



## Technical Data Sheet for TIGRE NHL 5 (Natural Hydraulic Lime)

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### TIGRE Natural Hydraulic Lime

**Packaging:** Pallet of 64 bags @ 18.5 Kg. each, approximately one metric ton. Bulk packaging available.

**Manufacture:** TIGRE Natural Hydraulic Lime is produced in an entirely traditional manner from the calcining of clayey limestones [marls], at temperatures between 900°C and 1200°C without chemical additives. Afterwards, a slow and careful process of hydration is carried out to obtain an exceptionally consistent lime.

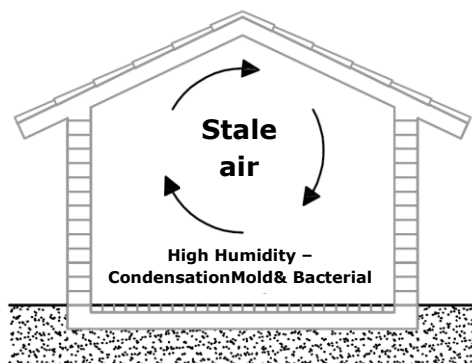
**Properties:** Remarkable plasticity coupled with enhanced adhesion allows for a comfortable and effective working of mortars with a reduced tendency to fissure. TIGRE NHL demonstrates high water vapor permeability while maintaining an impermeability to liquid water that allow surfaces plastered with TIGRE mortars to “breathe”, excellent hydraulic properties that favor working in environments with high humidity.

**Applications:** Especially beneficial for RESTORATION and BIOCONSTRUCTION.

### The Natural Hydraulic Lime that Breathes!

#### Conventional Cement

based construction

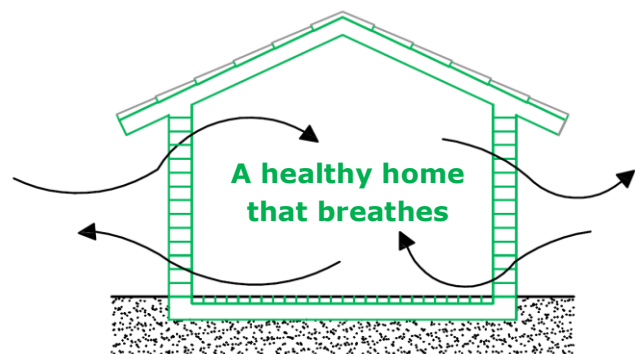


In conventional cement-based construction, the walls act as a barrier to the transpiration of water vapor, constraining the building from “breathing” thus resulting in an uncomfortable and unhealthy indoor environment.

Furthermore, the generation of this level of indoor humidity is not easily eliminated, possibly resulting in levels of condensation that can seriously damage the useful life of the building itself.

#### TIGRE NHL 5

based construction



By contrast the inherent water vapor permeability of TIGRE Natural Hydraulic Lime NHL-5 facilitates the “breathability” of the building and favors an interior environment both comfortable and healthy that improves quality of life.

Additionally, the low conductivity of TIGRE Natural Hydraulic Lime, generates energy savings in heating and cooling of up to 30% over the use of conventional cements.



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Technical Data Sheet in conformity to  
EN 459-1:2010  
"BUILDING LIME"



1035

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**NATURAL HYDRAULIC LIME NHL-5 Breathability**

| <b>Mechanical Resistance</b>                                  | <b>Value</b> |
|---|--------------|
| Compressive strength @ 7 days [Mpa] ( $\geq 2$ )              | 3.6 MPa      |
| Compressive strength @ 28 days [Mpa] ( $\geq 5$ y $\leq 15$ ) | 6.2 MPa      |

| <b>Chemical Characteristics</b>                       | <b>Value</b> |
|---|--------------|
| Sulfate ( $\text{SO}_3$ ) ( $\leq 2$ %)               | 1.74 %       |
| Free Lime ( $\text{Ca}(\text{OH})_2$ ) ( $\geq 15$ %) | 19.38 %      |

| <b>Setting Times</b>             | <b>Value</b> |
|----------------------------------|--------------|
| Initial setting ( $\geq 1$ hour) | 135 min      |
| Final setting ( $\leq 15$ hours) | 195 min      |

| <b>Physical Characteristics</b>         | <b>Value</b> |
|---|--------------|
| Fineness 90 $\mu$ % ( $\leq 15$ %)      | 11.56 %      |
| Fineness 200 $\mu$ % ( $\leq 2$ %)      | 1.78 %       |
| Free water ( $\leq 2$ %)                | 1.28 %       |
| Expansion ( $\leq 2$ mm)                | 0.5 mm       |
| Penetration ( $\geq 10$ y $\leq 50$ mm) | 34 mm        |
| Air Level ( $\leq 5$ %)                 | 2.7 %        |



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### Applications:

#### New Build – Restoration–Natural Building

- ✓ Mortar for Terracotta masonry.
- ✓ Highly recommended for setting natural stones.
- ✓ Mortar for setting rustic ceramic and stone floor tiles in interior or exterior.
- ✓ Mortar for setting traditional clay roof tiles.
- ✓ Highly recommended as exterior stucco or interior plaster coatings.
- ✓ Wine cellars and other buildings with anticipated levels of high humidity.
- ✓ Repair of historical heritage.
- ✓ Restoration of estates, churches, country houses, ramparts, castles, etc.
- ✓ Repointing of brick and stone.
- ✓ Tyrolean plaster (without sand, one part lime to 3 parts water by volume).

### Additional Information for Common Applications

**Natural, Breathable, Integral Colored Plasters and Coatings:** Mixing with naturally colored sands achieves architecturally appreciated aesthetic finishes while preserving all of the beneficial properties of TIGRE Natural Hydraulic Lime.

**Recovery of Historical Heritage:** Lime is essential for the preservation of historical heritage. Most construction prior to the 20th century utilized lime mortar. The current destructive practice of using conventional cements for restoration can cause irreversible damage to buildings due to its impermeability and chemical composition producing adverse reactions with unpredictable consequences.

### Uses

**Mixing:** Mix one part lime to 3 parts sand by volume. Continue mixing by pouring water into a container and adding the dry mixture of lime and sand gradually until a homogeneous mortar is obtained. The mixing can be done mechanically or manually. Do not retemper the mortar once it has begun to set.

**Application:** The supporting surface must be clean and stable before the application of the mortar. Perform a cleaning of surfaces that completely eliminates any residues that could damage the adhesion of the product. It is essential to always moisten the supporting surface before applying the mortar.

**Sand:** Sand should be washed and clean, preferably silica or crushed rock. The granulometry of the sand will depend on the type of application. It should not contain clay.

**We recommend purchasing all the sand at once for uniformity of color. It is important to mix sand and water in a consistent proportion, i.e. use the same marked reference container for all mixtures.**



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### Additional Comments

**Storage:** Store in a dry place safeguarded from humidity for up to one year.

**Disclosure:** The information provided in this technical data sheet is based on the data we had available as of the publication date and the result of our internal tests under certain climatic conditions.

It is the responsibility of the user to adopt the appropriate precautionary measures and assess in each case whether it is appropriate or not for the intended use, assuming all responsibility that may derive from the use of the product.

The information presented in this file should not be considered exhaustive. Request the safety data sheet if necessary.