



TECHNICAL DATA SHEET

KEIM SILAN-100 WATER REPELLENT

1. PRODUCT DESCRIPTION

KEIM Silan-100 Water Repellent is a clear 100% Silane that deeply penetrates porous masonry and concrete surfaces with alkaline pH values. Because of the very small molecules, it deeply penetrates the surface, offering optimal performance and long-lasting protection. provide a flat finish with no gloss or sheen, maintaining original surface aesthetics. Silan 100 produces a water beading or a water sheeting effect when properly applied. The pores and capillaries of treated substrates are internally lined but not filled like paint or coating, ensuring the substrate doesn't trap moisture, and the surface remains entirely vapor permeable (breathable).

2. FIELD OF APPLICATION

KEIM Silan-100 Water Repellent is ideal for concrete, natural stone, stucco, CMU, brick and all absorbent masonry where added protection from surface water is required. KEIM Silan-100 works especially well on structures that are exposed to freeze/thaw loads and to protect reinforcing steel from chloride corrosion due to salt penetration. Apply as a standalone clear finish, as a pre-treatment prior to applications of any KEIM stain or finish system in extreme environments. Also use as a clear finish over Keim stains and finishes for added water repellency. Do not use on non-porous surfaces or with neutral or low pH values.

Recommended Uses:

- Interior and exterior
- Horizontal and vertical surfaces
- Above grade
- Parapet walls
- Cast and precast concrete
- Masonry and brick structures
- Natural stone
- Stucco
- Stadium concrete steps, risers, and seating
- Concrete balconies

PRODUCT PROPERTIES

KEIM Silan-100 Water Repellent is a solvent-free alkyl alkoxy silane with an active component content of 100% for maximum performance.

- Completely vapor permeable—allows substrate moisture vapor to freely escape without damaging water repellency
- Penetrates deeply and chemically reacts within pores of masonry and concrete for superior water repellency and durability
- Abrasion resistant
- Easy to use—brush, roll or pump-up sprayer
- Does not form a residue on metal, glass windows or painted surfaces
- 100% active silane means no waste and highest performance
- Protects against chloride ion and other chemical penetration
- Deep penetration into absorbent masonry ensures long-term durability

Technical data

| | |
|---|---|
| Density (approx.) | 0.9 g/cm ³ |
| Penetration Depth | Class II: 10 mm |
| Water absorption and alkali resistance: | Absorption coefficient < 7.5% compared to untreated sample < 10% in alkali solution |
| Mass loss after alternating stress (frost, deicing salt): | Mass loss 20 cycles later than untreated samples |
| ASTM E 514 Water penetration and leakage of masonry | Passes for both dampness and leaking |
| ASTM D 6532 Water absorption % | Brick 0.05% Concrete 0.96% |
| Chloride Ion Permeability | Permeability Class: Very Low |

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| | |
|---|----------------|
| Flashpoint | > 40°C (104°F) |
| VOC | < 10 g/liter |
| All test results performed on Silan-100 applied at recommended coverage and after 14 day cure @ 77°F & 50% RH | |

Color: Clear

Environmental Compliance

| | |
|--------|-----|
| EPA | YES |
| LEED | YES |
| CARB | YES |
| SCAQMD | YES |

3. SPECIFICATIONS/SYSTEMS

For proper water-repellent performance, the porous surface must be thoroughly soaked and saturated with multiple wet-on-wet applications until the surface can absorb no further Silan applications.

- Silan-100 can be used alone as a clear water-repellent finish
- Use as a water-repellent pre-treatment beneath all Keim mineral stains, paints, and finishes applied before Silan is fully cured.
- Use as a clear water-repellent finish over Keim mineral stains, paints, and finishes.
- See application guidelines for use beneath Keim finishes.

4. SURFACE PREPARATION

The mineral substrate must be sound, dry, absorbent, clean, and free from dust and grease. Loose areas, dirt, oily substances, release agents, curing compounds, moss and algae must be removed entirely.

Highly absorbent sanding surfaces:

Pretreat by saturating the surface with KEIM Fixativ, mixed with 3 parts water, and allowed to dry for 12 hours.

New Portland Stucco:

Sinter layers on new Portland stucco or stucco repairs should be pretreated with KEIM Lime Remover, rinsed, and allowed to dry.

New Concrete Surfaces:

Remove all release, form or curing oil residues with KEIM Heavy Duty Masonry Cleaner, rinse and allow to dry. In some cases, sandblasting

may be necessary to remove sealers, release compounds, and to provide an anchor pattern. Concrete and mortar must be cured at least 7 days at 75°F. Clean, strong, and sound concrete requires no pre-treatment.

5. APPLICATION

KEIM Silan-100 is ready-to-use and is applied to saturation by flooding with a low-pressure sprayer or soaking with a brush or roller. Application may be repeated after approximately 4 hours to 1 day to enhance the water-repellent performance. KEIM Silan 100 reacts with the pH and moisture in masonry, forming a water-repellent zone. KEIM Silan 100 may be overcoated after approx. 4 to 12 hours with stains and finishes from the KEIM system or may be used as the sole water-repellent finish.

KEIM Silan-100 may be applied by brush, roller, or pump-up sprayer. Do not apply by airless or air spray.

- Brush - Use a nylon/polyester brush
- Roller - Use a ½" to ¾" nap synthetic roller cover

Application conditions

Ambient and substrate temperature: 40°F and rising. Do not apply it in direct sunlight or on sun-heated substrates. Equipment and tools must be clean and dry. It is essential to avoid contact with water before application. The surface of the building material must be clean, dry, and absorbent and may have to be cleaned beforehand. The quantity to be applied by flooding depends on the absorbency of the substrate (applied to the trial area). Nonabsorbent surfaces cannot be treated with KEIM Silan-100. Avoid direct sunlight and exposure to strong wind. Protect coated surfaces from direct sunlight, wind and rain during and after application for a minimum of 12 hours.

Drying times

Drying times are temperature, humidity and coverage dependent.

| | @ 40-50°F | @ 50°F + |
|----------|--------------|--------------|
| Touch: | 4--6 hour | 2--4 hours |
| Reapply: | 10--24 hours | 10--24 hours |

Installing Keim stain or finish: Allow the surface to dry to touch (2—4 hours), then apply the selected Keim finish per tech data instructions. NOTE: Silan-100 must not cure completely before finishing with stain or paints as water

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repellency will repel stain and finish. If this occurs, re-apply another coat of Silan-100 and allow it to dry to the touch, followed by stain or paint finish application.

Coverage*

| SUBSTRATE | COVERAGE* |
|-----------------------------------|----------------|
| Cast or Pre-Cast Concrete | 275—325 SF/GAL |
| Fiber Cement Siding | 275—325 SF/GAL |
| Portland Stucco | 150—200 SF/GAL |
| CMU Block (smooth) and brick | 100—150 SF/GAL |
| CMU Block (split faced or fluted) | 50—100 SF/GAL |
| Gunite/Shotcrete | 100—150 SF/GAL |
| Brick/Natural Stone Masonry | 225—275 SF/GAL |

*Stated values are based on our experience on smooth surfaces. Surface texture, porosity, application conditions, and type of equipment used will all vary in consumption. Only a test application, using the desired mixing ratio and under production conditions, will forecast the consumption of the system components accurately.

Cleaning

Clean spills, spatters, hands, and tools immediately after use with mineral spirits or benzene.

Mixing with other products

To maintain the specific features of KEIM Silan-100 it must not be inter-mixed with other products or additives. Do not dilute with water.

6. PACKAGING

5 liter (1.3 gal) and 25 liter (6.6 gal) plastic jerry can

7. STORAGE

12-18 months in a tightly closed container under cool, frost-free conditions. Protect from heat, direct sunlight, and freezing.

8. DISPOSAL

Dispose of completely emptied containers by local, state, and federal waste regulations.

HAZARDOUS SUBSTANCE CLASS

R 10: Flammable

R 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S 23: Do not breathe gas/spray.

S 43: In case of fire, never use water.

S 61: Avoid release to the environment. Refer to special instructions/safety data sheet.

9. LIMITATIONS

Do not apply over existing organic (acrylic or oil-based) painted surfaces. Not for use below grade.

10. SAFETY INSTRUCTIONS

Provide appropriate protection for surfaces not to be treated (e.g., glass, natural stone, ceramics, etc.). Any splashes on surrounding surfaces or traffic areas must be rinsed immediately with plenty of water. When using in confined spaces, keep the container tightly closed. Keep away from sources of ignition. Protect the eyes and skin from splashes. Do not eat, drink, or smoke during application. Keep out of reach of children.

The stated values and properties result from extensive development work and practical experience. Our recommendations for application, whether given verbally or in writing, are intended to aid in selecting our products and do not establish a contractual relationship. They do not release those purchasing and applying our products from the duty of establishing for themselves, with due care, the suitability of our products for the intended application. Standard building industry practices must be complied with. We retain the right to modify the products or their application. This edition supersedes all earlier editions.

The information and recommendations outlined in this Technical Data Sheet are based upon tests conducted by or on behalf of KEIM Mineral Coatings. Such information and recommendations set forth herein are subject to change and pertain to the product offered at publication. Consult <http://www.keim-usa.com/Technical-Data-Sheets> for the latest in product technical information.