

# Silane *Dow Corning*<sup>®</sup> Z-2306 Silane

## FEATURES

- Can be used in the formulation of water repellent products
- Produces a hydrophobic treatment that inhibits water absorption

## BENEFITS

- Small molecular structure for deep penetration of concrete surfaces

## COMPOSITION

- Silane
- Liquid

**To assist in formulating penetrating treatments that provide water repellency**

## APPLICATIONS

- Commercial buildings
- Parking decks/garages
- Highways
- Bridge structures

## TYPICAL PROPERTIES

Specification Writers: Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Test	Unit	Result
Color		Clear
Purity	percent	96
Specific Gravity at 25°C (77°F)		0.92
Flash Point, closed cup	°C (°F)	35 (95)
Density	lb/gal	7.7
Volatile Organic Compound (VOC)		
Content	g/L	344
Solvent (Thinner)		Isopropanol, ethanol or various flash point mineral spirits

## DESCRIPTION

*Dow Corning*<sup>®</sup> Z-2306 Silane is high purity, undiluted isobutyltrimethoxy-silane. When diluted with an appropriate solvent, it can be used in the formulation of water repellent products. Upon proper application, the formulated product will penetrate and provide water repellency by chemically reacting with the cementitious substrate. Treated substrates are hydrophobic and retain their original appearance.

*Dow Corning* Z-2306 Silane is a small molecule to allow for deep penetration into the cementitious surface. This material reacts with moisture in the air and in the substrate in the presence of an alkaline or acidic environment to produce hydroxy groups. These hydroxy groups will bond with the substrate and itself to produce a hydrophobic treatment that inhibits water absorption into the substrate. An alkaline environment, such as new

concrete, will catalyze the reaction and speed the formation of the hydrophobic surface.

## HOW TO USE

### Dilution

*Dow Corning* Z-2306 Silane should be diluted in solvents such as alcohols, chlorinated solvents, aliphatic solvents and low molecular weight cyclic polydimethyl siloxane such as *Dow Corning*<sup>®</sup> 244 Fluid before use. Typical dilution levels are 40 percent and 20 percent *Dow Corning* Z-2306 Silane in a solvent. Laboratory performance data for 40 percent dilutions are shown in Table I.

Blends of the solvents can also be used. The evaporation rate of the diluted material can be modified depending on the type and concentration of the solvent. Select the proper solvent for your application, as some silane/solvent blends may darken the

**Table I: Laboratory Performance of Dilution – Modified NCHRP 244 Series II on Concrete<sup>1</sup>**

	Reduction Weight Gain, percent <sup>2</sup>	Average Depth of Penetration, mm <sup>3</sup>
40% in Aliphatic Solvent (Kwik-Dri®)	69.8	3

<sup>1</sup>Water repellent properties of *Dow Corning Z-2306 Silane* when diluted to 40 percent in a solvent and dipped for 30 seconds.

<sup>2</sup>Modified NCHRP cube test, 2-inch cubes, 21-day immersion in water.

<sup>3</sup>Mortar cubes prepared in accordance with procedures outlined in ASTM C 109.

surface. Refer to the manufacturer's data sheet for proper handling and disposal of solvents.

**NOTE:** When using any solvent, always provide adequate ventilation. Follow handling precautions on the solvent container label.

## Application

Methods of application include airless sprayer, roller and brush. When a brush or roller is used, repeated applications should be made until the surface remains moist for a few minutes. If an airless sprayer is used, application should continue until the substrate is thoroughly saturated. Sprayers should be fitted with solvent-resistant hoses and gaskets.

A test application is necessary on each surface to be treated to ensure compatibility and the desired water repellent result. Surfaces should be free of standing water, surface dirt, dust, oils and other contaminants.

Formulated *Dow Corning Z-2306 Silane* may be applied to damp surfaces although dry surfaces are preferred to achieve maximum penetration into the substrate.

Any plants or shrubs should be protected from exposure to the treatment. Any material that should not be exposed to solvents should also be protected.

## HANDLING PRECAUTIONS

*Dow Corning Z-2306 Silane* is flammable and evolves methanol upon cure. Take safety precautions at all times. Do not store or use near sparks or open flames. Do not smoke in the vicinity of application. Use in a well-ventilated area, or wear an air-supplied

respirator. Always wear protective goggles and gloves. If inhaled, move immediately to fresh air. In case of skin or eye contact, flush immediately with water for 15 minutes. Remove contaminated clothing and shoes, and call a physician. Local, state and federal regulations should be consulted for proper disposal procedures.

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY CALLING YOUR GLOBAL DOW CORNING CONNECTION.

## USABLE LIFE AND STORAGE

When stored in original, airtight containers at or below 25°C (77°F), *Dow Corning Z-2306 Silane* has a shelf life of 24 months from date of manufacture. Keep away from heat and open flame.

## PACKAGING

*Dow Corning Z-2306 Silane* is supplied in 38- and 400-lb (17.2- and 181.4-kg) containers, net weight.

## LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Products formulated using *Dow Corning Z-2306 Silane* provide more protection when applied to highly alkaline

new concrete (less than one year old). The degree of protection is not as effective on old concrete or neutral substrates. Do not use on structures under hydrostatic pressure. Do not apply when temperature is at or below 0°C (32°F) or on extremely windy days when evaporation of the solvent would be too rapid.

## SHIPPING LIMITATIONS

DOT Classification: Flammable liquid.

## HEALTH AND ENVIRONMENTAL INFORMATION

To support customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Health, Environment and Regulatory Affairs specialists available in each area. For further information, please consult your local Dow Corning representative.

## LIMITED WARRANTY INFORMATION

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that Dow Corning's products are safe, effective, and fully satisfactory for the intended end use. Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. **Dow Corning specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability, unless Dow Corning provides you with a specific, duly signed endorsement of fitness for use.** Dow Corning disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.