FORTE MEC

Structural plaster with natural hydraulic lime NHL 5 for machine application

DESCRIPTION

Structural grout made with the purest natural hydraulic lime and mineral dolomitic aggregates with a constant grading curve of between 0 and 2 mm. The combination of raw materials of the utmost quality allows for the creation of a product that combines excellent durability and resistance with the natural characteristics of breathability and healthiness typical of natural hydraulic lime. The chemical and physical characteristics of lime guarantee excellent adhesion to surfaces, preventing the formation of mould and significantly contributing to regulating humidity in walls and interiors and providing benefits in terms of indoor comfort.
The product is optimised for machine application, facilitating application and substantially reducing the formation of cracks. It is resistant to salts, does not block vapour, does not contain solvents, and guarantees full compatibility and chemical inertia on surfaces as well as affinity with both modern and period masonry.
FORTE MEC complies with the “Guidelines for the identification, qualification and acceptance control of preformed mesh systems in fibre-reinforced polymer matrix composites to be used for the structural consolidation of existing buildings with the CRM (Composite Reinforced Mortar) technique” (L.G. CRM – CSLLPP-STC, 2019).
The product complies with UNI EN 998-2 regarding “Specification for mortar for masonry– General purpose masonry mortar (G)" and is subject to CE marking in relation to current regulations.
The product is available in three versions with compressive strength class M5-M10-M15 in accordance with UNI EN 998-2.
The product is supplied in 25-kg bags or in gravity or pressurised silos.

INTENDED USES

MINIERA SAN ROMEDIO S.r.l.
Località Alla Miniera, 1 - Mollaro, 38012 Predaia (TN)
+39 0463 662100 - info@tassullo.it

FORTE MEC is particularly suited for use as a structural mortar in the creation of CRM systems for the consolidation of structural elements in brick, natural stone, soft stone or mixed masonry such as walls or vaulted systems.

FORTE MEC efficiently combines with the components of the CRM systems from the TASSULLO ARMIS line, compliant with the "Guidelines for the identification, qualification and acceptance control of preformed mesh systems in fibre-reinforced polymer matrix composites to be used for the structural consolidation of existing buildings with the CRM (Composite Reinforced Mortar) technique" (L.G. CRM – CSLLPP-STC, 2019).

FORTE MEC is a product formulated to obtain the best balance of workability and compatibility with existing masonry and is particularly suitable for prestigious restoration works requiring compatibility with original materials, as well as in all cases in which excellent breathability and healthy environments are required.

APPLICATION

PREPARATION OF SURFACE

Dirty or inconsistent surfaces

Prepare the surface for application by removing dust, salt efflorescence, inconsistent sections, release agents, salts, mould, soot, organic matter, etc. with a brush, pressure washer or sandblaster.

Highly absorbent surfaces

In the event of surfaces characterised by high water absorption, it is recommended to adopt all precautions in order to avoid the rapid drying of the mortar. It is therefore recommended to dampen the surface before applying the product. If the surface has been previously dampened, ensure that the support in general is damp but that the external surface is dry before applying the mortar.

PREPARATION OF MIXTURE

Mix with clean water only to a ratio of approx. 4.25 – 4.75 l/bag (0.17 l/kg), without adding any other binders or aggregates. Mix by hand, with a concrete mixer, with a screw mixer or with a plastering machine. Avoid mixing for more than 3 minutes.

HOW TO APPLY

The product is to be spray applied with a plastering machine that automatically doses the correct amount of water, or by hand, in accordance with the indicated times and methods of mixing. When used as a structural mortar in CRM systems, proceed with application as follows:

1) Demolition of any existing plaster, exposing the base masonry and preparation of the support surface as indicated above.
2) Application of an initial layer of FORTE MEC up to half the thickness of the overall reinforcement.
3) Positioning of the fabric onto the fresh mortar, embedding it into the matrix by applying slight pressure.
4) After sufficient time has passed for the bonding of the first layer, apply the second layer of FORTE MEC to the overall thickness of the reinforcement.

Combine these instructions with those provided in the technical information for other components of the system and comply with project instructions.

WARNINGS

Wet surfaces

Do not apply to surfaces impregnated with water, or where the material may come into contact with running or pooled water within the first week of application. Do not apply to mortars or plasters that have not been sufficiently cured.

Protection from frost

Do not apply at temperatures below 5°C. In cold periods, it is recommended to apply the mortar during the warmest part of the day and provide for suitable frost protection for the mortar. The use of antifreeze additives is not recommended, as these may compromise the workability of the mortar.

High temperatures

In the presence of temperatures of over 35°C, adopt all precautions in order to avoid the product from drying too rapidly. Excessive ventilation may cause the surfaces to dry rapidly.

MINIERA SAN ROMEDIO S.r.l.
Località Alla Miniera, 1 - Mollaro, 38012 Predaia (TN)
+39 0463 662100 - info@tassullo.it

Thickness of application

For thicknesses of more than 3 cm, above all in the presence of changes in section or unevenness of the surface, the use of AR fibreglass plaster, stainless steel or galvanised steel mesh is recommended, and plaster should be applied in successive coats, allowing each coat to harden before applying the next.

Successive treatments

Wait for 24/48 hours after applying the product for any other successive operation.

Additives

The product is intended for professional use. Adding foreign materials to the mixture may compromise the performance of the product.

Storage

Store for a maximum of 12 months in the original sealed package, in an enclosed, dry place.

TECHNICAL DATA

GENERAL FEATURES

Binder	Natural Lime Based	
Maximum aggregate size	2 mm	EN 1015-1
Mixing water	approx. 0.170 l/kg	
Storage time	12 months	

DATA REGARDING PRODUCT APPLICATION (20°C, 50% R.H.)

Mixture consistency	thixotropic	
Volume of mixture	2050 - 2090 kg/m^3	EN 1015-6
Workability time	> 300 min	EN 1015-9
Minimum applicable thickness (per coat)	15 - 20 mm	
Maximum applicable thickness	40 mm	
Application in more than one coat	Intended by the CRM application cycle	
Chloride content	< 0.05 %	EN 1015-17
Consistency of mortar when fresh	180 - 185 mm	EN 1015-3
Porosity of fresh mortar	8 - 10 %	EN 1015-7

MINIERA SAN ROMEDIO S.r.l.
Località Alla Miniera, 1 - Mollaro, 38012 Predaia (TN)
+39 0463 662100 - info@tassullo.it

Yield	18 kg/m^2 x cm

PERFORMANCE OF APPLIED PRODUCT (WITH THE INDICATED MIXING WATER)

Mass (of hardened product)	1750 - 1850 kg/m^3	EN 1015-10
Resistance class	M5, M10, M15	EN 998-2
Resistant to compression after 28 days (characteristic value)	M5: 10 N/mm^2 M10: 13 N/mm^2 M15: 19 N/mm^2	EN 1015-11
Elastic modulus	M5: 9133 MPa M10: 10801 MPa M15: 12190 MPa	EN 13412
Water absorption due to capillary action	W < 0.5 kg/(m^{2}xmin$^{0.5}$)	UNI EN 1015-18
Water vapour permeability coefficient	μ 15/35 (tabulated value)	EN 1015-19
Thermal conductivity ($\lambda_{10,dry}$)	1.11 W/(m x K) (tabulated value)	EN 1745
Reaction to fire	A1	EN 13501-1

USE AND FINISHING TIME

Waiting time between first and second coat	12 - 24 h
Finishing time (after application of the last coat)	3 days

MINIERA SAN ROMEDIO S.r.l.
Località Alla Miniera, 1 - Mollaro, 38012 Predaia (TN)
+39 0463 662100 - info@tassullo.it