

PRODUCT DATA SHEET

Potassium Silicate Coating / Liquid Silicate

Cathedral Stone Products has developed a Potassium Silicate Coating for use on all masonry (mineral surfaces) and over latex and acrylic coatings. If necessary, dilute the Potassium Silicate Coating with Liquid Silicate to adjust the translucency of the coating. Potassium Silicate Coating is highly durable and weather-resistant, making it well-suited for exterior applications. The key characteristic of Potassium Silicate Coating is its chemical bond with the substrate, such as masonry or concrete, which is fundamentally different from the way conventional paints adhere to surfaces. Unlike latex and acrylic coatings, Potassium Silicate Coating forms a molecular bond with the masonry substrate.

FEATURES AND BENEFITS

- Bonds to masonry
- Will never peel
- 92 perm (elastomeric/acrylic = 7-8 perm)
- Color fast
- Protects steel reinforcement
- Will not burn
- Not affected by freeze/thaw
- Water Repellent
- No VOCs

KEY CHARACTERISTICS

Weather Resistance: Potassium silicate paint is extremely resistant to weathering. When applied, it penetrates the substrate and reacts chemically to form a micro-crystalline structure that is both breathable and water-repellent. This unique property allows moisture vapor from inside the structure to escape while preventing water from penetrating the surface, reducing the risk of damage from freeze-thaw cycles and damp.

Fire Resistance: Potassium Silicate Coatings are non-combustible and fire retardant, meaning they do not ignite or support combustion, and they form a protective layer that insulates the substrate from heat and flame. They also produce zero flame spread and zero smoke, achieving a high fire rating.

UV Stability: The paint is highly UV stable, meaning it doesn't degrade or fade when exposed to sunlight over time. This stability is due to the inorganic nature of the silicate paints, which lack the organic compounds found in traditional paints that can break down under UV exposure.

Alkaline Nature: The alkaline nature of potassium silicate paint provides natural protection against mold, mildew, and fungi, which are less likely to grow on alkaline surfaces. This makes the paint especially useful in humid or wet climates.

Longevity: Potassium silicate paints are known for their long lifespan, often lasting several decades before needing a repaint. This longevity is attributed to their strong chemical bond with the substrate and resistance to environmental factors.

Limitations: While highly durable, potassium silicate paints are not suitable for all surfaces. They are primarily used on mineral substrates and may not adhere well or react properly with non-mineral surfaces like wood or metal. Additionally, pre-existing paints or treatments on the surface can interfere with the chemical bonding process necessary for the paint to adhere properly.

Viscosity: The viscosity is 1694 cP with a range of 1344 to 2044 cP depending on the pigment used.

APPLICATION PROCEDURES

Diluting Potassium Silicate Coating

Dilute the Potassium Silicate Coating with Liquid Silicate to adjust translucency of the coating.

Surface Preparation

Potassium Silicate Coating should only be used by experienced users. Potassium Silicate Coating can be applied to any sound masonry or plaster surface. (Do not use on wood, plastic, or apply over oil or gloss coating.) The surface must be clean, solid, dry and free from efflorescence. The surface must be completely dry at the time of application. Potassium Silicate Coating is designed for vertical surfaces only. Horizontal surfaces, especially where water can pool, are not suitable for application. Cracks and spalls must be repaired and cured before coating. Cracks can be filled with Jahn M30 or M40 mortars. To ensure even

penetration of the coating, make sure repairs use materials that are compatible to the substrate. Temperature (ambient and substrate) must be at least 45° F (8° C) and below 90° F (32° C). Do not apply when precipitation is expected within 48 hours of application. Do not apply when the temperature is expected to reach the dew point within 24 hours. Protect adjoining surfaces from splashes. Potassium Silicate Coating can only be removed while wet. Once Potassium Silicate Coating dries it CANNOT be removed.

Mixing

Do not mix Potassium Silicate Coating with water. If CSP Coating needs to be thinned out, add Cathedral Stone's Liquid Silicate until the desired consistency is reached. Mix Potassium Silicate Coating with a drill prior to use. When installing multiple units of coating, be sure to "box-mix". ("Box-mixing" is the blending of coating by pouring alternately between two containers.) This will help alleviate minor color inconsistencies between batches.

Substrate absorption definition: The absorption must not be too high or too low for the coating to be applied correctly. Absorption can be tested by applying small amounts of water (drops) on the vertical surface to be coated.

- Low absorption can be defined as water laying or beading on the surface of the substrate (masonry must be etched in cases of low absorption).
- High absorption can be defined as water being absorbed so quickly that all traces of water seem to disappear rapidly.
- Normal absorption can be defined as the water absorbing into the substrate without beading on the surface.

Application

Protect all areas not to be coated prior to application. Substrate must be completely dry before coating. Do not work when precipitation is expected within 48 hours of installation. The coating needs adequate time to bond to the substrate and moisture disrupts this curing process. Apply liberally and spread well, filling all pores and cracks. Work wet into wet. Potassium Silicate Coating should be applied with a short bristle brush. Brushing increases the absorption of the coating into the masonry, resulting in a longer lasting, more durable coating. Spraying and rolling the coating is possible. Allow the first coat to dry of at least 12 hours. Apply a second coat in the same fashion; work wet into wet.

Important Points

- Make sure the substrate is completely dry and there is no expected dew
- Protect coatings from all forms of moisture: rain, dew, snow, etc. for 48 hours.
- Temperature must be at least 45°F (8°C)
- Protect any surfaces not to be coated
- Do not add water to Potassium Silicate Coating
- Always work wet into wet

Clean Up

Place tools immediately in clean water when pausing work (15-30 minutes or more). Clean tools with clean water immediately after finishing work. Dried Potassium Silicate Coating is insoluble in water. Potassium Silicate Coating can be removed from non-porous surfaces with clean water while still wet.

Notice: The information contained herein is based on our own research and the research of others, and it is provided solely as a service to help users. It is believed to be accurate to the best of our knowledge. However, no guarantee of its accuracy can be made, and it is not intended to serve as the basis for determining this product's suitability in any particular situation. For this reason, purchasers are responsible to make their own tests and assume all risks associated with using this product.

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PACKAGING

Consists of 25 kg of Potassium Silicate Coating in a 6-gallon plastic pail.

COVERAGE

Coverage depends on the absorption and structure of the substrate. Determine coverage with a trial application.

One unit of Cathedral Stone's Potassium Silicate Coating (approx. 5.0 gallons) will cover approx. 1200 sq. ft. (6 to 7 mils thick) for a single coat and approx. 750 sq. ft. (10 to 11 mils thick) when two coats are applied. Coverage rates will generally be higher with darker colored coatings.

SAFETY INFORMATION

Eye protection should be worn during mixing to protect from splashing. Avoid contact with skin and mucous membranes. Work in well ventilated areas.

STORAGE AND SHELF LIFE

Store in a dry area, away from direct sunlight. Storage conditions should be in the range of 40° - 80° F with low to average humidity. Average shelf life is six months in original, unopened packaging.

WARNING

Not for internal consumption. Keep out of the reach of children and animals.

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