

Biocalce Pietra

Certified, eco-friendly, natural mortar containing pure NHL 3.5, EN 459-1 intended for highly breathable rough rendering and pointing of masonry.

Biocalce Pietra is an M5 class mortar, suitable for the construction of exposed vertical walls and for pointing brick or natural stone coverings. Internal, external.



Rating 5

1. Natural, porous and highly breathable, allows walls to breath
2. Ideal for pointing old brick and stone walls
3. Soft, malleable mixture for fast, easy spreading
4. Can be mixed with inert native materials from 1 to 4 mm in grain size to reproduce the characteristics of the original mortar

- ✓ Pollution Reduced
- ✓ Bacteriostatic
- ✓ VOC Low Emission
- ✓ CO₂ Emission ≤ 250 g/kg
- ✓ Recycled Regional Mineral ≥ 30%

Natural Ingredients



Pure NHL 3.5 certified natural lime



Certified extra-fine natural pozzolan



Siliceous Washed Natural River Sand
(0,1-0,5 mm)



Fine grain Dolomitic limestone
(0.4-1.4 mm)



Pure fine white Carrara marble
(0-0.2/0-0.5 mm)



Mineral geo-binder

Areas of application

→ Use

Pointing or breathable rough rendering for interior and exterior hollow clay block, brick, tufa, stone, and mixed-material load-bearing masonry structures and infill masonry. Biocalce Pietra is particularly well suited for the construction of exposed vertical walls and to point brick or natural stone coverings in Edilizia del Benessere (Building for Wellness) in which the all-natural ingredients guarantee compliance with the required levels of porosity, hygroscopicity and breathability.

Biocalce Pietra is suitable for grouting and exposed reconstruction in Historical Restoration projects: the choice of traditional materials such as natural lime, natural pozzolan, stone, marble and granite, mixed in carefully studied proportions, guarantees conservative interventions in full respect of the existing structures and original materials.

Do not use on dirty, non-cohesive, powdery substrates. On substrates with a lot of interstitial salt deposits.

Instructions for use

→ Preparation of substrates

The substrate must be clean and solid, free from loose debris, dust and mould. Old walls must be carefully cleaned and remaining traces of previous processes removed (lime putty coverings, old finishing coats, etc.) as well as any surface interstitial salt deposits which could impair adhesion. Remove inconsistent rendering mortars from between the stones. Before grouting, always wet substrates.

Adding cement in any quantity would impair the quality of the mortar which is guaranteed by its all-natural origins.

→ Preparation

To prepare Biocalce Pietra, mix one 25 kg bag with about 4.5 l of clean water in a standard concrete mixer or in the bucket. The mixture is obtained by pouring water into the container and then gradually adding the powder. The mixing process can be performed in a cement mixer, in a bucket (working manually or with a low-rev, mechanical stirring device) or using a continuous mixer until a smooth and lump-free mortar is obtained. Use all of prepared mixture; do not reuse it in subsequent mixings. Store the product in places protected against the heat in summer months and against the cold during the winter. Use running water not subject to the influence of outside temperatures.

→ Application

Pointing of exposed vertical walls: when pointing exposed vertical walls, prepare and dampen the joints then apply a first coat of Biocalce Pietra using a trowel, spreader or machine. Press down hard to ensure adhesion. Excess mortar must be removed immediately, and the brickwork must also be cleaned straight away. Wall-level grouting may be sponged.

Construction of exposed vertical walls: when constructing exposed vertical walls, apply the mortar using a trowel to create the mortar bed then place the building block into it, pressing lightly with circular movements until it is correctly aligned and at the right depth; remove any excess mortar on the front of the masonry by cutting and smoothing with the trowel.

→ Cleaning

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

Special notes

- To obtain a mortar that mirrors specific local features, without changing its technical characteristics, add a maximum of 20% by weight of a local inert material with a grain size of 1 to 4 mm to the Biocalce Pietra mix.
- Biocalce Pietra is a non-pigmented natural hydraulic lime product, hence the colour may vary from production batch to batch.
- Furthermore, being a mineral product, the colour of the hardened, dried mortar will vary depending on substrate absorption and weather conditions during application.

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 Historical Restoration, pointing and rough rendering interventions on internal and external masonry structures, made of hollow clay block, brick, tufa, and natural stone, are done using a compact, highly breathable and hygroscopic mortar made of pure NHL 3.5 natural hydraulic lime and mineral geo-binder, extra-fine natural pozzolan, inert siliceous sand and Dolomitic limestone materials with a granulometric curve of 0-1.4 mm, and GreenBuilding Rating 5 (such as Biocalce Pietra).

The required characteristics, obtained exclusively through the use of raw materials of all-natural origin, guarantee a reduced chloride content ($\leq 0.002\%$ Cl).

The natural mortar must also meet the requirements of standard EN 998/2 - G / M 5, initial shear strength ≥ 0.2 N/mm², adhesion to support ≥ 0.5 N/mm², capillary water absorption ≈ 0.4 kg/(m² · min0.5), A1 class reaction to fire. Including the superior workmanship required to assure the structural integrity of walls, corners and indented panels, the flattening of the mortar bed, cutting required to create openings in door/window posts and any other recesses and embedding needed to place windows and doors of any size in position, including the cost of general scaffolding (mobile platforms and trestle) for work at heights of up to 3.5 m, and anything else needed to complete the project to the highest standard. Application can be done by hand or by machine.

Coverage Biocalce Pietra: ≈ 1.7 kg/dm³.

Technical Data compliant with Kerakoll Quality Standard

Type of mortar	performance-guaranteed masonry mortar for general purpose use (G) in external applications subject to structural requirements	EN 998-2
Chemical nature of binder	pure Natural Hydraulic Lime NHL 3.5	EN 459-1
Grading	0 – 1,4 mm	EN 1015-1
Apparent density of powder	≈ 1.57 kg/dm ³	UEAtc
Shelf life	≈ 12 months from production in the original sealed packaging, protect from humidity	
Pack	25 kg bags	
Mixing water	≈ 4.5 l / 1 x 25 kg bag	
Consistency of wet mortar	≈ 165 mm	EN 1015-3
Apparent density of wet mortar	≈ 1.97 kg/dm ³	EN 1015-6
Apparent density of dry, hardened mortar	≈ 1.8 kg/dm ³	EN 1015-10
pH of the mixture	≥ 12	
Temperature range for application	from +5 °C to +35 °C	
Coverage	≈ 1.7 kg/dm ³	

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

Performance		
VOC Indoor Air Quality (IAQ) - Volatile organic compound emissions		
Conformity	EC 1 plus GEV-Emicode	GEV certified 2748/11.01.02
Active INDOOR AIR QUALITY (IAQ) - Dilution of indoor pollutants *		
	Flow	Dilution
Toluene	152 µg m ² /h	+59%
Pinene	213 µg m ² /h	+31%
Formaldehyde	5012 µg m ² /h	test failed
Carbon dioxide (CO ₂)	30 mg m ² /h	+38%
Humidity (Humid Air)	16 mg m ² /h	+14%
Bioactive INDOOR AIR QUALITY (IAQ) - Bacteriostatic action **		
<i>Enterococcus faecalis</i>	Class B+ no proliferation	CSTB method
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		
Compressive strength	M 5 category	EN 998-2
Water vapour permeability coefficient (µ)	≥ 15 ≤ 35 (table value)	EN 1015-19
Water capillary absorption	≈ 0.4 kg/(m ² · min ^{0.5})	EN 1015-18
Reaction to fire	class A1	EN 13501-1
Initial shear strength	≥ 0.2 N/mm ²	EN 1052-3
Adhesion to support (hollow clay block)	≥ 0.55 N/mm ² - FP: B	EN 1015-12
Chloride content	≤ 0,002% Cl	EN 1015-17
Thermal conductivity (λ10, dry)	0.82 W/(m K) (table value)	EN 1745
Specific heat capacity (Cp)	1.7 (106 J/m ³ K) measured with heat exchange analyser	
Radioactivity index	I = 0.145	UNI 10797/1999

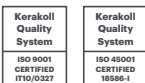
Values taken at +20 ± 2 °C, 65 ± 5% R.H. and no ventilation. Data may vary depending on specific conditions at the building site.

* 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 construction mortar (1.5 cm).

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

Warning

- Product for professional use
 - abide by any standards and national regulations
 - protect surfaces from direct sunlight and wind
 - allow the hardened product to cure and keep it moistened during the first 24 hours
- 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



The Rating classifications refer to the GreenBuilding Rating Manual 2013. This information was last updated in July 2023 (ref. GBR Data Report – 07.23); please note that additions and/or amendments may be made over time by KERAKOLL SpA; for the latest version, see 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.