



**SECTION 09 67 23 RESINOUS FLOORING
TEMPER-CRETE RTB SYSTEM
SELF-LEVELING URETHANE CEMENT FLOORING**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes: Provide a complete Urethane cement floor system for interior concrete surfaces that meet the requirements for specific use indicated in the contract documents. Include all applicable substrate testing, surface preparation, and detail work.

1.2 RELATED SECTIONS

- A. Section 03 30 00 – Cast-In-Place Concrete
- B. Section 03 39 00 - Concrete Curing

1.3 SYSTEM DESCRIPTION

- A. The scope of work shall entail substrate preparation, the provision and application of a self-leveling, seamless urethane cement with aggregate broadcast with topcoat.
- B. The overall system will feature the desired color and nominal thickness between 3/16" and 5/16", as specified by the owner. The specified system will be applied to the prepared area(s) as indicated in the plans and per the manufacturer's recommendations.
- C. Cove base (as required) should be installed as indicated on the plans and per the manufacturer's recommendations, unless otherwise noted.

1.4 SUBMITTALS

- A. Product Data: Submit latest version of manufacturer's product and system data, including physical properties, color charts, representing manufacturer's full range of colors, textures and thicknesses.
- B. Manufacturer's Safety Data Sheets (SDS) for each product that
- C. Selection Samples: For the proposed system, provide two sets of samples of a minimum 3"x3", representing the color, texture, thickness and general appearance of the system subject to normal tolerances.

1.5 QUALITY ASSURANCE

- A. All materials used in the resinous floor system shall be manufactured and provided by a single manufacturer to ensure compatibility and proper bonding.
- B. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this section.
- C. Applicator shall have a minimum of 3 years' experience installing resinous flooring coatings similar to that which is required for this project and who is acceptable to the manufacturer.
 - 1. Applicator shall designate a single individual as project foreman who shall be on site at all times during installation.
 - 2. Applicator must show and have QCA Qualified Contractor/Applicator paperwork from the manufacturer of the coating system, as required to obtain a long-term jobsite specific warranty.
- D. Convene a pre-application meeting before the start of application of coating system. Require attendance of parties directly affecting work of this section, including: Architect, contractor,

applicator, and authorized representative of the coating system manufacturer and interfacing trades. Review the following:

1. Drawings and specifications affecting work of this section.
 2. Protection of adjacent surfaces.
 3. Surface preparation and substrate conditions.
 4. Application.
 5. Field quality control.
 6. Protection of coating system.
 7. Repair of coating system.
 8. Coordination with other work.
- E. No requests for substitutions shall be considered that would alter the general type of the specified system.

1.6 DELIVERY, STORAGE & HANDLING

- A. Delivery: Materials shall be delivered to the job site in sealed, undamaged containers. Each container shall be clearly marked with manufacturer's label showing type of material, color, and lot number.
- B. Storage:
1. Store all materials in a clean, dry place.
 2. Materials should be stored between 60-75°F. Do not store in direct sunlight or high heat.
 3. Do not allow any material to freeze.
 4. Safety Data Sheets (SDS) for all products and materials shall be kept on site.
- C. Handling: Handle products carefully to avoid damage to the containers. Read all labels, production specification sheets, system specification sheets and Safety Data Sheets (SDS) prior to use.

1.7 ENVIRONMENTAL CONDITIONS

- A. Site Requirements
1. Maintain environmental conditions (temperature, humidity, and ventilation) within the limits recommended by the manufacturer.
 2. Concrete shall be tested for moisture in accordance with ASTM F1869, before applying seamless coating. Water vapor transmission upwards through on-grade concrete slabs may result in loosening of resinous floors or improper curing of resinous flooring materials. If moisture emissions exceed 15 pounds per 1,000 square feet contact the manufacturer before application.
 3. Concrete must be at least 3500 psi.
 4. Concrete must be cured for a minimum of 14 days before coating is applied.
 5. Schedule coating work to avoid excessive dust and airborne contaminants. Protect work areas from excessive dust and airborne contaminants during coating application.
 6. Before any work is started, the applicator shall examine all surfaces for any deficiencies. Should any deficiencies exist, the architect, owner or general contractor shall be notified in writing and any corrections necessary shall be made.
 7. The applicator shall provide sufficient lighting during the prep and installation of the system, equivalent to the final lighting.
- B. Requirements for new concrete that will be coated with urethane cement.
1. All concrete shall be moisture cured for at least 7 days and have fully cured for a minimum of 14 days, in accordance with ACI-308 prior to the application of the system and pending moisture testing.
 2. Concrete should have a flat rubbed finish, float or light steel trowel finish. Hard steel trowel finishes are not required or advisable.
 3. Sealers and or curing agents are not to be used.
 4. All concrete surfaces that are on grade shall, should be constructed with a vapor barrier to protect against the effects of vapor transmission and the concerns with delamination of the system.

PART 2 PRODUCTS

2.1 FLOORING

- A. As a basis of design: Westcoat Temper-Crete RTB System, self-leveling urethane cement flooring system (no substitutions will be accepted).
1. System Materials:
 - a. Resin & Hardener: EC-24 Temper-Crete Urethane
 - b. Cement: TC-75 Temper-Crete RT Cement
 - d. Broadcasted Aggregate: TC-65 Quartz Sand
 - e. Topcoat: EC-102 Polyaspartic Topcoat
 2. Optional Materials:
 - a. Broadcast Aggregates: #30 silica sand can be used in lieu of TC-65 Quartz Sand.
 - b. Topcoats: EC-50 Novolac, EC-34 Epoxy Topcoat and EC-32 High Build Clear Epoxy Topcoat can be used in lieu of EC-102 Polyaspartic Topcoat. For maximum thermal shock resistance, Temper-Crete UV Topcoat (EC-24, TC-74) can be used in lieu of EC-102.

2.2 MANUFACTURERS

- A. Approved manufacturer: Westcoat Specialty Coatings; 4007 Lockridge Street, San Diego, CA 92102. Telephone 800-250-4519. Fax 619-262-8606. Website: www.westcoat.com.

2.3 PRODUCT REQUIREMENTS

- A. Temper-Crete RTB System
1. Adhesion to Concrete: ASTM D4541, concrete fails.
 2. Compressive Strength: ASTM C-579, 6,191 psi.
 3. Tensile Strength: ASTM C-307, 1,000 psi.
 4. Flexural Strength: ASTM C-580, 2,132 psi.
 5. Impact Resistance: ASTM D-2794, >160 in/lbs.
 6. Hardness: ASTM D-2240, Shore D, 78.
 7. Flammability: ASTM E-648, Class I.
 8. Water Absorption: ASTM C-413, <0.1%.
 9. VOC Content: ASTM D-2369, Method E, 12 g/l.
 10. Abrasion Resistance: ASTM D-4060, 0.07 gm loss.
 11. Resistance to Fungi Growth: ASTM G21, Rated 0 (no growth).
 12. Resistance to Mold Growth: ASTM D-3273, Rated 10 (highest resistance).
 13. Service Temperature: -40°F (min) – 250°F (max). (With Temper-Crete Topcoat)
 14. Softening Point: 266°F. (With Temper-Crete Topcoat)

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions.
1. Inspect all surfaces to receive urethane cement flooring. Verify that surfaces are dry, clean, and free of contaminants that would prevent Temper-Crete from properly adhering to the surface and that the substrate is satisfactory for installation and complies with requirements specified.
 2. Conduct calcium chloride testing according to ASTM F1869.
 3. Conduct surface profile inspection according to ICRI Technical Guideline No.03732.
 4. Before starting work report in writing to the authority having jurisdiction any unsatisfactory conditions.

3.2 PREPARATION

- A. General
 - 1. All concrete substrates shall be clean, dry and free of grease, paint, oil, dust, curing agents or any foreign material that will prevent proper adhesion. Any laitance or weak layers of concrete shall be removed prior to application.
 - 2. Moisture Testing: All concrete should be tested for moisture before applying a seamless coating.
 - a. Perform relative humidity test in accordance with ASTM F2170. If relative humidity (RH) exceeds 90%, contact the manufacturer before application.
 - b. Perform moisture vapor emission rate measurement in accordance with ASTM F1869. If vapor drive exceeds 15 lbs/1,000 sq. ft./24 hrs., contact the manufacturer before application.
 - 3. Mechanical Surface Preparation
 - a. Prepare surfaces using methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 - b. Create a surface profile of CSP 3-4 as described by the International Concrete Repair Institute (IRCI).
 - c. Anchor grooves/keyways should be cut six inches from all free edges, walls, perimeters, drains and both sides of joints.
 - d. Cracks, spawls and other imperfections in the substrate should be treated per manufactures recommendations.
 - e. Joints: Moving expansion joints should be honored and treated per manufactures recommendations.
 - f. Clean Surfaces thoroughly prior to installation.

3.3 APPLICATION

- A. Install coatings in accordance with the most up-to-date manufacturer's instructions.
- B. Mix multi-component materials in accordance with manufacturer's instructions.
- C. Use application equipment, tools, and techniques in accordance with manufacturer's instructions.
- D. Uniformly apply coatings at spread rates and in number of coats to achieve specified mil thickness recommended by the manufacturer.
 - 1. Install integral cove base where indicated on the contract drawings and according to manufacturer's instructions.
 - 2. All terminations, transitions and details such as: drains, walls and doorways shall be treated per the manufacturer's recommendations.
- E. Adhere to all limitations, instructions, and cautions for resinous coatings as stated in the manufacturer's published literature.

3.5 FIELD QUALITY CONTROL

- A. Verify coatings and other materials are as specified.
- B. Verify coverage rates of the system as work progresses. Areas found not to meet the required thickness shall receive additional material until specified thickness is attained.
- C. Manufacturer's representative shall provide technical assistance and guidance for surface preparation and application of coating systems.

3.6 PROTECTION AND CLEAN-UP

- A. Light foot traffic should be permitted after 18 hours. Heavy traffic and exposure to moisture and chemicals should be permitted after 72 hours. .
- B. Protect finished surfaces of coating system from damage during construction.
- C. Touch-up, repair or replace damaged flooring system after substantial completion.
- D. Clean area and remove all debris upon completion of work. Dispose of empty containers properly according to current Local, State and Federal regulations.

3.7 MAINTENANCE

- A. Contractor shall provide to owner, maintenance and cleaning instructions for the floor system upon completion of work. Owner is required to clean and maintain the surfaces to maintain manufacturer's warranty.

END OF SECTION

This guide specification has been prepared by Westcoat Specialty Coating Systems to assist design professionals in developing a project specific specification. This guide is a template that must be reviewed and adapted by specifiers to comply with project requirements. This guide specification is not to be copied directly into a project specification manual without review.