MasterEmaco S 280 TIX

Thixotropic mortar for masonry based on NHL 3.5 lime, with high resistance (M15) and breathability for reinforcement interventions on existing masonry.

MATERIAL DESCRIPTION

MasterEmaco S 280 TIX is a masonry mortar composed of natural hydraulic lime NHL 3.5 and prepared with natural siliceous aggregates with a maximum diameter of 2 mm. Classified as M15 type masonry mortar, it guarantees a compressive strength> 15 MPa (UNI EN 998 - 1/2).

MasterEmaco S 280 TIX can be applied both by spraying with continuous cycle plastering machines, and by hand, also overhead or by casting.

FIELDS OF APPLICATION

MasterEmaco S 280 TIX, thanks to its high mechanical resistance, is ideal for the consolidation and restoration of masonry structures in many situations such as:

- FRCM (Fiber Reinforced Cementitious Matrix) systems coupled with steel (MasterProtect 100 NET), glass (MasterBrace NET 240/100 FG) and / or carbon (MasterBrace NET 200/100 CFS) meshes;
- reinforced plates;
- reinforcement of vaults, also reinforced with carbon fiber or aramid bars from the MasterBrace BAR range;
- bedding for foundations of curtain walls or for works that generally require high-strength masonry mortars;
- lime-based concretes. In the case of thicknesses greater than 5 cm, add aggregates of suitable granulometry to MasterEmaco S 280 TIX, thus obtaining high-strength grout or lime concrete;
- small thanks of times;
- reinforced joints (restyling of reinforced mortar joints with carbon fiber bars).

FEATURES AND BENEFITS

The peculiar characteristics of MasterEmaco S 280 TIX are:

- based on NHL 3.5 natural hydraulic lime;
- high mechanical performance: high mechanical strengths are exceptional requirements for a lime product, which thus combines historical and technological requirements with structural and executive ones;
- high adhesion to masonry: both by shear (important for bedding) and by direct traction (important for reinforced slabs and reinforced vaults);
- the innovative formulation creates a sort of "reservoir of internal water "with a slow release that allows a better ripening by drastically reducing the tendency to cracking and allowing the application also on substrates particularly absorbents
- high adhesion even in overhead applications thus minimizing waste (ZERO GRAVITY);
- versatility and simplicity of application: for consolidation interventions in thicknesses less than 5 cm, it is used with a trowel or spray. In the case of interventions with a thickness of> 5 cm, it can also be used for casting, adding aggregates to the mortar in order to obtain high-strength grout or lime concrete;
- high permeability to water vapor: important to allow normal transpiration of the masonry;
- low capillary absorption: essential so that water from the outside does not enter the masonry;
- no reaction to fire: the material is not combustible and does not produce fumes (Euroclass A1).

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).

CE 1305	CE 1305
EN 998-1	**EN 998-2**
General purpose rendering/plastering mortar	General purpose masonry mortar, for use in elements subjected to structural requirement

CONSUMPTION

- Mortar: 17 kg / m² per cm of thickness.
- Concrete: approx. 13 kg / m² per cm of thickness (adding 35% gravel or crushed stone).

PACKAGING

MasterEmaco S 280 TIX is available in 25 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		
Granulometry		Max 2,0 mm
Chloride content EN 1015-17		<0.05%
Colour of mix		Light hazelnut
Mixing ratio		4.5-5.0 l for bag (18-20%)
Consistency of mix		Thixotropic
Temperature of application		From 5°C to 35°C
Packaging		25 kg bag.
Consumption		17 kg/m2 for 1 cm
Workability time (at 20°C)		60 minutes
Minimun thickness		5 mm
Maximum thickness in single layer		15 mm
Maximum thickness		50 mm
Essential characteristic in accordance to UNI EN 998-1/2 with a dosage of water of 19%		**Performances**
Vapor diffusion coefficient	UNI EN 1015/19	$\mu < 35$
Capillary absorption and water penetration of the hardened mortar	UNI EN 1015-18	0,2 $Kg \cdot m^{-2} \cdot min^{-0,5}$
Fire reaction	EN 13501	Euroclass A1
Compressive strength	UNI EN 1015/11	>15 MPa Class M15
Thermal conductivity	UNI EN 1745	0.93 W/mK
Flexural strength	UNI EN 1015/11	4.0 MPa
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	16.000 MPa

By adding a gravel Dmax 20 mm to MasterEmaco S 280 TIX, a lime concrete with consistency S3, UNI EN 206/1, is obtained, characterized by compressive strength> 15 MPa.

APPLICATION SHEET

PREPARING THE SUBSTRATE

The degraded plaster must be removed by demolition with electric or compressed air hammers or by simple chiselling. Furthermore, any residual efflorescence and any other substance that could compromise good adhesion to the substrate must be eliminated. Before applying the mortar, the substrate must be cleaned and saturated with low pressure water. If necessary, repeat this last operation several times. Saturation is necessary to prevent the substrate from removing water from the mortar; an inaccurate saturation could cause loss of adhesion and cracking of the filler mortar. If the substrate cannot be saturated, it is still advisable to carry out a minimum wetting to allow correct adhesion of the mortar.

APPLICATION TEMPERATURE

MasterEmaco S 280 TIX can be applied when the ambient temperature is between +5°C and +35°C. When the temperature is between 5 ÷ 10°C mechanical resistances develop more slowly. We therefore recommend storing the bags in a heated environment and applying the mortar in the mid-hours of the morning.

PLACING ADDITIONAL STRUCTURAL REINFORCEMENTS

In the case of reinforcement interventions using the reinforced slab or reinforced vault technique, the reinforcement mesh must have a concrete cover of at least 2 cm and must be detached from the support by at least 1 cm using spacers. The minimum thickness of

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intervention in the presence of reinforcing mesh cannot therefore be less than 4 cm.

PREPARING THE MIXTURE

In the case of spray or trowel application, MasterEmaco S 280 TIX must be mixed with clean water, free from salts or organic particles at a rate of 4.5 ÷ 5 liters per bag (equal to 18 ÷ 20% of the total weight).
In the case of application by casting, typical for applications with thicknesses greater than 5 cm, it is necessary to prepare fluid grouts by adding gravel or small stone (5-20 mm) to the mortar in a quantity equal to 35% of the weight of the dry mortar and the water in the ratio of about 28% to achieve a fluid consistency (S3-S4).
The mixing must be carried out in a glass concrete mixer or in the plaster sprayer mixer and continue until a plastic, homogeneous and lump-free mixture is obtained. Hand mixing is not recommended

APPLICATION

The application of MasterEmaco S 280 TIX can be done with a trowel or spray with a plastering machine even in a continuous cycle (with post-mixer), or by pouring in the case of grouts (see what is indicated in the previous paragraph). In the case of application by hand, it is recommended to apply a thin layer of 2 ÷ 3 mm of rough coat with a trowel, made with the same material, with a semi-liquid consistency, so as to uniform the absorption of the masonry and improve its adhesion.
The mortar will then be applied in successive layers with a thickness of 1 - 1.5 cm taking care to apply the next layer when the previous one is not completely hardened.
If the application substrate is very absorbent, as occurs for example in the presence of tufa stone, it is recommended to apply the rough coat with MasterEmaco S 280 TIX, in order to limit the absorption of the bottom of the water. mortar mix.
Once MasterEmaco S 280 TIX has been applied with a trowel, the mortar must be smoothed in order to obtain the flatness of the surfaces.
When the substrate is made up of heterogeneous materials (brick, stone, tuff, etc.), characterized by different thermal behaviors, it is recommended to insert an alkali-resistant fiberglass mesh, in order to counteract the risk of cracking. This precaution is also valid in correspondence with the edges of openings (doors, windows, etc.) where concentrations of tensions are generated which can cause cracking phenomena.

TROWELLING

The trowelling of MasterEmaco S 280 TIX must be carried out using a sponge trowel, after a suitable time -from application depending on the climatic conditions.
The time interval between application and finishing with a trowel is established according to the first stiffening of the mortar, which is determined when, by placing a hand on the surface, the fingers do not sink but leave a light imprint on the plaster. Correct trowelling will be essential to effectively counteract the formation of micro-cracks resulting from plastic shrinkage. To improve curing, it is recommended to lay a polyethylene sheet on top of MasterEmaco S 280 TIX, if it is possible as in the case of screeds and vaults, for a duration of about 1 day from application, in order to maintain high humidity and contain plastic shrinkage.

FINISHING

After applying MasterEmaco S 280 TIX it is recommended to make a millimeter smoothing with MasterEmaco N 215 FC, in order to create the optimal base for both thick finishes and paints. The most appropriate finishes will be those that do not prevent the transpiration of the wall and of the materials previously applied

WARNING

The combination of lime and pozzolanic reactive initially leads, if the mixture takes place in an environment with poor ventilation or in the presence of large quantities of humidity, to assume a color tending to dark green. The coloring is the result of the chemical reaction of the two compounds combined together which leads to the formation of mainly hydrated calcium silicate (CSH) and hydrated gehlenite (C2ASH8). After a few days and in contact with air, this color will return to its original light color.

SAFETY INSTRUCTION

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

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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.

Master Builders Solutions Italia Spa
Via Vicinale delle Corti, 21 – 31100 Treviso – Italia
T +39 0422 429200 F +39 0422 421802
www.master-builders-solutions.com/it-it
e-mail: infomac@mbcc-group.com