



**MAPECRETE HARD SI**  
**Sodium Silicate Densifier for Concrete**

**SECTION 03 35 00**  
**Concrete Finishing**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Products for densifying, sealing and dustproofing concrete surfaces.

**1.2 RELATED SECTIONS**

- A. Section 03 30 00 – Cast-in-Place concrete
- B. Section 03 40 00 – Pre-cast concrete

**1.3 SUBMITTALS**

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Submit manufacturer's data sheets and safety data sheets (SDS) on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Samples: Submit samples of specified traffic deck system. Samples shall be construed as examples of finished color and texture of the system only.

**1.4 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Minimum 5 years' experience manufacturing similar products.
- B. Applicator Qualifications: Minimum 2 years' experience installing similar products.
- C. Field Sample:
  - 1. Install a sizeable field sample at the discretion of the Engineer of Record.
  - 2. Apply material in accordance with manufacturer's written application instructions.
  - 3. Field sample will be standard for judging color and texture on remainder of project.
  - 4. Maintain field sample during construction for workmanship comparison.
  - 5. Do not alter, move, or destroy field sample until work is completed and approved by owner's representative.
- D. Requirement of Regulatory Agencies: Comply with applicable codes, regulations, ordinances and laws regarding use and application of coating systems.

**1.5 PRE-INSTALLATION MEETINGS**

- A. Convene at least two weeks prior to starting work of this section.

**1.6 DELIVERY, STORAGE AND HANDLING**

- A. Deliver: Materials shall be delivered in original sealed containers, clearly marked with supplier's name, brand name, type of material and legible lot number.



B. Storage and Handling: Recommended material storage temperature is 75°F (23°C). Handle products to prevent damage to container. All materials shall be stored in compliance with fire and safety requirements. Do not store at high temperatures or in direct sunlight.

## 1.7 PROJECT CONDITIONS

A. Prior to starting work, read and follow the Safety Data Sheet (SDS) and container labels for detailed health and safety information.

B. Do not proceed with application of material when surface temperature is less than 40°F (4°C), if precipitation is imminent, or when a damp, unclean or frosty surface. Ambient temperature should be a minimum 40°F (4°C) and rising, and more than 5 degrees Fahrenheit (2.8 degrees Celsius) above dew point. Special precautions are to be taken when ambient and/or surface temperature are approaching, at or above 100°F (38°C) and it may be necessary to limit material application to evening hours for exterior exposed decks.

C. Coordinate waterproofing work with other trades. Applicator shall have sole right of access to the specified area for the time needed to complete the application and allow the vehicular traffic coatings to cure adequately.

D. Protect plants and other surfaces not to be coated against damage or soiling.

E. Keep products away from spark or flame. Do not allow the use of spark-producing equipment during application and until all vapors have dissipated. Post "No Smoking" signs.

F. Maintain work area in a neat and orderly condition, removing empty containers, rags and rubbish daily from the site.

## PART 2 PRODUCTS

### 2.1 MANUFACTURER

#### A. Product Performance:

VOCs	0 g per L
Abrasion/wear resistance – ASTM C779	28 days, + 225% increased wear resistance
Coefficient of friction – ASTM F1679	Dry: 0.81 Wet: 0.72
Liquid repellency – Rilem method 11.4	Untreated concrete: 0.169 U.S. oz. (5 mL)
Water absorbed in 28 hours	Mapecrete Hard SB-treated concrete: 0.034 U.S. oz. (1 mL)
Solids content	17%
pH	11.7

#### B. Acceptable Manufacturer:

MAPEI North America

1144 E. Newport Center Dr.; Deerfield Beach, FL 33442

Toll-Free for CRS Technical Services: Tel. 888-365-0614

Email: [CRS@mapei.com](mailto:CRS@mapei.com)

Web: [www.mapei.com](http://www.mapei.com)

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.



D. Substitutions: Not permitted.

## 2.2 DENSIFIERS AND SEALERS FOR CONCRETE.

A. A water-based, sodium silicate densifier used to harden and dustproof concrete surfaces. It chemically reacts with the free lime and calcium carbonate in concrete, forming a dense and chemical resistance surface.

1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Mapecrete Hard SI.
2. Abrasion/wear resistance: Not less than 225% increase wear resistance when tested according to ASTM C779 at 28 days.

## 2.3 MIXING

A. Comply with manufacturer's instructions for mixing procedures.

# PART 3 EXECUTION

## 3.1 EXAMINATION

A. New, cured (at least 7 days old) and existing concrete surfaces, structurally sound and stable with a hard-troweled finish.

## 3.2 PREPARATION

### For new concrete

A. After final troweling, moisture-cure or sheet-membrane-cure in accordance with ASTM C171, or use a clear, non-residual curing compound in accordance with ASTM C309. Cure for 7 days or longer for the best results.

B. Concrete surface must be free of loose particles, efflorescence, paints, tars, grease, asphaltic materials, bond breakers, curing compounds, wax and any other contaminants before applying Mapecrete Hard SI.

C. Completely remove any curing compound before applying Mapecrete Hard SI.

### For existing/older concrete

A. Concrete surface must be free of loose particles, efflorescence, paints, tars, grease, asphaltic materials, bond breakers, curing compounds, wax and any other contaminants before applying Mapecrete Hard SI.

## 3.3 MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

A. Mapecrete Hard SI is ready-to-use. Use directly from the container.

## 3.4 APPLICATION

Read all installation instructions thoroughly before installation.

A. Pre-dampen concrete in hot weather when ambient temperatures are greater than 80°F



(26°C). Apply Mapecrete Hard SI after all standing water has dissipated.

- B. Apply Mapecrete Hard SI to the concrete surface with a low-pressure sprayer, or by pouring it directly onto the surface and aggressively scrubbing into the surface with a soft bristle broom or mechanical scrubber at the rate of 200 to 250 sq. ft. per U.S. gal. (4.9 to 6.12 m<sup>2</sup> per L).
- C. Additional coats of Mapecrete Hard SI may be applied if the concrete surface is very absorptive.
- D. Remove all excess material from the surface with a squeegee, push it to the next area and repeat.

END OF SECTION