

**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 burning marl 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
Lime available Ca(OH) <sub>2</sub>	≥ 15,0 %	EN 459-1
Sulphate	≤ 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

Expandability	≤ 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
<b>Mechanical Characteristics</b>	<b>Value</b>	<b>Standard</b>
Compressive strength (28 days)	≥ 5,0 and ≤ 15,0 MPa	EN 459-1

**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 subsequently add water in the appropriate quantity in order 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 strong 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 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
Floor mortar (binder:aggregate) = (1:3)	1	-	-	3	12,0	0,6	2,5	3,6	4500

**6. PACKAGING AND VALIDITY****Packaging**

Paper bags of 25 kg 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.

**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.

# SECIL NATURAL LIME NHL 5

NHL 5 – NATURAL HYDRAULIC LIME

	<p><b>SECIL NATURAL LIME NHL 5</b></p> <p>EN 459-1:2011                  Certification: 1328-CPR-0215                  Natural Hydraulic Lime – NHL 5</p> <p>Declaration of performance DOP. 14003</p>
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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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