

**SECTION 033960**

**LITHIUM BASED MOISTURE VAPOR CONTROL CURE SYSTEM AND FINISHING**

**PART 1 – GENERAL**

**1.1 SECTION INCLUDES**

- A. Work includes labor, materials, appliances, tools, equipment, facilities, transportation, and services necessary for and incidental to performing operations in connection with furnishing, delivery and installation of the work of this Section, complete as shown on the drawings and/or specified herein.
- B. Lithium-formulation concrete curing product that shall replace water-cure, blankets, membrane forming cure, and plastic sheeting.
- C. Single application moisture vapor emission and alkalinity mitigation application for suspended, on or below-grade concrete floor slabs that are to receive all-types of floor covering materials

**1.2 RELATED SECTIONS**

- A. Division 03: Cast-in-Place Concrete
- B. Division 07: Vapor retarders
- C. Division 09: Tiling
- D. Division 09: Flooring
- E. Division 09: Painting and Coating
- F. Division 09: Resinous/Resilient Flooring

**1.3 REFERENCES**

- A. American Concrete Institute (ACI)
  - 1. 301 – Structural Concrete for Buildings
  - 2. 302.1R-15 Guide for Concrete Floor Slab Construction
- B. ASTM International (ASTM)
  - 1. C-309 Section 6
  - 2. E-1155 Standard Test Method for Determining Floor Flatness and Levelness Using the F-Number System (inch-Pound Units)

**SYSTEM DESCRIPTION**

- A. Concrete Cure
  - 1. Shall exceed the performance of 7-day water-cured quality concrete per ASTM C-39, ASTM C-1202.
  - 2. Shall reduce or eliminate cure-related cracking.

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3. Shall not to leave a film or coating on the concrete surface. Will not interfere with the bonding or performance of all floor covering adhesives.
  4. Shall be compatible with all bond-breakers, patching compounds, leveling products, and joint sealants.
  5. Shall be GREENGUARD Children and Schools Certified
- B. Moisture Emission and Alkalinity Control
1. Shall protect all types of floor coverings and surface treatments from failure by reducing moisture and alkalinity originating from the concrete.
- C. Fire / Safety / Habitability Criteria:
1. Flammability: Provide water-based materials.
  2. Hazard Rating: Materials used shall comply with local and federal VOC criteria.
- D. Air Quality Compliance:
1. Product shall be GREENGUARD Children & Schools indoor air quality certified.
  2. Shall be listed as Super-Compliant by the South Coast Air Quality Management District
  3. Shall exceed SCAQMD Rule 1113

### 1.4 SUBMITTALS

- A. Product Data:
1. Submit manufacturer's printed descriptions of materials, components and systems; performance criteria; us limitations; preparation instructions and recommendations; storage and handling requirements and recommendations; and installation methods.
  2. Submit all appropriate SDS sheets.
  3. Shall provide certified independent laboratory test reports verifying all claimed ASTM and related test results.
- B. Shop Drawings:
1. Submit shop drawings indicating warranted area.
  2. (optional ) Photo documentation of application.
- C. Quality Assurance Submittals: Submit the following:
1. Qualifications: Submit manufacturer and installer's qualifications specified herein.
  2. Manufacturer's Instructions: Manufacturer's installation procedure.
- D. Closeout Submittals: Submit the following:
1. Warranty:

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### 1.5 QUALITY ASSURANCE

- A. Single Source Control: Obtain concrete curing and vapor emission and alkalinity control treatment materials from a single source.
- B. Manufacturer Qualifications: Manufacturer shall provide the following:
  - 1. Manufacturer shall furnish written proof of operations as a formulator of specialty concrete treatments for at least 20 years.
  - 2. Product shall be manufactured by SINAK Corporation and distributed exclusively through authorized agents to ensure product quality and consistency.
  - 3. Manufacturer shall provide field service representation or real time video support inclusive with no additional expense to the client
  - 4. Manufacturer shall provide documentation of completed, successful projects performed during this period.
  - 5. EPA – US Environmental Protection Agency: Product as supplied must be certified contain no VOC's.
  - 6. Product manufacturer shall maintain product liability insurance of not less than 5 million dollars per occurrence.
- C. Contractor Qualifications:
  - 1. Contractor experienced in performing work of this section who has specialized in the installation of similar work for no less than 5 years.
    - a. Contractor: Company must be approved by SINAK Corporation for the warranted application of VC5.
- D. Contractor Licensing:
  - 1. Applicator shall provide upon request a valid contractor's license issued for either C-33 or C-8 in the State in which this work will be accomplished.
- E. General Contractor is to coordinate slab installation and finish to be compatible with the specified flooring products. General Contractor is to provide a slab the meets the flooring manufacturers requirements.
- F. Unless otherwise noted, the typical concrete slab finish shall conform to:
  - a. ACI 302.1R-15, Guide to Concrete Floor and Slab Construction, Table 4.1, Class 2. Covered, light steel-troweled finish.

### **G. NO BURNISHING OF THE CONCRETE WILL BE ALLOWED**

### 1.6 PRE-INSTALLATION MEETING

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- A. A pre-installation meeting shall be held to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturers warranty requirements.

### **1.7 DELIVERY, STORAGE, AND HANDELING**

- A. Ordering: Shall comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels attached.
- C. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
  - 1. Store materials in a dry, secure area.
  - 2. Maintain minimum temperature of 40° F and maximum temperature of 85° F.

### **1.8 WARRANTY**

- A. Written non-prorated warranty shall cover failure of finish flooring installation due to moisture, moisture vapor and alkalinity emanating from the concrete for a period of (15) years from the date of application. Warranty to include the cost of removal of failed materials and replacement of sealer and new flooring materials. Bond of adhesives is also warranted when applied in strict accordance with manufacturer's written instructions.
- B. Written warranty conditioned upon proper concrete design and placement as detailed in the SINAK warranty.
- C. Warranty shall remain in effect should the surface of the concrete be damaged (up to ¼" deep) during construction, or should mechanical preparation (shot blasting or grinding up to ¼" deep) be done prior to installation of flooring or coatings.

## **PART 2 – PRODUCTS**

### **2.1 SPECIALTY CONCRETE CURE, MOISTURE EMISSION AND ALKALINITY CONTROL SYSTEM**

- A. Contract documents are based on "VC-5 Lithium Cure" manufactured by SINAK Corporation, San Diego, CA , (800/523-3147). Products by other manufacturers that meet or exceed the follow requirements and are approved equivalent by Architect, may be provided.

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### 2.2 SOURCE QUALITY

- A. Source Quality: Obtain curing, moisture and alkalinity control products from a single source manufacturer.
- B. Product performance requirements shall conform to requirements specified herein. Certified independent laboratory test certificates are required to verify test data.

### 2.3 MATERIALS

- A. SINAK VC-5™ Lithium Cure is a clear, water-based, non-toxic material containing no VOC's providing properties and test results in full compliance with the following:
  - 1. ASTM C1202 (Internal Permeability) shall be equal to a 7-day water cure after 28 days.
  - 2. ASTM C-39 (BS 1881) results shall be equal to a 7-day continuous water soak cured concrete samples.
  - 3. Initial Surface Absorption Tests BS 1881: Part 5 – Performance shall be equal to 7 day-water cured concrete samples.
  - 4. ASTM C-309 Section 6 (Water Retention) – Passed

## PART 3 – EXECUTION

### 3.1 PROJECT CONDITIONS

- A. The concrete shall be placed in accordance with normally accepted standards and guidelines by American Concrete Institute (ACI) 302. Water/cement ratio is recommended to be .45 but must be no greater than 0.50.
- B. Site verification of conditions: Verify concrete substrate conditions are acceptable for product installation in accordance with manufacturer's instructions.
  - 1. Prior to work in this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
  - 2. Verify that work in this section may be installed in strict accordance with the original design, all pertinent codes and regulations and all pertinent portions of the referenced standards.
  - 3. Verify concrete finish is within material manufacturer's acceptable range.
  - 4. In the event of discrepancy, immediately notify the Architect. Do not proceed with application in area of discrepancy until all such discrepancies have been fully resolved.

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- C. The addition of waterproofing admixtures is not recommended.

### 3.2 EXAMINATION

- A. All finishing work must be complete and the surface firm enough to support foot traffic without leaving marks prior to the application of treatment.
- B. Soff-Cut operation and subsequent clean up shall be completed prior to or after the application of the product.

### 3.3 INSTALLATION

- A. Curing and Moisture Vapor Emission Mitigation System application shall comply with manufacturer's instructions and recommendations.
- B. VC-5™ application should begin after the concrete bleed water has disappeared and as soon as the concrete surface is firm enough to tolerate foot traffic without damaging the substrate. Ensure there is uniform absorption of VC-5™.
- C. Installation should be continuous. If rain should occur at anytime during process; see "Interrupted Applications" at the end of the Product Information Sheet.
- D. Apply VC5™ in two (2) *LIGHT*, even coats, barley wetting the surface with an airless or low pressure sprayer. Apply the second coat perpendicular to the first coat to create a cross-hatched pattern. DO NOT apply VC-5™ in heavy coats or allow puddles to form.
- E. Coverage Rates: Total two-coat completed coverage rate is 300 square feet per gallon for smooth-toweled concrete. Rates may vary due to substrate and environmental conditions.
- F. Immediately after the first coat is dry apply a second coat. (NOTE: "Dry" means having returned to original color.) Drying time will vary from 10 to 30 minutes depending on temperature and environment.
- G. Clean all equipment by rinsing with water.

### 3.4 PROTECTION

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- A. Be responsible for protection of work area until owner's acceptance. Owner shall be responsible for reasonable care and maintenance of the installed treatment upon completion.
- B. Provide safe storage of product before and during application. Product that freezes shall be discarded.
- C. Be responsible to protect adjacent construction materials, glass, and metals which may be stained by overspray.

### **3.5 TESTING**

- A. The use of VC-5 Lithium Cure eliminates the need for further testing. Sinak Corporation does not require testing for warranty issuance.

### **END OF SECTION**