

CONCRETE CURING – SECTION 03300

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Clear non-toxic treatment suitable as a replacement to water-curing procedures e.g., water soak, ponding, blankets and plastic sheets.
- B. Clear non-toxic treatment for all horizontal concrete surfaces.
- C. Clear non-toxic treatment for all vertical concrete surfaces.

1.2 RELATED SECTIONS

- A. Section 03300 – Cast-In-Place Concrete
- B. Section 03500 – Cementitious Decks and Underlayments
- C. Section 03600 – Grouts
- D. Section 07100 – Damproofing and Waterproofing
- E. Section 07900 – Joint Sealers
- F. Section 09400 – Terrazzo
- G. Section 09600 – Flooring
- H. Section 09700 – Wall Finishes
- I. Section 09900 – Paints and Coatings

1.3 SUBMITTALS

- A. Submit all product data, samples as needed and manufacturers' verification of product conforming to all portions of this specification under provisions of Section 01300 – Administrative Requirements.
- B. Submit all testing data, samples as requested, as well as site testing under provisions of Section 01400 – Quality Requirements.
- C. Installation, testing and product requirement submittals and demonstration will be provided under provisions of Section 01600 – Products Requirements.
- D. Installation shall proceed in strict accordance with manufacturers' recommendations and in full compliance with this specification conforming to Section 01700 – Execution Requirements.
- E. Primary component is a proprietary water-based treatment that contains no VOC's, organic resins or solvents.
- F. Treatment shall conform to requirement of Air Quality Management District (AQMD) in force at time of performance.

1.4 QUALITY ASSURANCE

- A. Manufacturer and/or Distributor will provide assistance and training as needed for proper application of product.
- B. Product will be manufactured by SINAK Corporation and Distributed exclusively through White Cap Construction, Inc. to ensure product quality and consistency.
- C. Manufacturer shall supply written proof of independent testing and proof of completed, successful projects for a minimum of 20 years.

- D. Manufacturer shall have been in the business of concrete treatments for a minimum of 20 years.
- E. EPA – Environmental Protection Agency: Product as supplied must contain no VOC's.

1.5 DELIVERY, STORAGE AND HANDLING

- A. The product shall be delivered in clearly marked containers, whether they are; 5-gallon plastic pails, 55-gallon steel drums or 275-gallon biodegradable totes.
- B. Containers will be in untampered, sealed containers, with the manufacturers' batch number and label clearly affixed to each and every container.
- C. Store in a sheltered environment in unopened containers, as to not allow product to freeze. Any frozen product should be discarded.
- D. In freezing and potentially freezing conditions, containers will be equipped with freeze tags, which indicate whether the container has been exposed to freezing conditions. Any freeze tag showing exposure to freeze conditions will not be used and any containers that have missing tags shall be considered compromised and will not be used and discarded at contractors' expense.

1.6 PROJECT CONDITIONS

- A. Concrete surface shall be set and firm enough to support foot traffic without damage.
- B. If early joint cutting is desired, Soff Cut and clean concrete surface before proceeding with curing installation.
- C. Environment and concrete must not be in freezing or anticipated to be exposed to freezing conditions prior to installation, during or within 12 hours of finished curing treatment installation.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: SINAK Corporation; 1949 West Walnut Avenue, San Diego, CA 92101. Phone: (800) 523-3147, Fax: (619) 295-0227. Email: information@sinak.com.
- B. Substitutions: Not permitted
- C. Supplier: White Cap Construction Supply, Inc.
- D. Other suppliers: Not permitted
- E. Requests for substitutions must be in accordance with provisions of Section 01600.

2.2 MATERIALS

Lithium Cure 1000 Clear, water-based, non-toxic material containing no VOC's providing properties and test results in full compliance with the following:

1. ASTM C1202 (chloride ion penetration) results shall be a minimum of 90% of 14-day soak cure after 28 days. The results of this test are not to be modified in any way and results are based on a minimum 6-inch thick concrete cube or cylinder
2. Compressive Value – BS 1881: Part 16, results shall be a minimum 90% of 7 and 14-day water soak cured samples at a 28-day break. Compression tests are based on minimum 6-inch cube or cylinder. Thinner concrete sections or other modifications will not be allowed.
3. Initial Surface Absorption Test BS 1881: Part 5 – Performance shall be equal to or better than 14-day water soak cured concrete samples.
4. AASHTO T 259 (based on abraded specimens) – 88% improvement over Linseed oil used as a control. Comparisons to untreated concrete are unacceptable
5. AASHTO T 161, freeze/thaw test, 480 cycles: Passed.
6. ASTM C 672, surface-scaling test, 50 cycles: Passed.
7. ASTM C 882, bond strength of epoxy: Passed.
8. ASTM C 501, abrasion resistance test, 38% improvement. Improvement is based on treating 3000-psi concrete and establishing abrasion resistance equivalent or greater than 5000-psi concrete.
9. ASTM C 309 – 06, liquid membrane-forming compounds for curing concrete: conforms to performance criteria in section 6 – results 0.34kg/m².
10. ASTM C 1315 – 06, liquid membrane-forming compounds having special properties for curing and sealing concrete: conforms to performance criteria in section 6.1 – results 0.34kg/m².

PART 3 – EXECUTION

3.1 EXAMINATION

- A. All finishing work must be complete and the surface firm enough to support foot traffic without leaving marks prior to application of treatment.
- B. Soff Cut operation and subsequent clean up shall be completed prior to the application of the product.
- C. Test the area to be treated with a light spray coat of product to ensure consistent even penetration occurs. If spotting, beading or an uneven appearance occurs, do not proceed. Test area again in approximately 15-30 minutes, depending on temperatures.

3.2 INSTALLATION

- A. Treatment application shall be in accordance with the manufacturer's currently published specifications, approved in writing by the manufacturer.
- B. Specified products shall not require mixing or agitation prior to use.
- C. Application shall be in two light even coats.
- D. Flooding or other methods of heavy application is not permitted.
- E. Pre-wetting or flooding with water or agitation procedures shall not be permitted.

- F. Between the first and second coat, the concrete will be allowed to dry completely before application of the 2nd coat begins.
- G. After the 2nd coat has dried completely, a light water spray coat will be used to complete the application.
- H. On smooth surfaces, average coverage will average 650-800 s.f. per gallon.
- I. On broom finishes and higher water-cement ratio concrete, coverage will average 250-500 s.f. per gallon.
- J. Application of treatment and water spray shall be done and completed on the same day of concrete placement. Application will be done as soon as the concrete is firm enough to walk on without marring the surface and the product readily absorbs without spotting or being repelled. NOTE: The only exception to delaying application is in inclement weather and if the concrete placement is late in the day and the concrete surface is still spotting. In those situations, the application will begin as soon as the surface is dry or as weather permits. This delay is allowable until the following morning.
- K. After completion of curing process, no removal or special preparation is required for surface applied adhesives, flooring, coatings, patching, concrete stains, etc.

3.3 PROTECTION

- A. Owner shall be responsible for reasonable care and maintenance of the installed treatment upon completion. Contractor shall be responsible for protection of work area until owner's acceptance.
- B. Owner will provide area for safe storage of product: before and during application. Product that is allowed to freeze must be discarded.
- C. Contractor is responsible for maintaining safe storage.

END OF SECTION