Biocalce Zoccolatura

WTA-certified dehumidifying plaster/render based on NHL 3.5 natural hydraulic lime for restoring masonry.

Biocalce Zoccolatura is specifically designed for the restoration of masonry damaged by moisture rising, promoting its gradual drying. The combination of high evaporative capacity, low capillary absorption and resistance to salts ensures the plaster/render's long-term durability, contributing to a healthy indoor environment.



1. **Cement-free, suitable for historical restorations**
2. **Min3Ra Technology-controlled micro-pore levels**
3. **WTA certified**
4. **High levels of breathability and resistance to salts**
5. **Reduces formaldehyde (standard ISO 16000-23)**
6. **Bacteriostatic and fungistatic product (standard ISO 846 A/B/C)**
7. **For internal and external use**

kerakoll

Areas of application

→ Use
Breathable restoration and protective plaster/render coat for damp or salt-damp walls, compatible with hollow clay blocks, brick, tuff, stone and mixed materials. For internal and external use.
Specifically designed for the restoration of external plinths subject to staining, blistering, erosion and debonding caused by permanent exposure to atmospheric aggression and the disintegrating effect of saline concentrations caused by moisture rising.
Biocalce Zoccolatura is particularly well suited to create dehumidifying plaster/render coats and plinths in Edilizia del Benessere in which the all-natural ingredients guarantee compliance with the required levels of porosity, hygroscopicity and breathability.

Biocalce Zoccolatura is suitable for breathable restoration in historical restoration projects where 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 substrates which are dirty, non-cohesive, powdery or on previous paint coats and finishing coats. Remove interstitial salt scaling from surfaces.

Instructions for use

→ Preparation of substrates
Remove all previous render and plaster coats from walls or plinths up to 50 cm above the visible signs of damp. Remove rendering mortars and stone blocks or bricks that are crumbling or flaky due to saline concentrations. Clean the surfaces using hydro-sandblasting or sandblasting followed by a pressure washer to remove all remaining traces of previous processes (lime putty coverings, old finishing coats, saline formations, etc.) that may impair adhesion. When carrying out fragment-filling, break-filling, reconstructing of missing sections of masonry, installing through-wall installations and sealing off chases, it is recommended to use Biocalce Muratura due to its chemical and mechanical compatibility with the existing masonry.

→ Preparation
Manual application: to prepare Biocalce Zoccolatura, mix one 25 kg bag with about 5.3 l of clean water in a standard concrete mixer. Mix by pouring water into the clean cement mixer and then add the powder in one operation. Wait until the right consistency forms while mixing. In the first 1-2 minutes the product will seem dry; do not add water at this stage. Keep mixing for 4-5 minutes until a smooth, spongy and lump-free mortar forms. 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. Adding cement in any quantity would impair the quality of the mortar which is guaranteed by its all-natural origins.
Mechanized application: Biocalce Zoccolatura has the same fine grain and plasticity of the best natural hydraulic limes, making it ideal for applications using a plaster sprayer. The excellent consistency of the wet product gained WTA certification, also extended to mechanized application. Tests to prove the compliance of Biocalce Zoccolatura with WTA specifications were carried out using a plaster sprayer and the following accessories: Mixer, Stator 30, Rotor 30+, rotoquirl worm mixer, 25x37 mm flexible hoses, length 10/20 m and spray gun.

→ Application
Biocalce Zoccolatura can be easily applied with a trowel or spray like a normal plaster/render. Prepare the substrate, filling in any fragments if necessary to create a flat, smooth surface. Apply the rough coat using Biocalce Rinzaffo and allow it to cure completely, so as to prevent salt migration into the fresh plaster/render layers, thus preserving the dehumidifying action of the entire system; subsequently, mark out the levelling layers, apply the plaster/render, flatten and float whilst the plaster/render is hardening.

Instructions for use

In restoration plasterwork, apply the plaster up to 50 cm above the visible signs of damp in a layer at least 2 cm thick. Biocalce Zoccolatura should be applied with precision, each coat being no more than 2 cm thick even though the product lends itself easily to form thicker coats. This traditional system of application prevents the formation of micro-cracks. Only apply patch layers to Biocalce Rinzaffo or on previous coats when the lower has hardened. The finishing will depend on the technique selected. Allow the hardened product to cure and keep it moistened during the first 24 hours.

→ Cleaning
Biocalce Zoccolatura is a natural product and tools can be cleaned with water before the product hardens.

Special notes

→ When plastering walls of different ages, or walls with sections that have been clad in different materials, we recommend inserting a galvanized or synthetic anti-alkali plaster-reinforcing mesh into the Biocalce Zoccolatura to rule out any chance of cracking.
→ Always apply Biocalce Rinzaffo on all substrates in order to improve adhesion, regulate absorption and prevent migration of salts into the fresh plaster.
→ When working outdoors, leave sufficient space at the base of the plaster/render from floors, walkways or horizontal surfaces in general subject to water splash and/or temporary standing water, in accordance with standard UNI EN 13914-1.
→ Apply any skirting board after the plaster/render has completely cured.
→ Walls made of cellular concrete blocks should be prepared as indicated by the manufacturer: do not dampen or rough cast these surfaces. Prepare them before plastering by applying Biocalce Fondo consolidant-absorption unifier with a brush or roller. Furthermore, when working on cellular concrete walls, always insert Rinforzo V 50 reinforcing mesh between the two coats of finishing product, made with either Biocalce Intonachino Fino or Granello.
→ Biocalce Zoccolatura 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

CE EN 998-1 NATURAL PLASTER · NHL 3.5 EN 459-1 NATURAL HYDRAULIC LIME · RENOVATION WTA NATURAL RESTORING RENDER · ISO 16000-23 FORMALDEHYDE REDUCTION TESTED · ISO 846:2019 METHOD A/B/C NATURAL BACTERIOSTATIC AND FUNGISTATIC · GEV-EMICODE EC1 PLUS very low emission · eco 2 · EPD-IES-0016745 environdec.com

EMISSIONS DANS L'AIR INTÉRIEUR* A+ (A+ A B C)

** 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

Restoration plastering/rendering will be carried out using a protective, dehumidifying and breathable plaster/render for masonry subject to high levels of humidity and rising damp, based on NHL 3.5 natural hydraulic lime, such as Biocalce Zoccolatura by Kerakoll, after applying Biocalce Rinzaffo.
Certified technical characteristics of the dehumidifying plaster/render: the mortar is CE-marked according to standard EN 998/1 – R / CS II / W24 ≥ 0.3 kg/m², adhesion 0.06 N/mm², co-efficient of resistance to water vapour μ ≤ 3, porosity of the hardened mortar ≥ 40%, thermal conductivity 0.47 W/mK, degree of occluded air during mixing ≥ 25%, resistance to salt according to standard WTA 2-2-91/0 (test passed), reduced water penetration (≤ 5 mm in 24 hrs), reaction to fire class A1, volatile organic compound emissions EC1 Plus GEV-Emicode-certified, bacteriostatic and fungistatic according to standard ISO 846 A/B/C, helps to reduce formaldehyde according to standard ISO 16000-23, compliant with the CAM - (Minimum Environmental Criteria) requirements of paragraphs 1.3.2, 2.6.3, 3.2.4, 2.1.2, 2.6.6, 2.3.17, 2.5.4, 2.4, 2.4.1, 3.2.6 and 3.2.2 of the Italian Ministerial Decree 24/11/2025, with EPD environmental certification according to standards ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021. Certified in accordance with the WTA Merkblatt 2-9-20/D guidelines (plasters/renders for restoration and repair). Coverage Biocalce Zoccolatura: ≈ 12 kg/m² per cm of thickness.

Technical Data compliant with Kerakoll Quality Standard		
Type of mortar	rebuilding/restoration mortar (R)	EN 998-1
Chemical nature of binder	pure Natural Hydraulic Lime NHL 3.5	EN 459-1
Grading	0 – 2.5 mm	EN 1015-1
Apparent volumetric mass	≈ 1.36 kg/dm³	UEAtc
Shelf life	≈ 12 months from production in the original sealed packaging, protect from humidity	
Pack	25 kg bags	
Mixing water	≈ 5.3 l / 1 x 25 kg bag	
Consistency of wet mortar 0’	≈ 174 mm	EN 1015-3
Consistency of wet mortar 15’	≈ 173 mm	EN 1015-3
Apparent density of wet mortar	≈ 1.47 kg/dm³	EN 1015-6
Apparent density of dry, hardened mortar	≥ 1.36 kg/dm³	EN 1015-10
Water retention	≥ 85%	DIN 18555-7
Occluded air / plastering machine occluded air	≥ 25%	EN 413-2
Temperature range for application	from +5 °C to +35 °C	
Minimum thickness obtainable	≈ 2 cm	
Maximum thickness obtainable by coat	≈ 2 cm	
Coverage	≈ 12 kg/m² per cm of thickness	

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 relating to indoor environmental quality			
VOC – Volatile organic compound emissions			
Conformity	EC 1 plus GEV-Emicode		GEV certified 2757/11.01.02
Formaldehyde reduction – standard ISO 16000-23			
The product helps to reduce formaldehyde levels			
Dilution of indoor pollutants *			
	Flow	Dilution	
Toluene	356 µg m²/h	+138%	JRC method
Pinene	374 µg m²/h	+162%	JRC method
Formaldehyde	4677 µg m²/h	+49%	JRC method
Carbon dioxide (CO_2)	341 mg m²/h	+386%	JRC method
Humidity (Humid Air)	48 mg m²/h	+126%	JRC method

*Tests carried out in-house in accordance with a test method developed in collaboration with the JRC: 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 cement-based finishing product (3 mm).

HIGH-TECH

Performance characteristic	Test methods	Requirements of EN 998-1	Performance
Compressive strength after 28 days	EN 1015-11	Reference class	CS II
Adhesion to support (hollow clay block)	EN 1015-12	None	≥ 0.1 Mpa – FP:B
Water absorption through capillary action	EN 1015-18	categories	W2
W24 capillary water absorption	EN 1015-18	Value	≥ 0.3 kg/m²
Depth of water infiltration (24 hours)	EN 1015-18	Value	24 h ≤ 5 mm
Water vapour permeability coefficient (µ)	EN 1015-19	Declared value	µ ≤ 3
Thermal conductivity ($\lambda_{10,\ dry}$)	EN 12667	table value	0.47 W/mK
Specific heat capacity (Cp)	measured with heat exchange analyser		1.43 (10^6 J/m³K)
Durability (freeze-thaw)	998-1		evaluation based on regulations applicable to mortar in the country of use
Reaction to fire	EN 13501-1	Euroclass	A1

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

Warning

→ Abide by any standards and national regulations
→ protect surfaces from direct sunlight and wind
→ sandblast or hydro-sandblast walls subject to rising damp
→ 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

Kerakoll Quality System ISO 9001 CERTIFIED IT10/0327

Kerakoll Quality System ISO 45001 CERTIFIED 18586-I

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