MasterFill™ 222 (Albaria® Iniezione)

Puzolanic Lime Based Injection Mortar Designed For Historical Masonry Buildings

Material Description

MasterFill™ 222 is an injection mortar that is used in the crack repair and consolidation of the masonry elements that contains puzolanic lime and micronized carbonates.

Areas of Application

MasterFill™ 222 is an injection mortar that is used for repair purposes in brick, stone or tufa containing historical buildings especially in places where cracks have been formed and supporting capacity has been lost.

MasterFill™ 222 is used in;

- Consolidating themasonry walls under sulphate attacks,
- Consolidating the masonry domes and vaults,
- In the filling of small or large voids in the walls,
- Cracks repairs in masonry elements,
- Consolidating the masonry foundations.

Characteristics and Benefits

- Cement free
- Can be used in environments under sulphate attacks
- It doesn't react with original building materials neither physically, nor chemically
- The superior hydraulic nature of the binder enables the injection mortar to penetrate into the building deeply With the assistance of the medium elasticity modulus, it is ideal in the filling of small and large voids even in bearing problems due to the high moisture content of the original building material
- Does not affect the vapour and moisture permeability of the existing building
- It shows limited expansion that does not cause to any additional internal stresses in the masonry elements
- Does not bleed
- Easy to inject even under low pressures
- Water-born salts (alkalis, sulphates, chlorides or nitrates), are limited

Processing Method

(A) Preparation of Substrate

The surfaces should be free of frost, curing membranes, waterproofing treatments, oil stains, laitance, friable material and dust. The surfaces should be wetted before application. If there is a water leakage it must be drained or properly plugged.

Technical Properties

Product Chemistry	Includes Puzolanic Lime and Micronized Carbonates	
Color	Off white – Light brow	
Grain Size of Injection Mortar	0,1-30 µm D_{85}=15 µm	KR
Compressive Strength (20^{0}C) TS EN 196 7 days 28 days	 >7,0 N/mm^2 >13 N/mm^2	
Flow (DIN Cup, No.6) At the Beginning 20 Minutes Later	 <35 sn <45 sn	
Application Temperature	+5^{0}C +35^{0}C	
Pot Life (20^{0}C)	30 minutes	

Typical values are obtained from the test results of 4x4x16 mortar prism in 23°C and 50% relative humidity conditions. High temperatures shortens the curing and working time, lower temperatures extends the durations.

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Cracks with a width of 1- 5 mm

Depending on the crack width the holes should be drilled in both two sides of the crack line with an angle of 45º to the surface. The holes should be 5-10 cm away from the crack line and deep enough for passing across the crack plane and reach opposite side. Through the crack line, the holes should have a distance of 30-50 cm from each other. The holes have to be cleaned by air compressors to remove all dust and loose particles. Injection packers should be installed in to the holes, then screwed and fixed to the holes. All the cracks and packer sides should be sealed with **MasterCrete™ 285 Thix** by using a steel spatula or trowel to prevent the leakage of injection mortar from the crack openings. Allow 24 hour (at 20ºC) for curing the cap.

Cracks with a width of > 5 mm

Depending on the crack width and depth, the pneumatic hoses should be installed in to the crack opening with a distance of 75-100 cm from each other. All the cracks and hoses should be sealed with **MasterCrete™ 285 Thix** by using a steel spatula or trowel to prevent the leakage of injection mortar from the crack openings. Allow 24 hour (at 20ºC) for curing the cap.

(B) Mixing

Add enough water into a clean mixing bucket by using a proper water gauge. Add the powder into the bucket slowly and continously. Mix the fresh mortar with a proper electrical mixer (300-600 rpm) for 4minutes until having a homogenous consistency. Let the mortar have rest for 4 minutes and re-mix for 30 seconds.

Mixing Ratio

MasterFill™ 222	1 kg Powder	15 kg Bag
Water Quantity	0,29 liter	4,35 liter
Mixed Density	1,93 kg/liter	

(C) Processing

Tie the pneumatic pipe of the pump to the lowest hose/packer fixed to the cracked surface. Start pumping the mortar into the crack until it comes out from upper hose/packer. Remove the pipe from the current hose/packer and close/lock its opening by screwing or by steel wires. Follow the same instruction to the hose/packer fixed at the top of the surface. When the mortar leaks out from the upper hose/packer it is understood that the whole crack plane has been fully filled with **MasterFill™ 222** and finishes the application. At least 24 hours after the application all the hoses/packers could be cut or pull out and surface could be finished with proper mortar in **MasterCrete™** range.

Consumption

1.50 kg of powder to obtained 1 litre of mortar

Point to Consider

- During the application the substrate and environment temperature should be between 5ºC-35ºC.
- Injection works should be run by expert applicators.
- Mixing should be made with proper mixers and do not allow mixing by hand.
- Injection pressure is defined due to crack width, crack depth and material properties of the existing structure. It should be defined according to the project.

Cleaning of Tools

All the tools and equipments must be cleaned by water after the application. After **MasterFill™ 222** is hardened, it can only be removed from the surface mechanically.

Packaging

15 kg bag

Shelf Life

12 months after the production date under appropriate storing conditions.Opened packages have to be stored by tightly sealing the bag/cover and must be used in one week.

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Storage

Must be stored in unopened original packing, and in cool and dry environment protected from freezing. In short-term storing, maximum 3 palettes can be stowed on top of each other and delivery has to be according to first in first out system. In long-term storing, the palettes must not be stowed on top of each other.

Health and Safety

It is dangerous to approach the application sites. During the application, a protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixture should not come into contact with skin and eyes; in case of a contact, the affected area should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is only responsible for the quality of the product **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

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