

MasterInject 222

High resistance NHL 5 lime-based grout (M10), cement-free, light hazelnut color, for consolidating injections of masonry without the formation of efflorescence.

MATERIAL DESCRIPTION

MasterInject 222 is a premixed, cement-free, pozzolanic lime grout with a very fine grain size (less than 12 µm), with high fluidity and excellent maintenance of workability. It is also expansive in the plastic phase, to ensure that even the smallest gaps are filled. It guarantees a compressive strength > 10 MPa and is therefore classifiable as an M10 type masonry mortar according to the European standard UNI EN 998/2.

FIELDS OF APPLICATION

Consolidation injections (including reinforced) on:

- wall faces;
- vaults and arches;
- foundations.

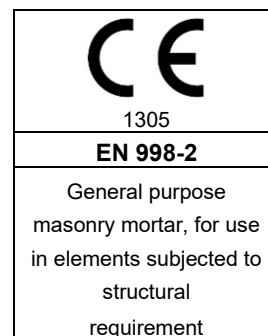
FEATURES AND BENEFITS

The peculiar characteristics of MasterInject 222 are:

- absence of cement: the absolute absence of cement makes the product fully compatible with the masonry that you want to consolidate;
- very low content of water-soluble salts: the skilful calibration of aerial limes and pozzolanic reactives are the basis of the excellent durability characteristics of the material. In fact, during the hydration reaction all the lime present is rapidly and completely consumed, thus avoiding the migration of free lime, which could cause unpleasant phenomena of superficial efflorescence on the walls. This characteristic is evident through the evaluation of the specific electrical conductivity and the content of ions. Furthermore, the material does not bring salts containing sulphates, chlorides, nitrates, potassium and sodium and does not contribute to the phenomena of chemical-physical degradation linked to the formation and crystallization of the salts themselves;
- high fineness, fluidity and water retention: these characteristics allow MasterInject 222 to be easily injected even into the smallest foramina and not to easily release the water from the mixture into the masonry thus avoiding the risk of inhibiting the hydration of the grout;
- excellent maintenance of workability: this property allows the company suitable processing times;
- very low hydration temperature: this is a fundamental requirement to avoid the onset of cracks related to thermal coercion states inside the masonry;

- mechanical performance: despite being a very fluid lime grout, the mechanical performance is completely suitable for consolidating masonry;
- high permeability to water vapor: important to allow normal transpiration of the masonry;
- resistance to sulphates: the material is not susceptible to degenerative chemical reactions with any sulphates present in the masonry (in bricks, bedding mortars or in capillary rising waters);
- no reaction to fire: the material is not combustible and does not produce fumes (Euroclass A1);
- material with CE mark: the product, the production process and the quality control comply with the requirements indicated by UNI EN 998/2.

In compliance with the European Regulation (EU No 305/2011 and EU No. 574/2014) the product is provided with the CE marking according to UNI EN 998-1 and 998-2 and the relative DoP (Declaration of Performance).



CONSUMPTION

1.35 kg per liter of fluid grout.

PACKAGING

MasterInject 222 is available in 20 kg bags.

STORAGE

Store the product in a dry and sheltered place at a temperature anywhere between 5 and +35°C.

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Technical Information		
Chloride content EN 1015-17		< 0.05%
Mixing ratio		7,00 – 7,6 l for bag (35-38%)
Consistency of mix		Pourable and injectable
Temperature of application		From 5°C to 35°C
Packaging		20 kg bag
Consumption		1.35 kg per liter of fluid grout
Workability time (at 20°C)		60 minutes
Essential characteristic in accordance to UNI EN 998/2 with a dosage of water of 36.5%		Performances
Vapor diffusion coefficient	UNI EN 1015/19	$\mu < 35$
Capillary absorption and water penetration of the hardened mortar	UNI EN 1015-18	0,1 Kg·m ⁻² ·min ^{-0,5}
Fire reaction	EN 13501	Euroclass A1
Compressive strength	UNI EN 1015/110	>10 MPa Class M10
Thermal conductivity	UNI EN 1745	0.83 W/mK
Adhesion	UNI EN 1015/1	> 1,0 MPa, Failure mode: A
Resistance to extraction of steel bars and the MasterBrace BAR line	RILEM-CEB-FIP RC6-78	> 6 MPa
Modulus of elasticity	UNI EN 13412	6.000 MPa
Shearing test	UNI EN 1015/3	$\tau_0 > 0,15$ MPa
Water-soluble salts content (hardened mortar)	UNI 11087	Specific electrical conductivity < 814 μ S·cm ⁻¹ SO ₄ ⁼ < 0,1 % Na ⁺ < 0,1 % K ⁺ < 0,1 %
Bleeding, NorMaL	M33-87	Absent
Fluidity, Flow Cone (12,7mm)	CRC-C 611-80 e ASTM C 939	Start < 30 s 30 min < 30 s 60 min < 30 s
Maximum hydration temperature, Adiabatic Chamber	--	< 30°C
Resistance to sulphates		No loss of resistance for specimens immersed for 90 days in solution Na ₂ SO ₄ al 5%

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APPLICATION SHEET

PREPARING THE SUBSTRATE

First of all, it is necessary to seal all possible cracks and disconnections that could become exit routes for the injection grout.

The injection holes, with a diameter of 20 ÷ 40 mm and a depth equal to 2/3 of the thickness of the masonry, are then carried out on the wall face by means of a rotary drill, creating an equilateral triangle mesh. The center distance between hole and hole depends on the texture and consistency of the wall mass: this distance will be established on site through preliminary injection tests. When the consolidation of the masonry face is achieved by injecting the mesh of holes from both faces, it must be quincunx.



In correspondence of each hole, an injection tube with a diameter of 15 ÷ 20 mm is inserted to a depth of about 10 cm. The injector is fixed and seals perfectly.

Before starting the injection, when possible, it is recommended to wash the wall mass to be injected with low pressure water (maximum 1 atm to the nozzle) introduced from the highest holes. Washing allows optimal penetration of the injection slurry. This last operation is not necessary if you are using the version of the product containing the water retainer.



APPLICATION TEMPERATURE

MasterInject 222 can be used when the ambient temperature is between + 5°C and + 35°C

PREPARING THE MIXTURE

The mixing procedure must be carried out with a mixer and for small quantities with a "whip" drill. Hand mixing is not recommended. The recommended amount of water is 35-38% of the weight of the dry mortar (7,00 – 7,6 liters per bag), depending on the fluidity required in relation to the specific wall facing.



To obtain a perfect mixing it is advisable to initially add only part of the mixing water to the powder product and to homogenize at low speed for a few minutes, then add the remaining part of water necessary to obtain the desired fluidity, stirring for a few more minute until a fluid, homogeneous and lump-free mixture is obtained.

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APPLICATION

Inject the low pressure grout (maximum 1 atm to the nozzle), starting from the lower row of holes until it comes out of the upper hole. When the grout comes out of the upper hole, the lower injector is closed and all the holes in the first row are injected.

Then proceed with the same system until the grout comes out from the top hole.



SAFETY INSTRUCTION

For information on the correct and safe use, transport, storage and disposal of the product, consult the most recent Safety Data Sheet.

OTHER SERVICES

For price analysis, specifications, supplementary brochures, references, reports and technical assistance, visit the website www.master-builders-solutions.com/it-it or contact infomac@mbcc-group.com.

Scan the QR code to visit the product page and download the latest version of this datasheet.



Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.

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This version supersedes all the previous ones.