



TECHNICAL DATA SHEET

# KEIM CONCRETAL®

## SOL-SILICATE PIGMENTED MINERAL STAIN

### PRODUCT DESCRIPTION

Sol-silicate based, thin-layer mineral stain provides a penetrating, low pigment or translucent finish when diluted with CONCRETAL® Dilution or CONCRETAL® Base, or use as an opaque, thin-layer protective coating. This non film-forming, mineral matte finish will not fill-in surface imperfections or change the texture or feel of the concrete, leaving it very natural in appearance.

### FIELD OF APPLICATION

CONCRETAL Pigmented Mineral Stain is uniquely formulated for use on new or bare, aged concrete substrates including concrete, CMU, Gunite, Shot-crete and Portland Stucco. It provides a translucent finish on fair-faced or raw interior and exterior concrete surfaces, and retains the natural, raw appearance of the surface. It is used to decorate or add color or to visually conceal color variations in new or old concrete and for blending and minimizing the appearance of repairs. It may also be used to provide decorative color wash finishes. CONCRETAL Stain offers complete design flexibility and can be diluted as desired with Dilution (Fixativ) or Base for a wide variety of translucent finishes.

CONCRETAL Stain can also be applied as an opaque thin-layer finish retaining the natural surface texture and providing protective water and weather resistant finishes.

Water-proofing may be further enhanced by a pretreatment with SILAN-100 Silane Penetrating Water Repellent. The application of CONCRETAL Stain together with SILAN-100 complies with water protection requirements as per DIN EN 1504-2/2.2.

CONCRETAL Stain is less weather resistant on horizontal and slightly inclined surfaces.

### PRODUCT PROPERTIES

CONCRETAL Stain protects the concrete from the action of weather and prevents the penetration of atmospheric pollutants. Surface textures of the concrete, such as board-formed textures, are fully retained and never "filled-in". The surface is natural mineral matte in appearance. At various dilutions with Dilution

(Fixativ) or Base, different low-pigment finishes may be achieved or optical problems, such as stains or color differences can be corrected.

- Sol-silicate penetrates and forms permanent chemical bonds—won't peel or lose adhesion
- Light fast, color will not fade
- Extremely vapor permeable—keeps concrete dryer naturally
- Weather and moisture resistant
- Not affected by pollution or acid rain
- Mineral matte finish is completely compatible with natural appearance of raw concrete
- Increases light reflectivity—concrete surfaces appear brighter, even in low light

### Technical data

Density	1.20 g/cm <sup>3</sup>
VOC by ASTM D6886	< 1 g/liter
Vapor Diffusion	sd (H <sub>2</sub> O) = <0.01 m
Water Absorption Coefficient	W=0.20 kg/m <sup>2</sup> h 0.5 (acc. to DIN EN 1504)
Lightfastness of color pigment (Fb-Code acc. to BFS technical bulletin No. 26)	A1 Best in class rating No color change after 4 years
Vapor Permeability (ASTM E96)	75–85 Perms
Flashpoint	Non-Flammable
Alkali Resistance ASTM D1308	Passes
Mildew Resistance ASTM D3273/D3274	Passes
Thermal Expansion	Comparable to the concrete substrate
Gloss at 85°	2.0 Mineral Matte Flat
All test results performed on 2 coats Concretal Stain applied at 325–375 sf/gallon	



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## Environmental Compliance

EPA	YES
LEED	YES
CARB	YES
SCAQMD	YES

### Colors:

White plus most standard colors from the KEIM Exclusiv, Naturestein and Avantgarde color palettes.

## SPECIFICATIONS/SYSTEMS

For proper waterproofing and weather resistant performance, 2 coats of CONCRETAL Stain must be applied at recommended coverage rates. Surface should be fully coated, with no pin-holes, runs or holidays.

### Cast or Pre-cast Bare Concrete—Translucent Finish

Pretreat: Keim Concrete Cleaner

1 coat CONCRETAL Dilution (mixed 1:3 with water)

1 coat CONCRETAL Stain (diluted as desired)

1 coat CONCRETAL Stain (diluted as desired)

\*For opaque finish—do not dilute stain

### CMU Block

1 coat CONCRETAL Dilution (mixed 1:3 with water)

1 coat CONCRETAL Stain (diluted as desired)

1 coat CONCRETAL Stain (diluted as desired)

\*For opaque finish—do not dilute stain

### Waterproofing System

Pretreat: KEIM Silan 100 Silane Water Repellent

1 coat CONCRETAL Stain (diluted as desired)

1 coat CONCRETAL Stain (diluted as desired)

### Portland Stucco





Pretreat: CONCRETAL Dilution (mixed 1:3 water)

1 coat CONCRETAL Stain (diluted as desired)

1 coat CONCRETAL Stain (diluted as desired)

## COLOR AND OPACITY

CONCRETAL Stain is available in a full range of colors and can be applied with any amount of opacity, from full-hiding to fully translucent. Note the visual representation of color and opacity.

Color: 9008			
100%	10% Dilution	40% Dilution	80% Dilution
			

## SURFACE PREPARATION

The substrate must be sound, solid, dry, clean and free of dust, grease, oils, salts, moss, algae and other substances that would prevent bonding. Old resin coatings, loose substrate layers and organically bound coats must be removed. Repair damaged areas using the CONCRETAL repair system.

For new concrete structures, concrete should be at least 28 days old and any formwork oil, mold lubricating oil, shuttering oil, mold release oil, concrete form oil residues and curing compounds should be removed with KEIM Heavy Duty Cleaner or by other methods. Substrate must be porous and water should not “bead” on surface.

Clean, properly cured concrete, without a sinter layer, requires no pre-treatment.

Concrete that will be exposed to severe weather or moisture may be pretreated with SILAN 100 for added water repellency. Apply SILAN 100 per tech data sheet. CONCRETAL Stain must be applied within a critical re-coat window of 4–12 hours under normal drying conditions (window may be reduced in extreme drying conditions). If SILAN 100 dries and forms water repellency, reapply another coat, and follow instructions for re-coat with CONCRETAL Stain.

Soft, porous or friable concrete surfaces, surfaces where porosity is variable or aged existing mineral coats may be stabilized and consolidated by pre-treatment with CONCRETAL Dilution (Fixativ). Mix 1 part Dilution with 3 parts fresh water and apply to porous surface to saturation. Allow surface to dry 12 hours before proceeding.

### Translucent Stain Applications

CONCRETAL Stain may be diluted in any ratio with CONCRETAL Dilution (Fixativ) or Base depending on the desired translucency of the finish. It is recommended to coat trial areas in order to determine the dilution ratio. Keep diluted CONCRETAL Stain well stirred before and during work as pigment will settle out quickly in the low viscosity stain. Neither water nor any other materials may be added. It is important to work swiftly using wet-on-wet application to maintain a wet edge to a corner or architectural feature. Never stop staining in the middle of a façade.



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## Note

The CONCRETAL system components of Stain, Base and Dilution (Fixativ) can be mixed together in any desired ratio. Base provides a more uniform and less transparent stain and maintains a heavier viscosity (thicker stain). Dilution (Fixativ) allows for the most translucent low-pigment finishes with brilliant colors and thin layer thickness, and results in thinner viscosity.

## Opaque coating

Two coats of CONCRETAL Stain can be applied as an opaque protective coating which retains the texture of the surface. In this application the first coat should be diluted 10 - 25% with Dilution (Fixativ) and the second coat applied undiluted by brush, roller or spray, keeping a wet edge. It is important to work swiftly wet-on-wet and to maintain a wet edge to a corner or architectural feature.

## APPLICATION

Air and surface temperature: >41 °F and up to maximum 86 °F (5 °C -30 °C) with relative humidity below 80%.

Apply only to dry surfaces and in dry weather. Do not apply in direct sun or sun-heated substrates or in strong wind. Surfaces must be protected after application from rain, wind and direct sun until they are completely cured or a minimum of 12 hours.

Brush: Use a nylon/polyester brush

Roller: Use a 3/8" to 1/2" nap synthetic roller cover

Airless spray: 3000 psi suggested with a tip size of 0.25 in, minimum

Drying times At least 12 - 24 hours between coats with regular drying conditions. Lower temperatures and high humidity can extend dry times.

## Coverage

Substrate	Coverage*
Cast or Precast Concrete	325–575 SF/GAL**
CMU Smooth	50–125 SF/GAL
CMU Split Face	25–100 SF/GAL
Gunite/Shotcrete	100–175 SF/GAL
Portland Stucco	100–175 SF/GAL

\* Stated values are based on experience on smooth surfaces. Surface texture, density, porosity, application conditions and type of equipment used will all vary consumption. Only a test application, using desired mixing ratio and under production conditions will forecast consumption of the stain accurately.  
\*\* Coverage increases for low pigment volume stain applications.

## Cleaning of tools

Clean immediately after use with water. Tools should be kept in the paint material or in water during work breaks.

## Mixing with other products

In order to maintain the specific features of KEIM Royalan and the related system products, they must not be mixed with other products or additives nor must they be diluted with water.

## PACKAGING

Quart, Gallon and 4 Gallon

## STORAGE

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

## DISPOSAL

Dispose of completely emptied containers in accordance with local, state and federal waste regulations.

## HAZARDOUS SUBSTANCE CLASS

n/a

## TRANSPORT HAZARD CLASS

n/a

## DISPOSAL

Any residues must be emptied out of containers before recycling.

### SAFETY INSTRUCTIONS

Provide appropriate protection for surfaces which are not to be coated (e.g. glass, natural stone, ceramics etc.). Any splashes on surrounding surfaces or traffic areas must be rinsed off immediately with plenty of water. Protect the eyes and skin from splashes.

Keep out of reach of children.

The stated values and properties are the result of extensive development work and practical experience. Our recommendations for application, whether given verbally or in writing, are intended to provide assistance in the selection of our products and do not establish a contractual relationship. In particular, 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 make modifications to improve the products or their application. This edition supersedes all earlier editions.



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