

# Biocalce Silicato Puro

Certified, eco-friendly, natural fine render, based on pure stabilised potassium silicate, completely coloured with natural soils and minerals.

Biocalce Silicato Puro is particularly recommended for the high-thickness decoration of conventional, restoration and heat-insulating render coats and, more generally, for use on all mineral substrates based on hydraulic binders. Naturally protected with pine oil according to DIN 18363.



## Rating 3

1. Natural based on pure potassium silicate and natural soils
2. Allows walls to breath
3. Naturally protects facades that are particularly exposed
4. Available in 3 grain sizes: 1.0 mm - 1.2 mm - 1.5 mm
5. Bacteriostatic and fungistatic product (CSTB method)\*

- ✓ Pollution Reduced
- × VOC Low Emission
- ✓ Bacteriostatic
- ✓ Health Care
- × Low Ecological Impact

## Natural Ingredients



Pure potassium silicate



Dolomitic Limestone (1.0 mm, 1.2 mm, 1.5 mm)



Natural earth powder pigments and coloured minerals



Pine oil



Siliceous washed natural river sand (0.1–0.6 mm)

## Areas of application

### → Use

Coloured breathable mineral fine render for the decoration of conventional render coats, for restoration and heat insulation, and more generally, for use on all mineral substrates based on hydraulic binders.  
Suitable for decorative and protective finishing on natural panelling insulation systems.  
Biocalce Silicato Puro is particularly well suited to achieve decorations of high aesthetic quality in Edilizia del Benessere (Building for Wellness) in which the all-natural ingredients guarantee compliance with the required levels of breathability and permeability to water vapour, guaranteeing effective protection from atmospheric and environmental agents at the same time.

Biocalce Silicato Puro is suitable for decoration in Historical Restoration projects, where the choice of traditional materials such as pure potassium silicate, natural coloured earths and minerals, mixed in carefully-studied proportions, guarantees conservation interventions in full respect of the existing structures and original materials.

Do not use on wet substrates (not cured); on substrates which are dirty, non-cohesive, powdery. On previous paint coats or lime putty coverings. On gypsum-based substrates, on walls subject to capillary moisture rising without applying first.

## Instructions for use

→ The instructions for use for applications in heat-insulating systems refer, where required, to the Italian Technical Report UNI / TR 11715 "Heat-insulating products for buildings - Design and installation of external heat-insulating systems (ETICS)".

The substrate must be cured, clean and solid, free from loose debris, dust and mould.

New plasters/renders must be suitably scratched and finished with fine render from the Biocalce line to guarantee the best functional and aesthetic results when applying fine mineral plasters/renders.

Old plaster must adhere to the masonry structure and must be damage-free, dry, carefully cleaned to remove remaining traces of previous processes (lime putty coverings, old finishing coats, etc.) and if necessary also finished using fine plasters from the Biocalce line according to the level of finish and smoothness of the plaster.

Preparation of new or old substrates helps save time and colour product, guaranteeing a superior quality decorative layer.

It is necessary to apply a preparation coat, again with a potassium silicate base, such as Biocalce Silicato Consolidante, to improve strength and regulate absorption, in order to promote silication of the subsequent Biocalce Silicato Puro mineral finishing layer. Biocalce Silicato Consolidante base coat may be coloured by adding up to 20% of Biocalce Silicato Puro Pittura to obtain a coloured base before application of fine plasters/renders in the Biocalce Silicato Puro line.  
To even up absorption on surfaces made up of different materials, after consolidation it is necessary to apply Biocalce Silicato Fondo Fino, to guarantee that the subsequent decorative layer will have an even colour. Biocalce Silicato Fondo Fino does not alter the finish of the surfaces.  
When it is necessary to even up absorption and at the same time improve the even or compactness of the surface it is preferable to use Biocalce Silicato Fondo, with natural lamellar fillers and fibre with a filling effect, applied in one or more layers according to the level of coverage required.

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# Instructions for use

For the treatment of substrates other than those mentioned and for additional information on the types of intervention to be carried out, we recommend to consult Kerakoll's Guide to decorating and preparing substrates.

## → Preparation and application

Apply Biocalce Silicato Consolidante approximately 12 hours before the silicate-based cycle.

Wait for at least 12 hours between all the subsequent layers foreseen in the cycle.

The product must be applied with a stainless-steel spreader or trowel and finished with a plastic spreader. Iron spreaders may release traces of metal; over time and in case of bad weather, they may show signs of oxidation on the facade, altering the aesthetic appearance of the decorated surfaces.

Biocalce Silicato Puro is ready and must be stirred slightly before use.

Only if necessary should small percentages of clean water be added to adjust the density to optimum application level. The water must be

added using a low-rev mixer. The product is applied using a stainless steel float and is then finished using a sponge or rigid plastic float. The product can be applied in 1 or 2 coats, according to the roughness of the support. When two coats are used it is recommended that they be applied at an interval of 12 hours.

Do not wet the freshly applied product to continue working, even if it is in the drying phase; water causes the finish to whiten.

Biocalce Silicato Puro mineral coating must be applied to the same wall under the same weather conditions.

Surfaces must be of a size that allows continuous application; if this is not possible, cuts and/or stoppages (joints and pilasters) must be foreseen.

For applications in heat-insulating systems, the indications given refer to UNI / TR 11715 - paragraph 9.

## → Cleaning

Biocalce Silicato Puro is a natural product and tools can be cleaned using water before the product hardens.

## Special notes

- Apply Biocalce Silicato Puro at temperatures from +8 °C to +30 °C and relative ambient humidity lower than 80%. In the event of strong wind, do not apply the product.
- Clean and wash carefully the scaffolding boards, and eliminate any trace of surface dirt before applying the coloured covering. In case of wind or rain, dust, traces of ferrous metals or residues from the building site may be projected onto the still fresh decorated surface and stain it; stains can no longer be removed after the fine plaster has dried.
- When the product is applied externally the scaffolding must be protected with suitable sheets to protect it from direct sunlight, wind and rain during the first 72 hours, to allow the silication process to take place properly.
- At temperatures of below +15 °C, in very damp (> 80%) or misty conditions, the decorative layer requires a longer time (8 - 15 days) to cure completely and finish the silication process. This time may vary according to the environmental conditions. High environmental humidity, condensation and the roughness of the substrate may encourage deposits of dust, spores and other nutrient sources and generate surface growth of micro-organisms that might modify the aesthetics of the finish.
- Unprotected masonry: surfaces exposed to the direct action of rain must be protected against direct percolation of rainwater, at least until the decorative coating is completely cured, in order to prevent dripping or surface crystallization.
- Particular care must be taken when carrying out decorations over full backgrounds. Avoid interruptions between scaffolding levels or on large continuous surfaces.
- When applying internally it is recommended that the rooms be well aired for a few days after application, to promote hardening of the binder by silication.
- Given the purity of the Biocalce Silicato Puro formula and its high alkalinity, adjacent surfaces must be protected during application. Contact with silicate products can damage urban furniture and glass, ceramic, natural stone, terracotta and metals.  
Any splashes of product must be removed immediately with clean water.
- In misty conditions and when the substrate presents a high degree of environmental moisture, yellowish/transparent, slightly shiny and sticky droplets could form after application of the product; they are caused by the water-soluble surfactants present in the product. This phenomenon can be eliminated by washing the walls or simply waiting for repeated rain. The characteristics of the film and the degree of protection are not altered by this phenomenon. Should a further application of the product be carried out, it will be necessary to thoroughly wash the walls, and apply a preventive coat of Biocalce Silicato Fondo. This phenomenon does not occur in stable climatic conditions.
- External decorative coverings are made of binders, pigments and mineral fillers, used to achieve the aesthetic appearance and texture of the product. Should such imperfections appear, they may be treated by applying a paint of the same colour and characteristics as the chosen covering. Please note that after applying strong colours, breakage of aggregates can cause the original colour of the fillers to appear. Once dark colours are completely dry, a blackboard effect may occur when rubbing the surface with hands and/or fingers.

## Certificates and marks



\* Émission dans l'air intérieur Information sur le niveau d'émission de substances volatiles dans l'air intérieur, présentant un risque de toxicité par inhalation, sur une échelle de classe allant de A+ (très faibles émissions) à C (fortes émissions).

## Abstract

In *Edilizia del Benessere (Building for Wellness)* and *Historic Restoration* a highly breathable decorative layer, protected with pine oil compliant with DIN 18363, is created on internal and external plaster/render using wall finish coat containing natural coloured earths and pure potassium silicate (such as Biocalce Silicato Puro 1.0 – 1.2 – 1.5).

Provides natural ventilation to improve indoor air quality, bacteriostatic and fungistatic effect, GreenBuilding Rating 3\*.

Apply Biocalce Silicato Puro using a stainless steel float in one or two coats, according to the roughness of the support, then finish with a sponge or rigid plastic float until the required aesthetic effect is achieved. To be applied in 1 or 2 coats, with a variable surface finishing level, depending on the chosen grain size.

- Biocalce Silicato Puro 1.0: grain size 1.0 mm, coverage  $\approx 1.8 \text{ kg/m}^2$  for each coat

- Biocalce Silicato Puro 1.2: grain size 1.2 mm, coverage  $\approx 2.1 \text{ kg/m}^2$  for each coat

- Biocalce Silicato Puro 1.5: grain size 1.5 mm, coverage  $\approx 2.4 \text{ kg/m}^2$  for each coat

\* Tests carried out according to CSTB method, bacterial and fungal contamination

### Technical Data compliant with Kerakoll Quality Standard

Appearance	white or coloured paste
Chemical nature of binder	pure potassium silicate/organic emulsion $\leq 5\%$ DIN 18363
Shelf life	$\approx 6$ months from production in the original sealed packaging
Warning	protect from frost, avoid direct exposure to sunlight and sources of heat
Pack	25 kg buckets
Temperature range for application	from $+8 \text{ }^\circ\text{C}$ to $+30 \text{ }^\circ\text{C}$
Maximum thickness obtainable per coat:	
- Biocalce Silicato Puro 1.0	1.0 mm
- Biocalce Silicato Puro 1.2	1.2 mm
- Biocalce Silicato Puro 1.5	1.5 mm
pH on packaging	$\approx 11$
Volumetric mass (specific weight) at $+20 \text{ }^\circ\text{C}$	$\approx 1.7 \text{ kg/l}$
Cortical silication (days x mm thickness)	$\approx 15$ days
Coverage on finished substrate with Biocalce Intonachino Fino:	
- Biocalce Silicato Puro 1.0	$\approx 1.8 \text{ kg/m}^2$ per single coat
- Biocalce Silicato Puro 1.2	$\approx 2.1 \text{ kg/m}^2$ per single coat
- Biocalce Silicato Puro 1.5	$\approx 2.4 \text{ kg/m}^2$ per single coat

Values taken at  $+20 \pm 2 \text{ }^\circ\text{C}$ ,  $65 \pm 5\%$  R.H. and no ventilation. Data may vary depending on specific conditions at the building site.

**Performance****Active INDOOR AIR QUALITY (IAQ) - Dilution of indoor pollutants \***

	Flow	Dilution	
Toluene	227 µg m <sup>2</sup> /h	+138%	JRC method
Pinene	313 µg m <sup>2</sup> /h	+88%	JRC method
Formaldehyde	7856 µg m <sup>2</sup> /h	+19%	JRC method
Carbon dioxide (CO <sub>2</sub> )	348 mg m <sup>2</sup> /h	+251%	JRC method
Humidity (Humid Air)	68 mg m <sup>2</sup> /h	+300%	JRC method

**Bioactive INDOOR AIR QUALITY (IAQ) - Bacteriostatic action \*\***

<i>Enterococcus faecalis</i>	Class B+ no proliferation	CSTB method
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**Bioactive INDOOR AIR QUALITY (IAQ) - Fungistatic action \*\***

<i>Penicillium brevicompactum</i>	Class F+ no proliferation	CSTB method
<i>Cladosporium sphaerospermum</i>	Class F+ no proliferation	CSTB method
<i>Aspergillus niger</i>	Class F+ no proliferation	CSTB method

**HIGH-TECH**

Permeability to water vapour	class V1 (high)	EN 7783-2
Permeability to water in liquid form	class W3 (low)	EN 1062-3
Respects the Kuenzle theory	$w < 0,5 \text{ kg} / \text{m}^2 \cdot \text{h}^{0,5} - s_D < 2 \text{ m}$	DIN 18550
Adhesion	≥ 0.3 MPa	EN 1542
Thermal conductivity (λ)	0.98 W/(m K)	EN 1745:2002
Reaction to fire	A2 s1 d0	EN 13501-1

Values taken at +20 ± 2 °C, 65 ± 5% R.H. and no ventilation. Data may vary depending on specific conditions at the building site.

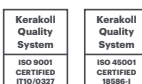
\* Tests carried out according to JRC method - Joint Research Centre - European Commission, Ispra (Varese, Italy) - to measure the reduction of polluting substances in indoor environments (Indoortron Project). Flow and speed in proportion to a standard exterior paint (0.5 mm).

\*\* Tests carried out according to CSTB method, bacterial and fungal contamination

## Warning

- Product for professional use
- abide by any standards and national regulations
- do not add water during application
- scaffolding must be screened with suitable sheets to protect from sun, wind and rain during application and during the curing period (72 hours without rain at a constant temperature of +23 °C and less than 80% humidity)

- we recommend obtaining all the material at the same time
- on large surface areas, gaps must be left around joints, drain pipes, corners and edging, or insert technical joints
- if necessary, ask for the safety data sheet
- for any other issues, contact the Kerakoll Worldwide Global Service +39 0536 811 516 - [globalservice@kerakoll.com](mailto:globalservice@kerakoll.com)



The Rating classifications refer to the GreenBuilding Rating Manual 2013. This information was last updated in July 2023 (ref. GBR Data Report – 0723); please note that additions and/or amendments may be made over time by KERAKOLL SpA; for the latest version, see [www.kerakoll.com](http://www.kerakoll.com). KERAKOLL SpA shall therefore be liable for the validity, accuracy and updating of information provided only when taken directly from its institutional website. The technical data sheet given here is based on our technical and practical knowledge. As it is not possible for us to directly check the conditions in your building site and the execution of the work, this information represents general indications that do not bind Kerakoll in any way. Therefore, it is advisable to perform a preliminary test to verify the suitability of the product for your purposes.