MAPEI

IN COMPLIANCE WITH EUROPEAN STANDARD
EN 998-1
GP-CS IV
MAPEI
RENDERING AND PLASTERING MORTAR

PoroMap Rinzaffo Macchina

CE
EN 998-1

GEV-EMICODE EC 1 PLUS very low emission



Salt-resistant, transpirant scratch-coat mortar, based on hydraulic pozzolanic-reaction binder, to be used by rendering machine as first layer when applying de-humidifying renders

WHERE TO USE

Renovating brick, stone and tuff masonry, including new build, damaged by capillary rising damp.
Renovating masonry damaged by the crumbling effect of sulphates, chlorides and nitrates.

Some application examples

PoroMap Rinzaffo Macchina must be used as the first layer for:

- internal and/or external macro-porous, de-humidifying and insulating render on stone, brick, tuff and mixed masonry, including recent builds, with capillary rising damp and saline efflorescence;
- de-humidifying and insulating render on stone (such as limestone) and/or particularly porous, absorbent brick masonry, and in general wherever there is saline efflorescence;
- de-humidifying render on masonry in lagoon areas or close to the sea.

TECHNICAL CHARACTERISTICS

PoroMap Rinzaffo Macchina is a ready-mixed powdered mortar for macro-porous, de-humidifying and insulating render made from special hydraulic, pozzolanic-reaction binders, natural sand, lightweight aggregates and special additives with very low emission of volatile organic compounds (EMICODE EC1 R Plus) according to a formula developed in the MAPEI Research & Development laboratories.
This product is classified as GP according to EN 998-1 Standards: "*General purpose mortar for internal/external render*", Category CS IV.

When mixed with water in the hopper of a continuous-feed spraying machine, **PoroMap Rinzaffo Macchina** forms a salt-resistant, macro-porous, de-humidifying mortar with a semi-fluid consistency which is easy to apply by spray both on vertical surfaces and ceilings.
The properties of mortar made using **PoroMap Rinzaffo Macchina**, such as mechanical strength, modulus of elasticity and porosity, are very similar to mortar made using lime, lime-pozzolan and hydraulic lime originally used in the construction of old buildings.
Compared with these types of mortar, however, **PoroMap Rinzaffo Macchina** also has properties which make it resistant to acid rain, freeze-thaw cycles, the leaching action of rainwater, alkali-aggregate reactions and soluble salts often present in the masonry and in the ground on which it is built.
Typical values are shown in the Technical Data table (see application data and final performance sections) which refer to the main characteristics of **PoroMap Rinzaffo Macchina** at both the wet and hardened states.

RECOMMENDATIONS

- Apply a 5 mm thick layer of **PoroMap Rinzaffo Macchina** before applying the macro-porous de-humidifying and insulating render made from **PoroMap Intonaco Macchina**.
- Do not apply **PoroMap Rinzaffo Macchina** with a trowel (use **PoroMap Rinzaffo**).
- Never add additives, cement or other binders (lime and gypsum) to **PoroMap Rinzaffo Macchina**.

PoroMap Rinzaffo Macchina



Removal of old render



Cleaning the masonry

- Do not apply **PoroMap Rinzaffo Macchina** if the temperature is lower than +5°C.

APPLICATION PROCEDURE

Substrate preparation

Completely remove all the render using hand or power tools to a height of around 50 cm above the damaged render, and in all cases to a height of at least twice the thickness of the wall. Remove all traces of loose or crumbling material, dust, mould and any other substance or material that could affect the bond of the **PoroMap Rinzaffo Macchina** and **PoroMap Intonaco Macchina** de-humidifying cycle until the substrate is clean, sound and compact. Clean the masonry with low-pressure water jets to remove any efflorescence or soluble salts present on the surface. Repeat this operation several times if necessary.
Repair any gaps and uneven areas in the masonry by patching or tacking them using stone, bricks or tuff with similar characteristics to the original material.
Saturate the substrate with water to prevent it drawing off water from the mortar and compromising its final performance characteristics. Excess water must be left to evaporate off, so that the masonry is saturated and the surface is dry (s.s.d. condition). Compressed air may be used to speed up this process. If the substrate cannot be saturated with water, we recommend that it is at least wetted to allow the mortar to adhere correctly.
Before applying **PoroMap Intonaco Macchina** always apply a layer of **PoroMap Rinzaffo Macchina** around 5 mm thick to completely cover the substrate to be rendered to improve its adhesion; even out the absorption of the substrate and slow down the transfer of salts.
On mixed walls or on walls out of plumb by more than 4-5 cm, which would lead to the layer of render having an irregular thickness, we recommend inserting a Ø 2 mm galvanised mesh with a mesh size of 5 x 5 cm before applying **PoroMap Rinzaffo Macchina**. Fasten the mesh to the masonry with nails, plugs or chemical anchors (such as **Mapefix PE Wall** or **Mapefix PE SF**) with a small gap between the mesh and the substrate so that it becomes embedded in the middle of the layer of mortar.

Preparation of the product

Pour the contents of the bags of **PoroMap Rinzaffo Macchina** into the hopper of a continuous-mix rendering machine (such as a PFT G4 or G5, Putzmeister MP 25, Turbosol or a similar machine) and set the flow-rate at 440-460 l/h, depending on the type of equipment used, until a “plastic”, thixotropic consistency is obtained. Tests to validate the product were carried out using a Putzmeister MP 25 with the following set-up:

Stator Rotor	Mixer	Hose	Spray lance
D6 Power	*Standard*	Ø 25 mm, length 15 m	*Standard*, 14 mm nozzle
D6 - 3			

Note: *The figures in this Technical Data Sheet may vary depending on the environmental conditions when the product is applied and the type of rendering machine used.*

Application of the product

Apply a layer of **PoroMap Rinzaffo Macchina** around 5 mm thick with a rendering machine to completely cover the wall to be rendered, starting from the bottom working upwards. This thin base layer improves the adhesion of **PoroMap Intonaco Macchina**, evens out the absorbency of the substrate and slows down the transfer of soluble salts.
After applying the scratch-coat mortar do not float or compact the surface.
Even though **PoroMap Rinzaffo Macchina** contains products which contrast the formation of micro-cracks caused by plastic shrinkage, it is good practice to apply the mortar when the wall is not exposed to direct sunlight and/or wind. In such cases, such as during hot and/or particularly windy weather, take special care when curing the mortar. Spray water on the surface or employ other systems to prevent the mixing water evaporating off too quickly.

Cleaning

Remove mortar from tools with water before it hardens. Once hardened, cleaning is much more difficult and must be carried out mechanically.

PACKAGING

25 kg bags.

COLOUR

Light grey.

CONSUMPTION

7.5-8 kg/m^2 (for a 5 mm thick layer).

STORAGE

12 months in a dry, covered area in its original, unopened packaging.
This product complies with the prescriptions of Reg. (EC) N. 1907/2006 (REACH) - Annex XVII, article 47.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

PoroMap Rinzaffo Macchina contains cement that when in contact with sweat or other body fluids causes irritant alkaline reactions and allergic reactions to those predisposed. It can cause damage to eyes. It is recommended to use protective gloves and goggles and to take the usual precautions for handling chemicals. If the product comes in contact with the eyes or skin, wash immediately with plenty of water and seek medical attention.
For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY	
Type of mortar (EN 998-1):	GP - General purpose mortar for internal/external render
Consistency:	powder
Colour:	light grey
Maximum size of aggregate (EN 1015-1) (mm):	2.5
Bulk density (kg/m^3):	1,000-1,100
EMICODE:	EC1 R Plus - very low emission
APPLICATION DATA (at +20°C - 50% R.H.)	
Mixing ratio:	100 parts of **PoroMap Rinzaffo Macchina** with 19-21 parts of water (4.75-5.25 litres of water per 25 kg bag of product)
Consistency of mix:	semi-fluid
Density of wet mortar (EN 1015-6) (kg/m^3):	1,800
Porosity of wet mortar (EN 1015-7) (%):	> 20
Application temperature:	from +5°C to +35°C
Workability time of wet mortar (EN 1015-9):	approx. 60 mins.
Thickness to be applied (mm):	5

FINAL PERFORMANCE: 20% mixing water; mixed in compliance with EN 1015-2 standards

Performance characteristic	Test method	Requirements according to alla EN 998-1	Performance of product
Compressive strength after 28 days (N/mm^2):	EN 1015-11	CS I (from 0.4 to 2.5)	≥ 8 (Category CS IV)
		CS II (from 1.5 to 5)	
		CS III (from 3.5 to 7.5)	
		CS IV (≥ 6)	
Adhesion to substrate (N/mm^2):	EN 1015-12	declared value and failure mode (FP)	≥ 0.5 Failure mode (FP) = B
Capillary action water absorption [kg/(m^2·min^{0,5})]:	EN 1015-18	W 0 (not specified) W 1 (C ≤ 0.40) W 2 (C ≤ 0.20)	Category W 1
Coefficient of permeability to water vapou (μ):	EN 1015-19	declared value	< 20
Thermal conductivity ($\lambda_{10,\ dry}$) (W/m·K):	EN 1745	chart value	0.57 (*P* = 50%)
Reaction to fire:	EN 13501-1	value declared by manufacturer	Class A1
Resistence to sulphates:	Anstett test	not required	high
Saline efflorescence (after semi-immersion in water):	/	not required	absent



Application of PoroMap Rinzaffo Macchina with a rendering machine

PoroMap Rinzaffo Macchina



WARNING

Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

This symbol is used to identify Mapei products which give off a low level of volatile organic compounds (VOC) as certified by GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), an international organisation for controlling the level of emissions from products used for floors.

Our Commitment To The Environment
MAPEI products assist Project Designers and Contractors create innovative LEED (The Leadership in Energy and Environmental Design) certified projects, in compliance with the U.S. Green Building Council.

All relevant references for the product are available upon request and from www.mapei.com

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