



TECHNICAL DATA SHEET

# KEIM RESTAURO® STAIN

## SOL-SILICATE PIGMENTED MINERAL STAIN AND GLAZE

### PRODUCT DESCRIPTION

Sol-silicate based, non-film forming mineral stain provides a penetrating, low pigment or translucent finish when diluted with RESTAURO Dilution/Thinner. The original look and feel of natural or precast stone and masonry or brick are not filled-in or altered by RESTAURO, except for color tone. It may be used as a solid-color finish (undiluted) or as a transparent stain/glaze when mixed with dilution/thinner. Pigment and opacity level is the result of how much dilution (clear) is added. Stains ranging from mostly opaque to almost clear are possible. It has water repellent properties and fulfills the requirements of DIN 18363 sect. 2.4.1.

### FIELD OF APPLICATION

RESTAURO Pigmented Mineral Stain is uniquely formulated for use on interior or exterior new or bare, aged brick, mortar, mortar repairs and natural and precast stone. It should not be applied to existing latex or acrylic painted surfaces. It is used to decorate or add color or to visually conceal color variations in new or old masonry and for blending and minimizing the appearance of repairs. It may also be used to provide a stained appearance on entire stone or brick facades.

RESTAURO Stain can also be applied as an opaque thin-layer finish retaining the natural surface texture and providing a 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 DESIGN Stain together with SILAN—100 complies with water protection requirements as per DIN EN 1504-2/2.2.

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

### PRODUCT PROPERTIES

RESTAURO Stain protects masonry from the action of weather and prevents the penetration of atmospheric pollutants. Surface textures are fully retained and never "filled-in". It provides a natural mineral matte finish.

- Sol-silicate penetrates and forms permanent chemical bonds—won't peel or lose adhesion
- Light fast, color will not fade
- Extremely vapor permeable—masonry remains dryer
- Weather and moisture resistant
- Not affected by pollution or acid rain
- Darkens when wet—repairs blend into natural masonry wet or dry

### Technical data

Density	1.1—1.3 g/cm <sup>3</sup>
Weight	10.1 lbs/gal
VOC by ASTM D6886	< 1 g/liter
Vapor Diffusion	sd (H <sub>2</sub> O) = <0.02 m
Water Absorption Coefficient (DIN EN 1504)	W=0.20 kg/m <sup>2</sup> h 0.5
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

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Thermal Expansion	Comparable to the concrete substrate
Gloss at 85°	2.0 Mineral Matte Flat
All test results performed on 2 coats Restauero Stain applied at 425—475 sf/gallon	

### Environmental Compliance

UL GREENGUARD Gold	YES
EPA	YES
LEED	YES
CARB	YES
SCAQMD	YES
Cradle to Cradle Certification	YES

### Colors:

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

### SPECIFICATIONS/SYSTEMS

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

#### Natural or Pre-cast Stone

Pretreat: Keim Concrete Cleaner (if needed)  
 1 coat Restauero Dilution (if needed to limit absorption on extremely porous surfaces)  
 1 coat Restauero Stain (diluted as desired)  
 1 coat Restauero Stain (diluted as desired)

NOTE: For opaque finish—do not dilute stain

Brick and Mortar  
 1 coat Restauero Dilution (if needed to limit absorption on extremely porous surfaces)  
 1 coat Restauero Stain (diluted as desired)  
 1 coat Restauero Stain (diluted as desired)

NOTE: For opaque finish—do not dilute stain

#### Waterproofing System

Pretreat: KEIM Silan 100 Silane Water Repellent  
 1 coat Restauero Stain (diluted as desired)  
 1 coat Restauero Stain (diluted as desired)

### Portland Stucco

Pretreat: Restauero Dilution  
 1 coat Restauero Stain (diluted as desired)  
 1 coat Restauero Stain (diluted as desired)

### COLOR AND OPACITY

RESTAURO Stain is available in a full range of colors. It is supplied as a solid-color stain. Opacity is adjusted by adding various amounts of Dilution (clear thinner). DO NOT THIN WITH WATER.

### SURFACE PREPARATION

Stone or brick surfaces must be unpainted and in sound condition. Repairs and patches must be cured according to manufacturer's recommendations. Surface should be dry, clean and free of dust, grease, oils, salts, moss, algae and other substances that would prevent bonding. Old paints must be completely removed. Repair damaged areas using concrete or mineral based mortars. NOTE: RESTAURO is not recommended for use over epoxy fillers or grouts.

Soft, highly porous, or friable stone and brick surfaces, surfaces or aged mineral paint may be stabilized and consolidated by pre-treatment with Restauero Dilution. 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

RESTAURO Stain may be diluted in any ratio with Restauero Dilution (Fixative) to result in the desired transparency. It is recommended to test trial areas to determine the dilution ratio. Keep diluted 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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### Opaque Finish

Two coats of undiluted RESTAURO Stain can be applied as an opaque finish to completely hide and color the surface. Dilute the first coat up to 25% by volume with dilution. Apply the second layer undiluted, 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 surfaces or in strong wind. Surfaces must be protected after application from rain, wind, and direct sun until they are dried a minimum of 12 hours at 50% R.H. and 70°F. Higher humidity and lower temperatures extend dry and cure times.

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: Drying is temperature and humidity dependent. At least 12 - 24 hours between coats at 50% R.H. and 70°F. Lower temperatures and high humidity will extend dry times.

### Coverage

Substrate	Coverage*
Natural Stone	425—575 SF/GAL**
Precast Stone	225—275 SF/GAL
Brick	200—250 SF/GAL
Portland Stucco	100—150 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 and on less porous types of masonry.

### 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

Do not mix with water or other products or additives.

### 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.

### HAZARDOUS SUBSTANCE CLASS

n/a

### TRANSPORT HAZARD CLASS

n/a

### DISPOSAL

Any residues must be emptied out of containers before recycling. Dispose of completely emptied containers in accordance with local, state and federal waste regulations.

### 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

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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.

