoat to cure.

3.04.6 FINAL TOPCOAT

A. Apply final topcoat with clean rollers at a rate of 100 - 125 sq. ft./gal. in the same way as the PRIOR TOPCOAT was applied. Apply light singular back roll for uniform application. Immediately pull tape.

B. Allow topcoat to cure.

3.05 FIELD QUALITY CONTROL/INSPECTION

A. Flooring Installer shall request acceptance of surface preparation from the Engineer before application of the prime/seal coat.

B. Flooring Installer shall request acceptance of the prime/seal coat from the Engineer before application of subsequent specified materials.

C. All work not acceptable to the Architect, Engineer, or Owner must be corrected before consideration of final acceptance.

3.06 CLEANING

A. Flooring Installer shall remove any material spatters and other material that is not where it should be. Remove masking and covers taking care not to contaminate surrounding area.

B. Flooring Installer shall repair any damage that should arise from either the application or clean-up effort.

3.07 COATING SCHEDULE

1. Primer shall be Sikafloor®-51 P Pronto. Application rate shall be approx.100 sq.ft. per gallon (approx. 12-15 mils).
2. Coving shall be Sikafloor® Pronto 1817 PC installed per manufacturers recommendations.
3. Patching/Sloping material shall be Sikafloor® Pronto 1817 PC
4. Body coat shall be Sikafloor®-40 BC Pronto Self-Leveling basecoat applied with a gauge rake set at 3/16" for a rate of 25 sq. ft. per batch. Decorative or solid trowel grade quartz to be broadcast into the uncured basecoat at the rate of 1.36/lb per sf.
5. Clear topcoat shall be Sikafloor®-40 TC Pronto; apply at the rate of 80 - 100 sq. ft. per gallon for the first coat and 100 - 125 sq. ft. per gallon for the second application.

3.08 MANUFACTURERS RECOMMENDATIONS

1. For more specific information concerning maintaining Methyl Methacrylate floors please consult the manufacturer at the above location.

END OF SECTION

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