SECIL ARGAMASSAS

NHL PRODUCTS FOR

Sustainable Building and Renovation





INTRODUCTION

Founded in 1891, Secil Argamassas is proud to be one of the oldest Natural Hydraulic Lime plants in the world.

Part of the Secil Group, Secil Argamassas features a diversified range of products, formulated with Natural Hydraulic Lime, and natural renewable raw materials, such as cork, with the intention of ensuring future generations a sustainable development, promoting values of environmental, social, cultural and economical nature.

Secil Argamassas has implemented a Quality Management System according to the Standard EN ISO 9001:2008. All of the products developed have EC branding, in accordance with the European Standards in force.



Maceira Production Unit





Home apartment building, Lisbon

APPLICATIONS OF SECIL NHL

- Mortars for Sustainable Building
- Renders for the renovation of old buildings or in new construction
- Decorative finishes
- Block and brick-laying mortars
- Re-pointing mortars for stone masonry
- Screed mortars
- Decorative finishes
- Limecrete
- Production of bricks or other construction artefacts
- Injection grouts
- Soil treatment



SECIL
NATURAL HYDRAULIC LIME

Hydraulic lime is a binder used successfully for hundreds of years in construction. It stands out for hardening and achieving mechanical resistance in contact with water. The carbon dioxide existent in the atmosphere contributes equally for the hardening process.

Nowadays, natural hydraulic lime is applied as a selected binder in sustainable construction and in the renovation of ancient buildings.

IN SUSTAINABLE CONSTRUCTION:

The production of Natural Hydraulic Lime requires a smaller amount of energy, thus releasing less CO_2, when compared to other conventional hydraulic binders. It is a breathable and durable material, with a unique capacity to absorb CO_2, during the carbonation process of its free lime content. The mortars produced with Natural Hydraulic Lime are also highly recyclable materials.

IN RENOVATION:

Mortars prepared with Natural Hydraulic Lime are particularly adequate for the renovation of ancient buildings, thanks to their exceptional properties, which ensure a total compatibility with this type of substrates. Characteristics of elasticity and permeability to water vapor, salt resistance and the moderate development of mechanical resistance, ensure an excellent preservation of historical heritage.

Secil Natural Hydraulic Lime is produced at the Maceira factory, located in the centre of Portugal. The traditional production techniques have been passed on from generation to generation for over 120 years. This vast experience, in association with a strict quality control, ensures Secil a unique knowledge in Natural Hydraulic Lime, as evidenced by the thousands of works supplied.

Secil produces two types of Natural Hydraulic Lime, NHL 3.5 and NHL 5. Both limes are accredited according to the most recent specifications of the European Standard EN 459-1:2010.

ADVANTAGES

- Pureness (100% natural, free from additives)
- Total physical and chemical compatibility with older substrates
- Hydraulic binder with gradual development of mechanical resistance
- Excellent workability
- High permeability to water vapor
- High content of free lime
- Great elasticity
- Applicable over several types of substrates (brick, blocks, wood, concrete, adobe)
- According to the standard EN 459:2010
- Sustainable and recyclable material



Museum of S. Roque, Lisbon



REABILITA CAL

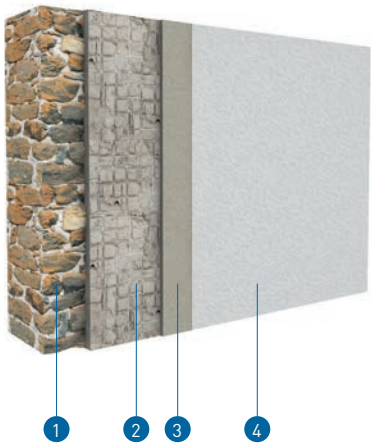
NATURAL HYDRAULIC LIME RENDER MORTARS

Secil's vast experience in lime mortars has been proved in many rehabilitation works on centennial buildings of high prestige. We highlight the use of our products in the renovation of buildings such as the National Museum Machado de Castro in Coimbra, with two thousand years of history; in the Museum of S. Roque in Lisbon, built in the 15th century; in the Palace of Seteais, from the 18th century, and more recently in the Trindade Theatre in Lisbon, 19th century.

Secil's **REABILITA CAL** is a complete range of mortars formulated exclusively with Natural Hydraulic Lime, natural aggregates and additives. They represent a complete solution for facade renovation on old buildings, featuring an adequate physical and chemical compatibility with these substrates. They are also adequate for use in new building.

The solution is composed by **REABILITA CAL Render** for the leveling and filling of facades and interior walls. In renovation works, we recommend the previous use of our **REABILITA CAL Consolidation** mortar in order to stabilize and homogenize the ancient substrate. The finish is performed with our **REABILITA CAL Finishing** mortar, available in three colors: Natural, Ocre and Brick. These finishes do not require painting.

Coating solution for facades, interior walls and ceilings with **REABILITA CAL**



LEGEND

1. Substrate
2. **REABILITA CAL Consolidation** (applicable over renovation works)
3. **REABILITA CAL Render**
4. **REABILITA CAL Finishing**

ADVANTAGES

- Mortars formulated exclusively with Natural Hydraulic Lime
- Total physical and chemical compatibility with ancient substrates
- Excellent deformability
- Excellent permeability to water vapor: breathable
- Gradual development of mechanical resistance
- Without calcium sulfate
- Highly resistant to salts
- High content of free lime
- Absorbs CO_2 throughout carbonation
- Great workability
- High durability
- Recyclable

NHL Products for **Sustainable Building and Renovation**
REABILITA RJ 35

House in stone masonry, Ponte de Lima



REABILITA RJ 35

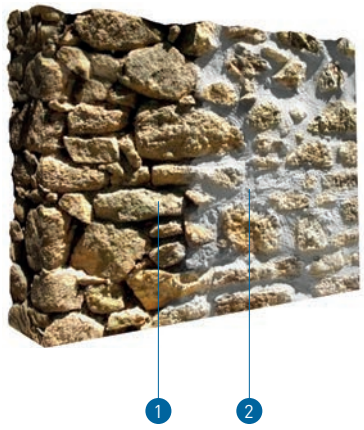
RE-POINTING MORTAR FOR STONE MASONRY

The stone masonry facades or walls, at sight, represent architectural solutions of high aesthetic value, and carry a long tradition in construction. The **REABILITA RJ 35** mortar, formulated exclusively with Natural Hydraulic Lime, was especially designed for this application, ensuring an extended durability. Applicable in renovation or in new construction, the Secil **REABILITA RJ 35** features a chromatic shade of beige, which blends in perfectly with most types of stone masonry.

ADVANTAGES

- Formulated exclusively with Natural Hydraulic Lime
- Colored beige rustic finishing
- Excellent deformability
- Excellent permeability to water vapor: Breathable
- Without calcium sulfates
- High content of free lime
- Absorbs CO_2 throughout carbonation
- Resistant to salts
- Great workability
- High durability
- Recyclable

Re-pointing solution for stone masonry with **REABILITA RJ 35**



LEGEND

1. Stone Masonry
2. **REABILITA RJ 35**

One-family home, Santarém



Secil ecoCORK Lime

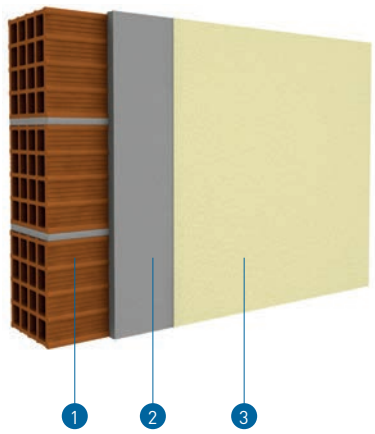
NATURAL HYDRAULIC LIME-BASED RENDER MORTAR WITH NATURAL CORK AGGREGATES

NATURALLY BUILDING!

In the framework of sustainable construction, Secil features an exceptional innovation which brings a new height to environmental performance in a render mortar. The **Secil ecoCORK Lime** render.

This is a render formulated exclusively with Natural Hydraulic Lime, which stands out for incorporating cork aggregates, of natural and renewable origin, instead of natural but non-renewable, siliceous origin aggregates. Additionally, cork is an excellent thermal insulator, and the **Secil ecoCORK Lime** render contributes for an effective reduction of energy consumption in buildings.

Coating solution for facades, interior walls and ceilings with **Secil ecoCORK Lime**



LEGEND

1. Substrate
2. **Secil ecoCORK Lime**
3. **REABILITA CAL Finishing**

ADVANTAGES

- Render of extreme environmental performance
- Formulated exclusively with Natural Hydraulic Lime
- Incorporates natural and renewable cork aggregates
- Recyclable product
- Exceptional permeability to water vapor
- Improves thermal performance of buildings
- Improves the dynamic behavior of the constructive solutions, with an excellent capacity of energy storage or thermal delay
- Improves acoustic insulation, contributing for noise reduction to aerial sounds up to 7dB
- Light material (reduction of around 50% in bulk density for every m^3, in comparison with other traditional lime mortars)
- High labor efficiency
- Reduction of the quantity of materials used in every m^2 of construction
- Reduction of CO_2 emissions, in transport (up to 50% of the emissions in comparison to traditional renders)
- Reduction of 70% in volume in the consumption of natural but non-renewable aggregates
- Absorbs CO_2 throughout carbonation
- High durability (excellent behavior during freeze/thaw cycles)
- Excellent deformability
- Great workability
- Resistant to salts

PRODUCT TECHNICAL TABLES

SECIL NATURAL LIME





PHYSICAL PROPERTIES	Secil NHL 3,5	Secil NHL 5
Color	Beige	Beige
Fineness to 90 µ (%)	≤ 15,0	≤ 15,0
Fineness to 200 µ (%)	≤ 2,0	≤ 2,0
Setting time (h) - Initial	> 1	> 1
Setting time (h) - Final	< 30	< 15
Expansion – alternative method (mm)	< 20	< 20
Bulk Density (kg/dm³)	0,65 ± 0,05	0,65 ± 0,05
Plasticity/Blaine value (cm²/g)	9000	9400
Free water (%)	≤ 2	≤ 2
MECHANICAL PROPERTIES		
Compressive Strength 2 days (MPa)	-	≥ 2,0
Compressive Strength 28 days (MPa)	≥ 3,5 and ≤ 10	≥ 5,0 and ≤ 15
CHEMICAL PROPERTIES		
Sulphate SO_3 (%)	≤ 2,0	≤ 2,0
Free Lime $Ca(OH)_2$ (%)	≥ 25,0	≥ 15,0
Anhydrite $CaSO_4$ (%)	< 1	< 1
Additions (Waterproofers, plasticisers, water retainers, pozzolans, air entrainers)	0	0
OTHER PROPERTIES		
EC Branding	EN 459-1:2010	EN 459-1:2010
Packaging	25 Kg bag	25 Kg bag

REABILITA CAL





	REABILITA CAL Consolidation	REABILITA CAL Render	REABILITA CAL Finishing
USE	Natural Hydraulic Lime- based mortar for the stabilization and homogenization of ancient masonry	Render mortar with natural fibers, formulated with Natural Hydraulic Lime. For the filling and leveling in rehabilitation systems on ancient masonry	Finishing mortar formulated with Natural Hydraulic Lime for rehabilitation systems on ancient masonry
PARTICULAR PROPERTIES	Strong adhesion to ancient substrates	Features natural fibers	Allows smooth finishes. Available in three colors (natural, ochre and terracota). Paint dispensing
SUBSTRATES	Irregular ancient stone masonry of extensive mortar matrix and low resistance (ordinary), panel and adobe masonry.	Substrates prepared with **REABILITA CAL Consolidation**, ancient stone or brick masonry	**REABILITA CAL Render Secil ecoCORK Lime**
FIELD OF APPLICATION	Exteriors and Interiors	Exteriors and Interiors	Exteriors and Interiors
TYPE OF WORKS	Renovation	Renovation or new construction	Renovation or new construction
APPLICATION	Manual or mechanical projection	Manual or mechanical projection	Manual
RECOMMENDED THICKNESS	1 to 2 cm (eventually up to 4 cm)	1 to 2 cm per layer	Up to 3 mm
THEORETICAL CONSUMPTION	16 kg/m^2/cm	14 kg/m^2/cm	1,2 kg/m^2/mm
COMPRESSIVE STRENGTH (CLASS)	CS II	CS II	CS II
PERMEABILITY TO WATER VAPOR	< 15,0 μ	< 5,0 μ	< 5,0 μ
ELASTICITY MODULE	2000 – 4000 N/mm^2	2000 – 4000 N/mm^2	2000 – 4000 N/mm^2
GRAIN SIZE	<4,0 mm	<3,0 mm	<1,0 mm
REACTION TO FIRE	A1	A1	A1
EC BRANDING	EN 998-1	EN 998-1	EN 998-1
PACKAGING	25 kg bag	25 kg bag	25 kg bag

PRODUCT TECHNICAL TABLES

REABILITA RJ 35



	REABILITA RJ 35
USE	Joint re-pointing
COLOR	Beige
SUBSTRATES	Stone masonry
FIELD OF APPLICATION	Exteriors and Interiors
TYPE OF WORK	Renovation or new construction
APPLICATION	Manual
RECOMMENDED THICKNESS	Up to 3 cm per filling layer
THEORETICAL CONSUMPTION	1,8 kg/m^2/mm
ELASTICITY MODULE	4000 N/mm^2
REACTION TO FIRE	A1
EC BRANDING	EN 998-1
PACKAGING	30 kg bag

Secil ecoCORK Lime



	Secil ecoCORK Lime
USE	Filling and leveling of facades, interior walls and ceilings
PARTICULAR PROPERTIES	Incorporates natural cork aggregates
SUBSTRATES	Substrates prepared with **REABILITA CAL Consolidation**
FIELD OF APPLICATION	Exteriors and Interiors
TYPE OF WORKS	Renovation or new build
APPLICATION	Manual
RECOMMENDED THICKNESS	Up to 2 cm per filling layer
THEORETICAL CONSUMPTION	8 kg/m^2/cm
THERMAL CONDUCTIVITY (λ10,DRY)	0,1 W/m.K
EC BRANDING	EN 998-1 (Thermal render Class T2)
PACKAGING	16 kg bag



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SECIL ARGAMASSAS
Faz parte da Solução

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