REMR MATERIAL DATA SHEET CM-SE-1.69

Weather Seal Siloxane

1. NAME

Weather Seal Siloxane

2. MANUFACTURER

ProSoCo, Inc.
P.O. Box 1578
Kansas City, KS 66117
Telephone: 913-281-2700

3. DESCRIPTION

Weather Seal Siloxane is a concrete or masonry water repellent based on oligomeric alkyl-alkoxy siloxane. The product is formulated for low-pressure spray application to concrete and masonry surfaces and upon reaction with the surface and humidity is transformed into a highly water-repellent siloxane compound that is chemically bonded to the substrate. Surfaces treated with Weather Seal Siloxane have a totally natural appearance. When properly applied, the treatment does not produce a surface buildup, darkening, or other effects on the natural color or texture of the surface.

4. USES AND LIMITATIONS

Uses: Weather Seal Siloxane is suitable for application to concrete flatwork, parking structures, masonry structures, and other types of concrete structures to reduce water and waterborne salt penetration into the substrate.

Limitations: Weather Seal Siloxane may not be suitable for application to some types of natural stone. Testing is required to assure desired results. It is not suitable for application to gypsum, plaster, or synthetic resin paints or coatings. Always test for compatibility before coating. The sealer should not be applied at surface and air temperatures below 40 °F or above 100 °F. The material should be stored in sealed containers and kept away from extreme heat.

5. MANUFACTURER'S TECHNICAL DATA

The manufacturer reports the following properties of the sealer to be essential for long-lasting, effective water-repellent protection:

- Has low molecular weight, therefore, high penetration into the construction material.
- Contains long alkyl groups that make it suitable for highly alkaline construction materials such as concrete, masonry mortar, etc.
- Has no effect on the vapor permeability of masonry or its ability to dry out and prevents damage caused by entrapping moisture within the masonry.
- Totally penetrates the masonry surfaces imparting no color change to the natural appearance.
- Can be applied to masonry surfaces that are slightly damp.
- Provides quick formation of surface repellency.
- Is a high flash solvent carrier which makes the material pleasant to work with and provides for maximum efficiency in the water-repellent treatment - no loss of active ingredients due to evaporation.

Technical data:

Active substance: Oligomeric siloxane with long alkyl groups
Active substance content: 6.7%
Formation of active material: 5.0%
Specific gravity: 0.78
Flash point: 110 °F
Appearance: Slightly opalescing liquid
Solvent: Mineral spirits
Wt/gal: 6.6 lb

6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Preparation work: A test application is necessary on each surface and masonry material to be treated to ensure compatibility and desired waterproofing results. Test panels are also useful in determining final application rate and procedures. The test should be applied using the same equipment as for job application.

Adjoining glasses, metal, and painted surfaces should be protected from overspray and splash or the sealer. Inadvertent splashes should be removed using mineral spirits before the solution has dried on the surface.

Surface preparation: Surface cracks and voids more than 1/16 in. should be tuckpointed or patched prior to application of Weather Seal Siloxane. All caulks and sealants should be in place and cured prior to application.

The masonry surface should be clean and free of surface dirt, dust, oil, or other surface contaminants. Use proprietary masonry cleaning compounds when necessary followed by thorough rinsing with water. Surfaces to be treated may be damp but should be absorbent to assure good penetration of the sealer.

Application: Weather Seal Siloxane should be applied as packaged (do not dilute or alter). The preferred method of application is with low pressure (20 psi) airless spray equipment or with a heavily saturated brush or roller. The sprayer should be fitted with solvent-resistant hoses and gaskets. For best results on most porous materials, the sealer should be applied in two "wet-on-wet" applications. Apply the sealer in a flooding application, from the bottom up, with sufficient material applied to produce a 6- to 8-in. rundown below the contact point of spray pattern with the masonry surface (approximately 3 to 5 min) and reapply in the same saturating manner. Less material will be required to saturate the surface on the second application.

When a brush or rollers are used, care should be taken to assure that enough solution is applied. Apply sufficient material to thoroughly saturate the surface, making sure to brush out heavy runs or drips that do not penetrate.

Coverage rates: Porosity and texture of the masonry surface will affect the amount of material necessary for effective treatment. The following is a guide for estimating material requirements for various surfaces.

Surface	Coverage, ft^2/gal
Clay brick	100 to 150
Cement brick	80 to 120
Concrete block	60 to 80
Concrete	125 to 175
Stucco	125 to 175
Natural stone (rock face)	100 to 150
Natural stone (smooth cut)	125 to 175

7. CORPS OF ENGINEERS' EVALUATION

Water absorption

Mortar prisms prepared from a Type S masonry mortar and the face of clay bricks, obtained locally, were coated with the material at an application rate of 125-ft^2/gal. RILEM tubes were placed on the treated surfaces 7 days after application, and the water absorption was measured with time.

Water absorption clay brick, 3 days		Water absorption masonry mortar, 3 days	
Treated	Untreated	Treated	Untreated
0.65 ml	15.2 ml*	0.60 ml	3.6 ml*

* 4-hr water absorption

Accelerated weathering

The treated face of the clay bricks that was tested for water absorption was sliced off with a concrete saw and tested according to ASTM G 53. The specimens were tested for 2,000 hr using a time cycle of 4-hr ultraviolet light and 4-hr condensation. Water absorption was then measured using the RILEM tubes.

Water absorption, 3 days before testing	Water absorption, 3 days after 2,000 hr of testing
0.65 ml	0.65 ml

Water-vapor transmission (WVT)

Test specimens were prepared from a Type S masonry mortar measuring 7-1/2 by 7-1/2 by 1/2-in. thick. One side of the specimen was coated with the material. The WVT was then determined according to ASTM E 96. The water method was used and the conditions during test were 90 °F and 50-percent relative humidity.

WVT for treated mortar, $gal/m^2/24$ hr	WVT for non-treated mortar, $gal/m^2/24$ hr	Ratio of WVT for treated to nontreated
52.8	63.4	83.2%

8. ENVIRONMENTAL CONSIDERATIONS

Reasonable caution should guide the preparation, repair, and cleanup phases of sealant activities involving potentially hazardous and toxic chemicals substances. Manufacturers' recommendations to protect occupational health and environmental quality should be carefully followed. Material safety data sheets should be obtained from the manufacturers of such materials. In cases where the effects of a chemical substance on occupational health or environmental quality are known, chemical substances should be treated as potentially hazardous toxic materials.

9. AVAILABILITY AND COST

Information concerning the availability and cost of Weather Seal Siloxane can be obtained by writing the manufacturer at the address given in item 2 or calling 913-281-2700.

10. TECHNICAL SERVICES

Information on technical services can be obtained by writing the manufacturer at the address given in item 2 or calling 913-281-2700.