HBP Silane 100 Breathable water-repellent Exterior

A clear, penetrating, breathable VOC-compliant surface treatment for use on all types of masonry and concrete or cement-based substrates. The unique 100% silane treatment (no solvent) penetrates the substrate and chemically bonds to form a deep hydrophobic layer that prevents water and waterborne contaminants from entering the substrate and causing premature deterioration. Upon application Silane 100 is able to penetrate through, lining the pore structure of the substrate. This permits the development of a consistent level of protection throughout the entire depth of penetration — allowing for longer treatment life, even on wearing surfaces.

1. Product Properties

Silane 100 is used to provide a water-repellent protection on mineral building materials without limiting vapor permeability. It can be applied as a standalone water repellency product or as a primer / pretreatment for surfaces to be painted or stained with BEECK mineral silicate products. It is ideal for concrete, stucco, brick, terracotta, natural stone, all types of masonry, mortars and fiber cement boards. Silane 100 works well on structures that are exposed to freeze/thaw conditions and to protect substrates containing reinforcing steel from chloride salt penetration which can cause corrosion.

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1.1. Composition

- 100% active alkyltrialkoxysilane
- Solvent free, low VOC's
- Penetrates deeper than traditional silane and siloxane solvent- or water-carried systems

1.2. Technical properties

1.2.1. Overview

- For use on exterior or interior surfaces and façades: application area must be properly ventilated during application and drying
- Excellent resistance to chloride ion ingress
- Extremely high water vapor permeability and valuable building physics properties, (100% Moisture vapor transmission)
- Suitable for listed historic buildings
- Non-film-forming – surface remains breathable
- Environmentally responsible, sustainable, low VOC product containing no solvents
- Deep penetration creates a thick layer of protection
- Helps mitigation of AAR & ASR deterioration in concrete
- No change in surface appearance
- Good wear resistance on traffic bearing surfaces
- Long service life
- Contributes to LEED

1.2.2. Important characteristics

Parameter	*Value*	*Conformity*
Density	7.3 lb/gal (874.83 g/l)	
Color	Clear (water white)	
Active Substance	100 % alkyltrialkoxysilane	
Flash Point	145.3° F (62.94°C)	
VOC content	≤ 390 g / l	
Accelerated Weathering	No change	ASTM G85, G53 – 3500 hours

2. Use

2.1. Substrate requirements

- The substrate must be clean, dry, sound, and stable
- Surfaces must be free from all traces of dirt, dust, efflorescence, mold, salt, grease, oil, asphalt, laitance, curing compounds, old paint, coatings and other foreign materials
- Suitable substrates are mineral, porous, and absorbent or partially water repellent
- All new plaster, stucco, render, concrete or masonry must be properly cured and etched before application
- Remove, treat and rinse all algae and fungi infested surfaces with a biological cleaner and a fungicidal treatment
- After wet cleaning, substrates must dry for a sufficiently length of time to ensure they are completely dry
- Only use Silane 100 on dry substrates

2.2. Brief information on the standard system

- Silane 100 is a penetrating product and must be applied in a flow/flood coat with repeated applications over a 20-60 minute application period.
- To obtain proper consumption rates and compatibility, a test area should be treated and well documented to calculate the appropriate application rate. The consumption and area should be monitored during overall application to ensure the correct application rate is being observed.
- Ensure the following conditions: application is performed by qualified persons, substrate suitability, and careful preparation of the surface before treatment
- When using as a primer, the HBP Silane 100 can be overcoated with one of the BEECK silicate systems, (e.g. BEECK Quartz Filler, Beeck Bonding Coat Fine/Coarse, Beecko-Sol, Renosil, Beeckosil, Concrete/Stone Glaze, Etc.) a critical recoat time must be observed. Application of the Silicate paint must occur after a minimum of 4 hours and before 12 hours. If application time is not observed, the surface can start to develop water repellency and may make the application of the paint difficult.
- During the drying period, as the Silane reacts with the substrate, an odor is given off. Ensuring proper ventilation of the application area during this time is required.

2.3. Substrate and preparatory treatment

- ***Lime, lime-cement and cement stucco/render/plaster:***
  - Allow proper drying and curing of newly installed surfaces.
  - Use an etching fluid or abrasive media to remove sinter skin on solid new mortar, plaster/stucco/render.
  - Clean, treat and rinse all algae and fungi infested surfaces with a biological cleaner and a fungicidal treatment.
  - Damp or salt contaminated areas of the façade can be repaired by applying a renovation render/stucco system. (Contact your Beeck representative for more details about the proper treatment of salt damaged facades)
  - For sanding surfaces, flow coat several times with the following mixture, 1 part BEECK Base V and 5 parts water, until completely saturated.
  - On inconsistent or uneven surfaces, it is recommended for the best uniform appearance to apply a slurry coat of BEECK Quartz Filler over the entire surface following the Silane 100 application.
- ***Concrete, cast stone, fair-faced and architectural concrete:***
  - Allow proper drying and curing of newly installed surfaces (Minimum 28 days).
  - Use a high-pressure cleaner and BEECK Formwork Oil Remover according to the factory specifications to clean concrete pore-deep and to remove any residual release agent, then rinse with plenty of clean water. Thoroughly clean interior surfaces also using BEECK Formwork Oil Remover.
  - Use an etching fluid or abrasive blasting method to remove sinter skin on solid new surfaces
  - Clean, treat and rinse all algae and fungi infested surfaces with a biological cleaner and a fungicidal treatment.
  - For sanding surfaces, flow coat several times with the following mixture, 1 part BEECK Fixative and 5 parts water, until completely saturated.
- ***Natural stone, brick, terra cotta, CMU and other masonry:***
  - Allow proper drying and curing of newly installed masonry.
  - Clean thoroughly, check for moisture damage and efflorescence (e.g. salt edges, iron salts) and repair all defective joints and bricks/masonry.
  - Clean, treat and rinse all algae and fungi infested surfaces with a biological cleaner and a fungicidal treatment.
  - For sanding surfaces, flow coat several times with the following mixture, 1 part BEECK Fixative and 5 parts water, until completely saturated.
- ***Old mineral coatings:***
  - Check the adhesion and soundness of all remaining coats.
  - Thoroughly clean tightly bonded coatings
  - Clean, treat and rinse all algae and fungi infested surfaces with a biological cleaner and a fungicidal treatment.
  - Make repairs with proper mortar matching existing surface texture and allow to fully cure before application
  - Note regarding façade cleaning: Surface may absorb water and can be slow to dry, allow for sufficiently long drying periods between cleaning and coating.
- ***Fiber cement boards or other mineral boards and siding:***
  - Thoroughly clean all surfaces to be coated
  - Clean, treat and rinse all algae and fungi infested surfaces with a biological cleaner and a fungicidal treatment.
  - Note regarding façade cleaning: Surface may absorb water and can be slow to dry, allow for sufficiently long drying periods between cleaning and coating.

If your substrate was not listed or if you have questions, contact your BEECK representative for recommended application and surface prep.

- ***Unsuitable substrates*** are surfaces that have been painted with oil based coatings, loam, gypsum, and plastics as well as plasto-elastomeric coatings. Old film forming paints and coatings may need to be removed before application of Silane 100.
- ***Defective substrates*** require specific approaches. Contact your BEECK representative regarding recommended application and surface prep for your specific condition.
  - Clean, treat and rinse all algae and fungi infested surfaces with a biological cleaner and a fungicidal treatment.

2.4. Application instructions

2.4.1. General information

Check substrate suitability as required (see 2.1 and 2.3). Pay particular attention to the absorbency, strength and texture of the respective substrate. Prepare a trial or test area before using on high visibility and critical surfaces. Ensure that the product is applied by a qualified person.

- Carefully cover surfaces which are not to be treated – especially glass, ceramics, window sills, expansion joints, lacquer and anodic coatings – protect them from splashes, drips or splatters.
- Provide personal protective equipment.
- Use only in well ventilated areas and maintain ventilation until product is fully cured. Never use in closed indoor areas, in basements, shafts or manholes.
- Do not apply in wet conditions, if there is a risk of frost, on hot surfaces or in the blazing sun.
- Application surface and drying temperature: +20°F to +100°F (-7°C to +40°C)
- Protect freshly impregnated façades from rain for minimum of 4 hours following completion of application.

2.4.2. Application

- Apply Silane 100 unthinned and using flow coat method until saturated.
- Electric pumps and compression sprayers with low pressure (15-25 psi) are suitable and efficient. Saturating application can also be achieved by using brushes on small areas and power rollers with a 1-inch nap on larger façades.
- Heavily flow coat the material against the wall without atomization. Be careful about drifting splashes caused by the wind. Protect the façade if necessary.
- Apply the Silane 100 in a flooding application from the bottom up, so the material runs down 6 to 8 inches below the application area.
- At an interval of approx. 15-20 minutes, saturate the surface twice wet-on-wet until no more Silane 100 is absorbed by the building material.
- Determine application rate on sample area beforehand and check during application to ensure application rate and coverage per container is being maintained. This is your only method to assure proper application of the product.
- Spread drips and run-off material with a brush or roller
- When flow coating, keep a safe distance from the wall
- Avoid product running onto adjacent areas or into the ground

3. Application Rate and Container Sizes

The application rate (i.e. the quantity required for smooth, normally absorbent substrates) is approx. 100-300 sq.ft. / gallon per coat. It is recommended to determine application rate on a trial area on site considering substrate-related differences.
Container sizes: 1 Gal / 5 Gal

4. Cleaning

Thoroughly clean equipment, tools with solvent (e.g Thinner or white spirit), immediately after use.

5. Storage

Stored in cool and dry environment in unopened containers at temperatures between 10°F (-12°C) and 120°F (50°C), Silane 100 can be kept for 12 months.

6. Hazard notes, safety instructions and disposal

Comply with the Safety Data Sheet. Safety data sheet available on request.
Precautions: Silane 100 is a combustible liquid and should be kept away from heat, sparks, open flame and other sources of ignition. **Silane 100** containers should be kept closed when not in use and should be stored at temperatures between 10°F (-12°C) and 120°F (50°C), away from rain and standing water. When working in an enclosed area, an air respirator should be used. Please refer to the material safety data sheet for more detailed information.
Keep out of reach of children. Do not get in eyes, on skin, or on clothing. Wear eye/face protection. Dispose of product and containers in accordance with the official regulations.

7. Declaration

This technical information is offered as advice based on our knowledge and experience. All information is provided without guarantee. It does not release the user from their responsibility to check the product suitability and application for the specific substrate on which the product is to be used. All information is subject to change without notice as part of our ongoing product development. Non-system additives are not permitted. This information sheet automatically becomes invalid when a new edition is issued.