



SECTION 03395

CHEM-SIL 85C
(Sodium Silicate)

Guide Specification

Concrete Hardener, Densifer, Sealer, Dustproofer

PART I - GENERAL

1.01 DESCRIPTION

- A. Specified Work:
 1. Cast-in Place Concrete: Section 0330_____
 2. Finishes: Section 0960_____.
- B. System Description:
 1. The concrete hardener, densifer, sealer and dustproofer flooring system is a complete system manufactured by Chem-Crete to create a chemical and abrasion resistant wearing surface.
 2. The concrete hardener, densifer, sealer and dustproofer flooring system is designed for application on the specific type of substrate indicated on the drawings.

1.02 QUALITY ASSURANCE

- A. Supplier: The 85C flooring system, as manufactured by Chem-Crete, is approved for use on this project.
- B. Applicator: Applicators shall be approved by Chem-Crete as certified applicators.

1.03 SUBMITTALS

- A. Product Data: Product data and installation instructions are contained herein.
- B. Samples: Submit samples of specified 85C flooring system. Samples shall be construed as examples of finish only.
- C. Limited Warranty: Upon completion of installation of the 85C flooring system, submit Limited Warranty within thirty days to validate warranty.

1.04 PRODUCT DELIVERY, STORAGE & HANDLING

- A. Delivery: Materials shall be delivered in original sealed containers, clearly marked with suppliers name, brand name and type of material and MSDS literature.
- B. Storage and Handling: Recommended material storage temperature is 70°F (21.1°C). Handle Products to avoid damage to container. Do not Store for long periods in direct sunlight.

1.05 JOB CONDITIONS

- A. Environmental Conditions:
 1. Do not proceed with application of materials when substrate is less than 40°F (4.5°C).
 2. Do not apply materials unless surface to receive coating is clean and sound.
- B. Safety and Health Conditions:
 1. During coating application, the maximum

effort must be made to protect the coating applicator and others near the workplace from coming in contact with material on skin or in eyes.

2. To prevent excessive skin contact with the material, it is recommended to use fabric coveralls and neoprene or other resistant gloves. To prevent eye contact, wear a full-face mask or OSHA approved protective goggles.

C. Protection:

1. Keep products away from heat, sparks and flames. Post "No Smoking" signs.
2. Minimize or exclude all personnel not directly involved with the coating application.
3. Provide adequate ventilation.
4. After completion of application, do not allow heavy traffic on to coated surfaces for a period of at least 3 to 4 hours @ 70°F (21.1°C)

PART II – PRODUCTS

2.01 MATERIALS:

- A. 85C Flooring Materials:
 1. Primer: 85C Sodium Silicate water based concrete hardener, densifer, sealer and dustproofer that contains no VOCs.
 2. Sealant: Chem-Joint 65 or others approved by Chem-Crete.
 3. Cleaner: Chem-Crete Biodegradable CCC 060.

2.02 PERFORMANCE CRITERIA:

- A. Minimum performance requirements for the Chem-Sil 85C used on this project are:

CURED RESIN PERFORMANCE		
Description	Test Method	Results
Increase Compressive Strength	ASTM C 42	40% Increase @ 14 Days
Increase in Adhesion Strength of Coatings	ASTM C 3359	28% Increase in Adhesion Strength
Retained Moisture Increase	ASTM C 309	83% Moisture Increase over Untreated
Ultraviolet Resistance	ASTM G 23	No Effect to treated areas
Freeze/Thaw	ASTM C 666	50 Cycles Passed

PART III - EXECUTION

3.01 INSPECTION

- A. Verify that the work done under other sections meets the following requirements:
 1. That the concrete substrate surface is clean and sound.
 2. If concrete substrate preparation is responsibility of others, do not proceed with application until substrate conditions meet manufacturer's requirements.

3.02 PREPARATION

- A. Surface Preparation: Clean the concrete substrate surface and remove any contaminants and dust to assure an open and clean substrate surface.
- B. Cleaning: Surface contaminated with oil or grease shall be vigorously scrubbed with Chem-Crete Conclean CCC060 biodegradable detergent. Thoroughly wash, clean and dry. Areas where oil or other contaminants penetrate deep into the concrete may require removal by mechanical methods.

3.03 APPLICATION

Old Concrete Substrate

- A. Spray Chem-Sil 85C evenly at a coverage rate of 200 sq. ft. (18.58 m²) per gallon (8 mils wft). Using a low pressure sprayer is recommended.
- B. Maintain a wet substrate surface with the 85C for 30 minutes and reapply 85C to porous areas that rapidly absorb material. Agitate areas that are slow to absorb the 85C product using a bristle broom or brush.
- C. After 30 minutes remove any excess or unabsorbed material with a broom or squeegee.
- D. Allow concrete substrate to dry (approximately 2 hours @ 70°F and @ 50 % relative humidity (21.1°C) depending on ventilation provided).
- E. After the concrete substrate has dried, thoroughly flush with water to remove any surface crystals. If water is not available use brooms or vacuums to remove excess crystals. **Removal of excess crystals with water is recommended when ever possible.**

New Concrete Substrate

- A. When fresh concrete substrate surface has achieved sufficient strength to support worker weight without leaving foot prints and assuring no ponded water is present, application of 85C product can proceed.
- B. Spray Chem-Sil 85C evenly at a coverage rate of 200 sq. ft. (18.58 m²) per gallon (8 mils wft). Using a low pressure sprayer is recommended.

- C. Maintain a wet substrate surface with the 85C for 30 minutes and reapply 85C to porous areas that rapidly absorb material. Agitate areas that are slow to absorb the 85C product using a bristle broom or brush.
- D. After 30 minutes remove any excess or unabsorbed material with a broom or squeegee.
- E. Allow concrete substrate to dry (approximately 2 hours @ 70°F and @ 50 % relative humidity (21.1°C) depending on ventilation provided).
- F. Allow concrete substrate to dry (approximately 2 hours @ 70°F and @ 50 % relative humidity (21.1°C) depending on ventilation provided).
- G. After the concrete substrate has dried, thoroughly flush with water to remove any surface crystals. If water is not available use brooms or vacuums to remove excess crystals. **Removal of excess crystals with water is recommended when ever possible.**

3.04 CLEANING

- A. Remove debris resulting from completion coating operation from the project site.
- B. Reference Seamless Flooring Systems Manual for Typical cleaning methods.

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