

# Secil NATURAL LIME NHL 5

NHL 5 – NATURAL HYDRAULIC LIME

TC.E.077.5 EN

## 1. DESCRIPTION

*Secil NATURAL LIME NHL 5* is a natural hydraulic lime, hydraulic binder constituted by silicates, calcium aluminates and calcium hydroxide, obtained by firing marl limestone followed by grinding. *Secil NATURAL LIME NHL 5* is classified as NHL 5 according to NP EN 459-1.

*Secil NATURAL LIME NHL 5* is a singular binder, because apart from the hydraulic setting, it also presents air setting, obtained by carbonation with atmospheric CO<sub>2</sub>.

## 2. FIELD OF USE

In the fabrication of mortars, as sole binder or in admixture with other hydraulic or air binders, giving them workability and flexibility, reducing significantly the retraction of hydraulic mortars (for example, masonry, render and finish mortars).

In the fabrication of mortars for rehabilitation, as sole binder, in the execution of external and internal renders on old substrates. In different civil engineering uses, such as soil treatment.

## 3. PRODUCT CHARACTERISTICS

CHEMICAL CHARACTERISTICS	VALUE	STANDARD
Free Lime Ca(OH) <sub>2</sub>	≥ 15,0 %	EN 459-1
Sulfate	≤ 2,0 %	EN 459-1
PHYSICAL CHARACTERISTICS	VALUE	STANDARD
Color	Beige	-
Free water	≤ 2,0 %	EN 459-1
Apparent density	0,65 ± 0,05 kg/dm <sup>3</sup>	-
Density	2,7 g/cm <sup>3</sup>	-
Fineness	90 μm ≤ 15,0 % 200 μm ≤ 2,0 %	EN 459-1
Expansion	≤ 2,0 mm	EN 459-1
Penetration	> 10 mm and < 50 mm	EN 459-1
Air level	≤ 5,0 %	EN 459-1
Setting time	Initial > 1 h Final ≤ 15 h	EN 459-1
MECHANIC CHARACTERISTICS	VALUE	STANDARD
Compressive strength (28 days)	≥ 5,0 and ≤ 15,0 MPa	EN 459-1

## 4. APPLICATION

### FABRICATION OF MORTARS

The dosing of *Secil NATURAL LIME NHL 5* in a mortar should be appropriate to the intended use.

Premix *Secil NATURAL LIME NHL 5* with the aggregate and afterwards add the right quantity of water to obtain a good workability.

For guidance as to the trace to use, we advise the consultation of the Table in point 5.

### Restrictions

Do not apply mortars under temperatures below 5º C and above 30º C, avoiding the application in situations of high sun exposure and/or under strong winds.

Do not use weakened mortars or that have already started the setting process.

Avoid fast dry of the mortars, by watering the substrate, 1 to 2 hours before the application and as soon as the mortar presents enough resistance. Repeat watering 1, 2 and 7 days later.

### Further advice

- ▶ The excess of mixing water is damaging to the physical characteristics of the render;
- ▶ Always use the minimum quantity of water to allow good workability;
- ▶ The mixing water should be free of impurities (clay, organic matter) and preferably be drinkable;

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Lime factory



Bag filters



Fired stone

- ▶ Once the trace to use for a mortar is determined, keep the dosing constant as well as the mixing time.

## SOIL TREATMENT

The addition of **Secil NATURAL LIME NHL 5** to clayey and humid soils allows their stabilization and improves their resistance.

**Secil NATURAL LIME NHL 5** can also be added in clayey and humid soils  $\text{Ca}(\text{OH})_2$  to those using hydraulic lime HL 5.

For more information on the procedures, please consult documents and videos available in [www.secilargamassa.pt](http://www.secilargamassa.pt) and contact our sales services.

- ▶ Paper bags of 25kg in plasticized pallets;
- ▶ Bulk for use in silo system.

## Validity

12 months provided the conditions of the original packaging remain unaltered and in good storage conditions, protected from extreme temperature and humidity.

*information contained in the present data sheet may be altered without prior notice. In case of doubt and if you need any further advice please contact our Technical Services.*

*Review of January 2014  
TC.E.077.4*

**(DOES NOT REPLACE CONSULTATION OF THE PRODUCT SAFETY DATA SHEET)**

- ▶ Irritating to skin;
- ▶ May cause serious injuries in the eyes;
- ▶ May cause irritation to respiratory system;
- ▶ Keep out of children's reach; Wear protective gloves and clothing/ eyes protection/ facial protection;
- ▶ Avoid breathing dust/ vapors.

## 6. PACKAGING AND VALIDITY

### Packaging



## 7. HEALTH AND SAFETY

*Being in conditions of applying our products out of our reach we do not take responsibility for its misuse. It is the customer's duty to verify the suitability of the product for the intended purpose. In any case, our responsibility is limited to the value of the goods supplied by us. The*



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### Secil Natural Lime NHL 5

EN 459-1:2011

Certificate: 1328-CPR-0215

Natural Hydraulic Lime – NHL 5

Declaration of performance TC.E.0914

## Secil Argamassas

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## 8. RECOMMENDED MIXING RATIOS

RECOMMENDED MIXING RATIO	BINDER AND AGGREGATE				Water % total weight	COMPRESSIVE RESISTANCE (MPa)			ELASTICITY MODULUS (MPa) 28 days
	NHL 5	Fine silica sand (< 0,6 mm)	Medium silica sand (< 1,2 mm)	River sand (< 4,0 mm)		7 days	28 days	90 days	
Masonry mortar (Binder:Aggregate) = (1:2)	1	-	1	1	13,5	0,8	2,8	3,7	6900
Coating mortar (Binder:Aggregate) = (1:3)	1	-	1,5	1,5	14,2	0,4	1,0	1,7	3300
Coating mortar (Binder:Aggregate) = (1:4)	1	-	2	2	14,7	0,2	0,6	0,8	2170
Flooring mortar (Binder:Aggregate) = (1:3)	1	-	-	3	12,0	0,6	2,5	3,6	4500