

**AUTHORIZATION AND ACCEPTANCE CRITERIA FOR
SILANE REACTIVE PENETRATING SEALER**

All Silane Reactive Penetrating Sealers to be used by the State of California Department of Transportation (Caltrans) shall be on the Caltrans Authorized Material List (AML) before incorporation into any construction project. This Authorization and Acceptance Criteria establishes procedures to ensure that the Silane Reactive Penetrating Sealer material meets the requirements for the category of "Reactive Penetrating Sealers" within the South Coast Air Quality Management District (SCAQMD) Rule 1113 for Architectural Coatings (Amended February 5, 2016), the California Air Resources Board 2019 Suggested Control Measures for Architectural Coatings (SCM) and Caltrans acceptance criteria. Refer to Section 54-7 Silane Waterproofing Treatment, of the Caltrans 2018 Standard Specifications.

Authorization of Silane Reactive Penetrating Sealers requires the following:

1. For new products, the manufacturer will provide:

- A. Letter of intent specifying the type of product, applications and contact information.
- B. Authorized Material List Submittal Form TL-9502.
<<http://cefs.dot.ca.gov/jsp/forms.jsp>>
For more information see:
<<https://dot.ca.gov/programs/engineering-services/product-evaluation-program>>
- C. Manufacturers product data sheet.
- D. Safety Data Sheets.
- E. When directed to do so, send a quart sample of the material for the Department's testing.

2. All Silane Reactive Penetrating Sealers shall meet the following performance and acceptance criteria:

- A. Consist of an alkyl alkoxysilane as a 100 percent neat material or dispersion. Alkyl alkoxysilanes shall be an alkyl trimethoxy or triethoxy silane with alkyl groups of i-butyl, i-pentyl, i-octyl, n-octyl, singularly or in combination.
- B. Silane Reactive Penetrating Sealers must permeate concrete and masonry surfaces, chemically reacting to form covalent bonds with naturally occurring minerals within the substrate.

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- C. Silane Reactive Penetrating Sealers line the pores of concrete and masonry substrates with a hydrophobic layer, but do not form a surface film.
- D. Meet the following performance requirements.

Property	Test Method	Requirements	Explanation
Water Repellency, %	ATSM C97	80% min.	Improve water repellency compared to untreated concrete/masonry sample
Water Vapor Transmission, grains/hr ft ² @ 37.8°C±1.1°C and a relative humidity of 32±2%	ATMS E96 / ATSM D6490	85% max	Must provide a breathable waterproof barrier that does not prevent or substantially retard water vapor transmission compared to an untreated concrete/masonry sample.
Total VOCs, g/L	ASTM D3960 350g/L max	350g/L max	Total volatile organic carbon (VOC) content including reacted VOCs
Perform as a Chloride Screen	NCHRP 244 Series I test	9.0% max	The calculated content of the solution absorbed by the treated concrete/masonry sample, must be less than the original 9.2% Cl by wt. in the 15% NaCl solution.

3. Send the submittal requirements and product sample to the Chemical Testing Branch in Sacramento, CA.

California Department of Transportation Laboratory
 Attention: Barry Marcks, (Silane Reactive Penetrating Sealer)
 Chemical Testing Branch
 5900 Folsom Boulevard
 Sacramento, CA 95819-4612

- A. When the product submittal package has been reviewed and the product tested for conformance to the acceptance criteria, the Department will notify the manufacturer of the findings, issuing an acceptance letter or a rejection letter.
- B. Authorization of the Silane Reactive Penetrating Sealer is valid for five years from the date it is placed on the AML.

- C. The Department reserves the right to sample and to remove the product from the AML at any time.

4. Reauthorization:

- A. Six months prior to a product's listed reauthorization date, Manufacturers need to contact the Chemical Testing Branch.
- B. Manufacturers shall submit a letter confirming that the formulation of the product has not changed and a quart sample of the product.
- C. When the Department confirms that the formulation of the product has not changed, still meets the Performance and Acceptance Criteria, the AML reauthorization date will be changed to the new date.

If you have questions about the, Silane Reactive Penetrating Sealer, Authorization and Acceptance Criteria, contact Barry Marcks at (916) 227-7918 or at <Barry.Marcks@dot.ca.gov>.