

# GUIDE SPECIFICATION

*Manufacturer:*

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## SECTION 03920

### APPLIED CONCRETE FINISHES – CONCRETE RESURFACING

*(\*\*May be included in sections 2785 Sitework or 9963 Finishes)*

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*This guide specification has been prepared by QC Construction Products, in printed and electronic media, as an aid to specifiers in preparing written construction documents for decorative floors and other surfaces using an ultra thin layer of cementitious material to thinly cover a variety of surfaces such as concrete, wood, metal, plastic and asphalt.*

*Edit entire master to suit project requirements. Modify or add items as necessary. Delete items which are not applicable. Words and sentences within brackets [\_\_\_\_\_] reflect a choice to be made regarding inclusion or exclusion of a particular item or statement. Where a value, word, or phrase is followed by a bracket, the preferred value, word, or phrase occurs first, with the other choices following inside the brackets. This section may include performance, proprietary and descriptive type specifications. Edit to avoid conflicting requirements.*

*This guide specification is written around the Construction Specifications Institute (CSI), Section Format standards references to section names and numbers are based on Master Format 95.*

*For specification assistance on specific product applications, please contact our offices above or any of our local product representatives throughout the country. Additional technical information is available in our CSI formatted Product Information Bulletins.*

*Qc Construction Products reserves the right to modify these guide specifications at any time. Updates to this guide specification will be posted to the manufacturer's web site and/or in printed matter as they occur. QC Construction Products makes no expressed or implied warranties regarding content, errors, or omissions in the information presented.*

**NOTE:** *A specifier is within his rights to issue a proprietary specification that names a single source. If, in the informed and professional judgment of the specifier, his client's needs will be best served by naming a particular product by brand name, then he has the responsibility to limit his specification to one source. This practice is even acceptable on publicly funded projects. This principal of proprietary specification has found legal support in the case of Whitten Corp. v. Paddock Pool Builders, Inc., a Federal District Court Case from Massachusetts (376 F. Supp.125). Further support came in 1975 when the U.S. Supreme court rejected further appeal and review.*

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**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Provisions established within the General and Supplementary Conditions of the Contract, Division 1 - General Requirements, and the Drawings are collectively applicable to this Section.

**1.2 SECTION INCLUDES**

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*Edit the "Section Includes" paragraph to briefly describe the content of the section. After editing section, refer back to this paragraph to verify no conflicts occur.*

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- A. Concrete floors or surfaces colored using a concrete resurfacing product.
- B. Curing and sealing.

**1.3 RELATED SECTIONS**

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*Sections paragraph below to suit project requirements; Delete sections that will not be used.*

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- A. Section 07920 - Joint Sealants: Sealant for joints.
- B. Section 09870 - Chemically Stained Concrete Floors.
- C. Curing and sealing.

**1.4 QUALITY ASSURANCE**

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*Include quality assurance requirements below which are consistent with the size and scope of the project and extent of work of this section. Only request qualification statements you intend to review, and which are necessary to establish qualifications of the product, manufacturer, or installer.*

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- A. Perform work in accordance with ACI 301, 302 and 304.
- B. Obtain materials from same source throughout.
- C. Applicator Qualifications: Performed by firm with 3 years minimum experience in application of concrete overlayment products or a contractor approved by the manufacturer who is identified as having the appropriate skill and experience to properly apply and finish concrete resurfacing products.

**1.5 SUBMITTALS**

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*Include submittal requirements below which are consistent with the scope of the project and extent of work of this section. Only request submittals which are necessary for review of design intent.*

*Do not request submittals if drawings sufficiently describe the products of this section or if proprietary specifying techniques are used. The review of submittals increases the possibility of unintended variations to drawings.*

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- A. Submit product data under provisions of Section 01300.
- B. Include data on joint filler, admixtures and curing compounds.
- C. Submit manufacturer's instructions under provisions of Section 01300.
- D. Provide field samples of surface colors [color], [textures] [, and patterns] specified for architect approval prior to beginning work, 48 x 48 inch in size illustrating floor finishes. Said sample shall be the standard for the balance of the work installed, and shall be protected against damage until final approval from the Architect. The cost for the construction and protection of the referee sample shall be borne by the owner/agent and shall be part of the contractor's bid.

- 1.6 ENVIRONMENTAL REQUIREMENTS
  - A. Do not place overlayment when concrete/base surface or ambient temperature is less than 50 °F, or if concrete/base surface is wet or frozen.
  - B. Provide mechanical ventilation during and after application to allow for proper drying of material if natural ventilation is insufficient.
  
- 1.7 DELIVERY, STORAGE, AND HANDLING
  - A. Comply with requirements of Section 01600.
  - B. Store products above 50°F, but no greater than 85°F, unless otherwise recommended by manufacturer.
  
- 1.8 SEQUENCING AND SCHEDULING
  - A. Schedule application of products at proper time intervals after concrete finishing and curing operations, no less than 28 days after concrete placement..
  - B. Maintain proper moisture content of concrete before, during, and after application of specified products.

**PART 2 PRODUCTS**

**2.1 MATERIALS**

- A. Concrete Formwork: Refer to Section 03100.
- B. Concrete Reinforcement: Refer to Section 03200.
- C. Concrete Materials and Mixes: Refer to Section 03300.
- D. Concrete Resurfacing Material:
  - 1. [QC Concrete Resurfacer by QC Construction Products], Color(s) as selected by the Architect.
    - a. QC Concrete Resurfacer is a system that employs the use of a troweled-on non-colored or integrally colored cementitious topping to resurface vertical and horizontal surfaces on both indoor and outdoor applications. QC Concrete Resurfacer is approximately 20 mils thick and utilizes a full spectrum of color choices that can incorporate simple or elaborate graphic design.
- E. Concrete cleaner and surface prep:
  - 1. [QC ConClean by QC Construction Products]
  - 2. [QC Concrete Degreaser by QC Construction Products]
- F. Crack Patching Products:
  - 1. [QC Crack Repair Patch Kit by QC Construction Products]

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*Section G, below is included as a recommendation for curing products for new concrete slabs which will receive concrete resurfacing products and is not to be specified for curing of QC Concrete Resurfacer. Select G.1 below for curing of concrete that will be receiving concrete overlays, chemical stain or penetrating water based stains and will be maintained and recoated; select G.2 below for concrete which will be allowed to weather naturally.*  
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- G. Curing Compound:
  - 1. [QC Sure Cure by QC Construction Products.] A non-film-forming curing compound.

Note: If membrane forming curing agents are used, it is necessary to lightly abrade the surface with a 20-grit sanding disk and wash with QC ConClean prior to QC Concrete Resurfacer application.

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*QC Construction Products has a broad line of concrete sealers to enhance the beauty of stained concrete and minimize the damaging effects of petroleum based contaminants and overall effect of weathering. Refer to manufacturer's product usage recommendations. Solvent based sealers should not be used on polymer modified concrete products such as QC Concrete Resurfacer and QC Thin-Pave. Contact manufacturer for suggested maintenance coatings for periodic renewal of finish. The following is a brief description of each:*

*QC Cemseal: Water based, 100% acrylic emulsion, with excellent resistance to penetration of oil, gas, and water.*

*QC Surpro WB: Water based, two part poly-urethane coating that provides a durable, chemical-resistant barrier coating for high-traffic areas where a water-based high performance coating is desired.*

*QC Interior Floor Finish: A water-based product, QC INTERIOR FLOOR FINISH is a high-solids sacrificial finish to be used as a maintenance top coat for interior architectural and regular gray concrete surfaces.*

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G. Sealing and Finish Coatings:

1. [QC Ultra Seal by QC Construction Products]
2. [QC Solvent Seal VOC III by QC Construction Products]
3. [QC Cemseal by QC Construction Products.]
4. [QC Surpro WB by QC Construction Products.]
5. [QC Interior Floor Finish or Natural Beauty by QC Construction Products.]
6. [QC SureTrac polymeric grit by QC Construction Products.]

H. Vapor Transmission and pH Testing and Treatment

1. [QC Moisture Test Kit by QC Construction Products]
2. [QC pH Pencil by QC Construction Products]
3. [QC Cemguard by QC Construction Products]

I. Imprinting Tools and Accessories:

1. Adhesive stencil patterns for micro thin concrete overlays, in [\_\_\_\_\_]  
[custom pattern/texture as selected by Architect.]
2. Concrete staining products:
  - a. [QC Patina Stain by QC Construction Products]
  - b. [QC CemTint by QC Construction Products]
3. Concrete pH testing

2.2 JOINT FILLERS

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*Select one or more of the following joint fillers. "A" is used where an architectural statement needs to be made. "B" is used as backing for joint filler specified either below or in Section 07920.*

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- A. Redwood Boards: Construction heart grade redwood, sound and free of checks, splits or other defects, [3/4] 1-1/2 inch thick.
- B. Non-Asphaltic Joint Fillers: ASTM D1752, Type I.
- C. Sealants: Two part polyurethane sealants, of grade as required to suit application, meeting ASTM C920, in manufacturer's [standard] [custom] colors, and as follows:
  1. Urethane, SL grade, as specified in Section 07920.
  2. Urethane, SL-TB grade as specified in Section 07920

**PART 3 EXECUTION**

3.1 EXAMINATION

- A. Examine conditions and proceed with Work in accordance with Section 01400.

- B. Verify that surface temperature of substrate is between 50° and 90° F.
- B. Verify that surfaces are clean, dry, dust free, and free of efflorescence, oil or other matter detrimental to overlay application.
- C. Verify that surfaces sound and not scaling, peeling, dusting or raveling.
- D. Assure that all random cracking is properly treated.
- E. Verify all construction joints, control joints and expansion joints are located and marked for reinstatement into resurfaced finish.

### 3.2 PREPARATION

- A. Prepare surfaces in accordance with manufacturer's directions.
- B. Provide protection as necessary to protect adjacent materials and surfaces from dirt, dust, spillage, overspray and other surface or physical damage.

### 3.3 MIXING

- A. Base Coat:
  1. In a 5 gallon plastic pail, mix 1-56 lb. bag QC Concrete Resurfacer Base Coat with approximately two (2) gallons QC Concrete Resurfacer Liquid polymer to achieve a thin liquid consistency. Additional liquid polymer may be necessary in warm conditions to achieve desired consistency. Once final consistency is achieved do not add additional liquid to re-temper.
  2. QC Concrete Resurface base coat has a pot life of well over one hour if kept out of direct sunlight. If product stiffens in the pail it may be re-mixed, without adding liquid, to achieve original consistency. Once applied to concrete surface working time is approximately 10 – 20 minutes.
- B. Finish Coat:
  1. In a 5 gallon plastic pail, mix 1-40 lb. bag QC Concrete Resurfacer Finish Coat with approximately two (2) gallons QC Concrete Resurfacer Liquid polymer to achieve a very thin pancake batter consistency. Additional liquid polymer may be necessary in warm conditions to achieve desired consistency. Once final consistency is achieved do not add additional liquid to re-temper.
  2. QC Concrete Resurface finish coat has a pot life of well over one hour if kept out of direct sunlight. If product stiffens in the pail it may be re-mixed, without adding liquid, to achieve original consistency. Once applied to concrete surface working time is approximately 10 – 20 minutes.

### 3.4 APPLICATION

- A. (Optional) For new construction: Place concrete floors in accordance with ACI 301 and 302 and Section 03330.
- B. Concrete shall be tested in accordance with ASTM F 1869-98 and/or ASTM E 1907-97 . (If concrete does not conform, contact manufacturer for technical assistance.)
- C. Interior Concrete: Concrete shall be tested for vapor emission levels in accordance with ASTM D 4263. If vapor emission levels exceed 5 lbs. per 1000 sq. ft. QC Cemguard shall be applied according to manufacturer's recommendations.
- D. Exterior Concrete: Concrete cannot be effectively tested for vapor emission levels outdoors. If moisture problems are suspected apply QC Cemguard following manufacturer's recommendations. Concrete subject to freeze/thaw conditions shall be treated with QC Cemguard

according to manufacturer's recommendations.

- E. Concrete shall have a pH level between 7-9. (If concrete does not conform, call QC Construction Products for technical assistance).
- F. Concrete shall not be soft/'dusty" due to poor curing or execution of the initial concrete installation. If either of these conditions are found to be present apply QC Cemguard per manufacturer's recommendations.
- G. Construction joints and control joints shall be transferred through the finished surface by tooling them into the finished surface. (Optional) Construction joints may be filled using a semi-rigid elastomeric joint filler in accordance with manufacturer's recommendations. Any 'working' cracks/joints should be expected to show or transfer through new surface.
- H. If surface is found to be "shiny" due to burnished concrete or high shine type sealers, wash floor with QC Con-Clean Floor Cleaner per manufacturer's recommendations until a uniform dull finish is achieved.
- I. Apply a single base coat of QC Concrete Resurfacer using squeegee (rounded edge type), trowel, roller, or spray. Apply as thin as possible using grit of material aggregate as a gage of applied thickness.
- J. After base coat is dry to the touch, apply a second coat of QC Concrete Resurfacer to reach a thickness of 20 mils using the same application technique as with first coat.
- K. [Optional] A third application of QC Concrete Resurfacer Finish Coat is optional depending upon the desired finish and texture desired. QC Concrete Resurfacer Finish Coat is used primarily to achieve a smooth troweled finish. If a smooth finish is desired assure that base coat is smooth and free of trowel or squeegee marks or other surface blemishes. This may be achieved by 'knocking down" imperfections with trowel edge, scraper, or sanding with rotary floor sander.

### 3.5 STAINING AND SEALING.

- A. After 12 to 72 hours of curing time surface may be stained using chemical "acid" stain, penetrating water-based stains or acrylic stains.
- B. After initial curing (10-12 hours) and after surface staining is washed, cleaned and dry, a sufficient build of a protective acrylic sealer shall be applied to the surface.
- C. On Exterior horizontal walking surfaces, a non-skid additive may be added to acrylic sealers if additional slip resistance is desired.

### 3.6 PROTECTION AND MAINTENANCE

- A. Newly completed surfaces should be protected from water until sealed. Water left on the surface before sealing could result in a white film forming. This will not affect the adhesion or durability and can be cleaned prior to sealing. Acids (for cleaning) or solvent materials should not be used on the finished Concrete Resurfacer.
- B. Regular cleaning and maintenance of interior floors shall be done in accordance with job requirements. This will vary depending on a number of factors including volume and intensity of traffic, UV exposure, geographical location and weather conditions. For instance, interior applications will require a different routine maintenance program than exterior products.

Residential applications, typically, require less cleaning and maintenance than commercial and municipal projects. In large commercial applications, a qualified floor maintenance contractor is recommended for routine cleaning and should be trained by manufacturer in proper care and maintenance procedures for these products.

- C. All QC Concrete Resurfacer installations should be professionally cleaned and resealed periodically by a qualified floor maintenance contractor in order to maintain a top-quality appearance. Protective maintenance coats of sealer shall be applied periodically to assure the base acrylic is protected and the desired level of gloss is maintained. Exterior surfaces should be resealed annually depending on traffic, especially in freeze-thaw locations.
- D. For QC Products technical assistance please contact Ross Urshan at 407-257-5967.

**END OF SECTION**