



## SPECIFICATION FOR INSTALLING

### RHINO CRETE HF

#### Section 09 67 23 – Resinous Flooring

#### NOTE TO SPECIFIERS:

THE PURPOSE OF THIS GUIDE SPECIFICATION IS TO ASSIST THE SPECIFIER IN DEVELOPING A PROJECT SPECIFICATION FOR THE USE OF RHINO FLOORING SYSTEMS' PRODUCTS. IT IS NOT INTENDED TO BE A "STAND ALONE" DOCUMENT, NOR TO BE COPIED DIRECTLY INTO A PROJECT MANUAL. THIS GUIDE SPECIFICATION WILL NEED TO BE CAREFULLY REVIEWED FOR APPROPRIATENESS FOR THE GIVEN PROJECT AND EDITED ACCORDINGLY TO COMPLY WITH PROJECT-SPECIFIC REQUIREMENTS.

### PART 1 – GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This section includes the following:
  - 1. Resinous seamless flooring system as shown on the drawings and in schedules.
- B. Related sections include the following:
  - 2. Cast-in-Place Concrete, section 03 30 00
  - 2. Concrete Curing, section 03 39 00

#### 1.3 SYSTEM DESCRIPTION

- A. The work shall consist of preparation of the substrate, the furnishing and application of a cementitious urethane based is a trowel grade, solid color flooring system.
- B. The system shall have the color as specified by the Owner with a thickness of 1/4" – 3/8'. It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations.
- C. Cove base (if required) to be applied where noted on plans and per manufacturers standard details unless otherwise noted

#### 1.4 SUBMITTALS

- A. System Data: Latest edition of Manufacturer's literature including performance data.

- B. Manufacturer's Material Safety Data Sheet (SDS) for each product being used.
- C. Samples: A 2.5" x 6" sample of the proposed system. Color, texture, and thickness shall be representative of appearance of finished system.

#### 1.5 QUALITY ASSURANCE

- A. The Manufacturer shall have a minimum of 7 years' experience in the production, sales, and technical support of cementitious urethane, polyurethane industrial flooring, and related materials.
- B. The Applicator shall have been approved by the flooring system manufacturer in all phases of surface preparation and application of the specified system and have a minimum of 5 years relevant experience.
- C. No requests for substitutions shall be considered that would change the generic type of the specified system.
- D. System shall be in compliance with requirements of the United States Department of Agriculture (USDA), Food, Drug Administration (FDA), and local Health Department.
- E. A pre-installation conference shall be held between Applicator, General Contractor and the Owner to review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and application schedule.

#### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Packing and Shipping
  - 1. All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product name and batch number.
  - 2. Product must be supplied in TOTES.
- B. Storage and Protection
  - 1. The Applicator shall be provided with a dry storage area for all components. The area shall be between 50o F and 90o F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.
  - 2. Copies of Material Safety Data Sheets (SDS) for all components shall be kept on site for review by the Engineer or other personnel.
- C. Waste Disposal
  - 1. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste generated during installation of the system.

## 1.7 CONDITIONS

### A. Site Requirements

1. Application may proceed while air, material and substrate temperatures are between 50o F and 90o F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.
2. The relative humidity in the specific location of the application shall be less than 90 % and the surface temperature shall be at least 50F above the dew point.
3. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.

### B. Conditions of new concrete to be coated with cementitious urethane material.

1. Concrete shall be cured for a minimum of 7 days prior to the application of the coating system pending moisture tests.
2. Concrete shall have a flat rubbed finish, float or light steel trowel finish (a hard steel trowel finish is neither necessary nor desirable).
3. Sealers, release agents and curing membranes should not to be used.
4. Concrete surfaces on grade shall have been constructed with a vapor barrier to protect against the effects of vapor transmission and possible delamination of the system.

### C. Safety Requirements

1. The Owner shall be responsible for the removal of foodstuffs from the work area
2. Non-related personnel in the work area shall be kept to a minimum.

## 3.8 WARRANTY

- A. Rhino Flooring warrants that its products are free from defects. Rhino Flooring shall provide a materials warranty to the Owner for a period of one year from date of manufacture. Liability, if any, is limited to product replacement.

## PART 2 – PRODUCTS

### 2.1 FLOORING

- A. Rhino Flooring HF flooring system.

Topping: Rhino Flooring, Rhino Crete Base A, Hardener B, HF Filler, and Pigment Pack

- B. Patch Materials

- A. Shallow Fill and Patching: Use Rhino Flooring, Rhino Crete SL or SR.
- B. Deep Fill and Sloping Material (over 3/8") Use Rhino Flooring, Rhino Crete HF.

## 2.2 MANUFACTURER

- A. Rhino Flooring, 9747 Businesspark Ave, San Diego, CA 92131, USA 6700 T: 888 254 8718
- B. Manufacturer of Approved System shall be single source and made in the USA.

## 2.3 PRODUCT REQUIREMENTS

- A. Topping: Rhino Crete HF
  - 1. Percent Solids - 100%
  - 2. VOC <10 g/L
  - 3. Bond Strength to Concrete ASTM D 4541 - > 400 psi, substrate failure
  - 4. Compressive Strength, ASTM C 579 - 9500 psi
  - 5. Tensile Strength, ASTM C 307 - 1,500 psi
  - 6. Flexural Strength, ASTM C 580 - 3500 psi
  - 7. Impact Resistance, MIL D-3134 - >160-inch lbs. No visible damage or deterioration

## **PART 3 – EXECUTION 3.1 EXAMINATION**

Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting flooring performance.

- 1. Verify that substrates and conditions are satisfactory for flooring installation and comply with requirements specified.

## 3.2 PREPARATION

### A. General

- 1. All concrete surfaces shall be free of laitance, oil, grease, curing compounds, loose particles, friable matter, dirt, bituminous products and all other contaminants.

- A. Moisture Testing: Perform moisture vapor emission (calcium chloride) test in accordance with ASTM F 1869-10. The vapor drive should be within range acceptable to manufacturer

### 2. Mechanical surface preparation

- A. Shot blast all surfaces to receive flooring system with a mobile steel shot, dust recycling machine (Blastrac or equal). 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 minimum profile of CSP 5-6 as described by the International Concrete Repair Institute.

- B. Floor areas inaccessible to the mobile blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.
- C. Where the perimeter of the substrate to be coated is not adjacent to a wall or curb, a minimum 1/4" key cut shall be made to properly seat the system, providing a smooth transition between areas. The detail cut shall also apply to drain perimeters and expansion joint edges.
- D. Cracks and joints (non-moving) greater than 1/8" wide are to be chiseled or chipped-out and repaired per manufacturer's recommendations.
- E. At spalled or worn areas, mechanically remove loose or delaminated concrete to a sound concrete and patch per manufactures recommendations.

### 3.3 APPLICATION

#### A. General

1. The system shall be applied in two distinct steps as listed below:

#### A. Substrate preparation

1. Immediately prior to the application of any component of the system, the surface shall be dry, and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil free compressed air.
2. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.
3. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
4. A neat finish with well-defined boundaries and straight edges shall be provided by the applicator.

#### B. Topping

1. The topping shall be applied as a troweled flooring system as specified by the Architect. The topping shall be applied in one lift with a thickness of 1/4" - 3/8".
2. The topping shall be comprised of four components, Base A, Hardener B, pigment pack and Filler C as supplied by the Manufacturer.
3. The pigment pack shall be added to the Base and thoroughly dispersed then the Hardener shall be added to the Base and pigment and be thoroughly mixed by suitably approved

- mechanical means. Rhino Crete Filler C shall then be added to the mixing vessel and mixed in a manner to achieve a homogenous blend.
4. The topping shall be applied over horizontal surfaces using a pin/gauge rake, trowels or other systems approved by the Manufacturer.
  5. Immediately upon placing, the topping shall be rolled with a loop roller.
  6. Allow material to cure.

### 3.4 FIELD QUALITY CONTROL

#### A. Tests, Inspection

1. The following tests shall be conducted by the Applicator:
  - A. Temperature - Air, substrate temperatures and, if applicable, dew point.
  - B. Coverage Rates - Rates for all layers shall be monitored by checking quantity of material used against the area covered.

### 3.5 CLEANING AND PROTECTION

- A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.
- B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.