



# BioMix 35™

## Natural Hydraulic Lime (NHL) Mortar

### DESCRIPTION:

**BioMix 35™** is a series of custom matched, prepackaged, natural hydraulic lime mortars for use in new construction and restoration. It is produced from **BioLime® Natural Hydraulic Lime** which has a CE Certification and is in full compliance with UNI EN 459 1:2010, obtaining a registration mark as **NHL 3.5 (Natural Hydraulic Lime 3.5)**. Because **BioMix 35™** is made with properly graded sands in accordance with ASTM C 144, it reduces the need for contractors and specifiers to identify properly graded sand and avoids the loss of performance and durability associated with non-conforming sand.

### WHY NATURAL HYDRAULIC LIME?

For architectural and historical applications, mechanical characteristics such as excellent porosity and low soluble salts ensure full compatibility with traditionally produced building materials (stone, solid brick, etc.). A high permeability to water vapor, ability to prevent bacteria and mold and optimal hygrothermal function ensures the achievement of high performance and durability, making natural hydraulic lime an ideal binder for quality restoration work and Green Building.

### PERFORMANCE

**BioMix 35™** has a nominal design compressive strength of 500-750 psi (3.5-5.0 MPa) at 28 days cure under standard conditions.



Vignola Castello, Italy, restored with BioLime® NHL 3.5

### APPLICATION – MASONRY REPOINTING

#### 1. Joint Preparation

- A. Remove old mortar to a depth of 2 to 2 ¼ times the width of the joint – typically ¼ to 1 inch.
- B. Remove additional mortar below this depth if loose or disintegrated.
- C. Avoid damage to masonry units through use of proper tools and use of experienced, skilled workmen.
- D. Joints must be clean and free of dust, oils, residues, bacteria, mildew, mold or other organic

matter, salt efflorescence, or loose material. Joints should be damp to reduce suction, but avoid ponding or complete saturation. Pre-dampen extremely porous substrates for up to several hours, if necessary, to avoid rapid drying.

## 2. Mortar Preparation

A. Use only **BioMix 35™** and water, unless otherwise instructed. Mix with clean water, free of oils, acids, alkali, salts, organic materials, or any other substance that may be deleterious to mortar or metal in the masonry assembly. Admixtures such as color pigments, air entraining agents, accelerators, retarders, water repellents, anti-freeze compounds and other admixtures should not be added to mortar unless specified and approved by Edison Coatings Inc.

B. Add approximately half the volume of mixing water required to a mechanical mortar mixer, and mix for 5 minutes. Add the remaining water, a little at a time, until the desired working consistency is reached. Total water may vary from batch to batch, depending on weather conditions. Use the minimum amount of water required to produce the desired workability, in order to minimize shrinkage and facilitate placement.

C. To enhance the plasticity characteristics of the product, let the freshly mixed material stand for approximately 10-15 minutes prior to application.

D. The material should be workable for up to 8 hours at normal conditions of 75 °F (24 °C).

## 3. Filling & Tooling Joints

A. Recommended maximum thickness per “lift” is not to exceed 7/8 inches (2 cm). Start by filling deeper sections, compacting each layer, packing it into the rear and corners of the joint.

Mechanical auger-type pointing guns can also be used without additions of special admixtures.

Filling should still be performed in lifts however.

B. As soon as the material reaches “thumbprint” hardness, apply the next layer. Several layers may be required.

C. Allow each layer time to harden before proceeding to the next. Most of the shrinkage in mortar occurs during this hardening stage, and proper timing will minimize overall shrinkage and cracking.

D. When the final lift is thumbprint hard, tool to specified profile. For localized repointing, match to adjacent, existing profile, or as instructed.

E. Proper tooling and timing is important for uniform color. If the mortar is tooled when too soft, colors may tend to dry lighter, and hairline cracks may occur. If tooled when too hard, dark streaks or “tool burns” may occur, and good bond with the masonry may not be achieved.

F. To avoid changing the appearance of the building, it may be necessary to slightly recess the mortar from the masonry surface, as flush filling of masonry joints in worn masonry may result in a visually wider joint than the original.

G. After tooling, new joints may be lightly brushed to provide a rougher, more weathered appearance. Use natural or nylon brushes, never metal brushes.

## 4. Curing

A. Once applied, the product should be protected up to 48 hours from rain, frost, and rapid drying due to direct sun or forced ventilation. Light periodic misting should be performed several times a day for the first 2-3 days.

## 5. Cleaning

A. Remove excess mortar and smears using a stiff natural bristle brush and water before it has

set.

B. Do not use chemical cleaning agents unless specifically instructed, carefully tested and controlled. Improper use of cleaning agents may result in chemical attack on mortar and/or masonry. Masonry should always be pre-soaked with water prior to use of chemical cleaning agents, and thoroughly flushed with clean water afterwards. Some acidic cleaning agents may require neutralization with an alkaline detergent solution, particularly if masonry coatings are to be installed subsequently. Carefully follow the manufacturer's instructions for dilution and use. Many cleaning products are hazardous materials and must be handled in accordance with the manufacturer's published safety guidelines.

C. Allow mortar to fully cure before cleaning masonry walls. Usually 90 days will be sufficient, depending on temperature. Longer cure time is required in colder weather. Only low pressures should be used to avoid damaging newly repointed joints.

## 6. Storage and Safety

A. Store in a dry location, off the floor or ground. Product is a lime based material and should be stored in the manner required to prevent deterioration and moisture infiltration.

B. For complete information regarding correct storage, use and disposal methods, please see **MSDS**. Lime is a naturally caustic (rapid absorption) material due to its high PH origin and creates an alkaline reaction when combined with water. Protect the eyes and skin from exposure. Keep out of reach of children. Dust may cause irritation to eyes, skin, nose, throat and upper respiratory tract. Avoid irritation by reducing exposure to dust. Use in a well-ventilated area or provide sufficient local ventilation. Do not ingest. If dusty, wear a NIOSH/MSHA- approved dust respirator. Wear eye protection. If eye contact occurs, flush thoroughly with water for 15 minutes. If irritation persists, call a physician.

### FOR COMMERCIAL AND INDUSTRIAL USE ONLY

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