

# NATURAL LIME NHL 5

NHL 5 – NATURAL HYDRAULIC LIME

## 1. DESCRIPTION

**Secil NATURAL LIME NHL 5** is a natural hydraulic lime, hydraulic binder consisting of silicates and calcium aluminates and calcium hydroxide. It is obtained by cooking marly limestone followed by milling. **Secil NATURAL LIME NHL 5** is rated as NHL 5 according to NP EN 459-1.

**Secil NATURAL LIME NHL 5** is a unique binder because in addition to hydraulic setting it also has aerial setting, obtained by carbonation with atmospheric CO<sub>2</sub>.

## 2. FIELD OF USE

In the manufacture of mortars as a single binder or mixed with other hydraulic or aerial binders, giving them workability and flexibility, significantly reducing retraction of hydraulic mortars (e.g. masonry mortars, plaster mortar and floor mortar).

In the manufacture of rehabilitation mortars, as sole binder, in the execution of exterior and interior renders on old supports. In different uses of civil engineering, such as soil treatment.

## 3. PRODUCT CHARACTERISTICS

Chemical Characteristics	Value	Standard
Available lime Ca(OH) <sub>2</sub>	≥ 15,0 %	EN 459-1
Sulphates SO <sub>3</sub>	≤ 2,0 %	EN 459-1
Physical Characteristics	Value	Standard
Colour	Beige	-
Free water	≤ 2,0 %	EN 459-1
Loose bulk 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
Soundness	≤ 2,0 mm	EN 459-1
Penetration	> 10 mm and < 50 mm	EN 459-1
Air content	≤ 5,0 %	EN 459-1
Setting time: Beginning End	> 1 h ≤ 15 h	EN 459-1
Mechanical Characteristics	Value	Standard
Compressive strength (28 days)	≥ 5,0 and ≤ 15,0 MPa	EN 459-1

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## 4. APPLICATION

### a) Manufacture of mortars

The dosage of *Secil NATURAL LIME NHL 5* in a mortar shall be suitable for the purpose for which it is intended. See examples in number 5.

Pre-mix *Secil NATURAL LIME NHL 5* with the aggregate and after add water in the proper quantity to obtain good workability.

### b) Restrictions

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

Do not use softened mortars or which have started their setting process.

Avoid fast drying of mortars by watering the support 1 to 2 hours before application and by watering again as soon as the mortar is sufficiently resistant. Repeat the watering process 1, 2 and 7 days later.

### c) Soil Treatment

The addition of *Secil NATURAL LIME NHL 5* to clay and moist soils allows their stabilization, improving their resistance.

*Secil NATURAL LIME NHL 5* may also be added to clay and moist soils requiring Ca (OH)<sub>2</sub> to those using HL 5 hydraulic lime.

For further information on procedures, consult documents and videos available at [www.secilargamassa.pt](http://www.secilargamassa.pt), or contact our commercial services.

## 5. RECOMMENDED RATIOS

MORTAR RECOMMENDED RATIOS	RAW MATERIALS (VOLUME)				WATER  % weight of the total	COMPRESSIVE STRENGTH (MPa)			MODULUS OF ELASTICITY (MPa) 28 days
	NHL 5	Fine silica (< 0,6 mm)	Fine silica (< 1,2 mm)	Silica sand (< 4,0 mm)		7 day s	28 day s	90 day s	
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
Floor mortar (binder: aggregate) = (1:3)	1	-	-	3	12,0	0,6	2,5	3,6	4500

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## 6. PACKAGING AND SHELF LIFE

### Packaging

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


### Shelf Life

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

## 7. HEALTH AND SAFETY

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

- Irritating to skin;
- Causes serious eye damage;
- May irritate the respiratory system;
- Keep out of children's reach;
- Use protective gloves / protective clothing / eye protection / face protection;
- Avoid breathing dust/ vapours.

	<b>SECIL NATURAL LIME NHL 5</b> EN 459-1:2010 Certification: 1328-CPR-0215 Natural Hydraulic Lime – NHL 5  Declaration of performance DoP.14003
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*Being the 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 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.*

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