



PoroMap Intonaco Macchina



Salt-resistant, macroporous dehumidifying and insulating render, based on hydraulic pozzolanic-reaction binder, to be used by rendering machine for renovating masonries deteriorated by the presence of rising damp and soluble salts



WHERE TO USE

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

Some application examples

- Internal and/or external macroporous, dehumidifying and insulating render on stone, brick, tuff and mixed masonry, including recent builds, with capillary rising damp and saline efflorescence.
- Dehumidifying and insulating render on stone (such as limestone) and/or particularly porous, absorbent brick masonry, and in general wherever there is saline efflorescence.
- Dehumidifying render for masonry in lagoon areas or close to the sea.
- Repairing damaged render on buildings built using low performance mortar.
- Pointing between stone, brick and tuff elements on "exposed" masonry.

TECHNICAL CHARACTERISTICS

PoroMap Intonaco Macchina is a ready-mixed powdered mortar for macro-porous, dehumidifying and insulating render made from special hydraulic, pozzolanic-reaction binders, natural sand, lightweight aggregates and special admixtures 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 R according to EN 998-1 Standards: "*Renovation mortar. Mortar designed for internal/external render applied on damp masonry walls*

containing water-soluble salts", Category CS II.

When mixed with water in the hopper of a continuous-feed mixer pump, **PoroMap Intonaco Macchina** forms a salt-resistant, macro-porous, de-humidifying and insulating rendering mortar with a plastic-thixotropic consistency which is easy to apply by spray both on vertical surfaces and ceilings.

The properties of a mortar made using **PoroMap Intonaco Macchina**, such as mechanical strength, modulus of elasticity and porosity, are very similar to mortars made using lime, lime-pozzolan and hydraulic lime originally used in the construction of old buildings. Compared with these types of mortar however, **PoroMap Intonaco 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 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 Intonaco Macchina** at both the wet and hardened states.

RECOMMENDATIONS

- Only apply **PoroMap Intonaco Macchina** after applying a layer around 5 mm thick of **PoroMap Rinzafo Macchina**.
- The layer of **PoroMap Intonaco Macchina** applied must be at least 20 mm thick.
- Do not apply **PoroMap Intonaco Macchina** with a trowel (use **PoroMap Intonaco**).

PoroMap Intonaco Macchina



Application of PoroMap Intonaco Macchina



Application phase

- Do not use **PoroMap Intonaco Macchina** for pouring into formwork.
- Do not use **PoroMap Intonaco Macchina** to make “reinforced” render.
- Do not use **PoroMap Intonaco Macchina** for skimming surfaces (use **PoroMap Finitura**).
- Never add admixtures, cement or other binders (lime and gypsum) to **PoroMap Intonaco Macchina**.
- Do not apply thin coats of coloured paint or coating products which could affect the transpiration properties of **PoroMap Intonaco Macchina** and, therefore, obstruct the evaporation of moisture in the masonry. Use products from the **Silexcolor** or **Silancolor** ranges, lime-based paints or water-repelling products, such as **Antipluviol S** or **Antipluviol W**.
- If the structures to be renovated have a high level of capillary rising damp and high concentrations of soluble salts, we recommend forming a horizontal chemical barrier using **Mapestop** before applying the dehumidifying render to reduce the ingress of damp into the masonry as much as possible.
- Do not apply **PoroMap Intonaco 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 Rinzafo 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** apply a layer of **PoroMap Rinzafo 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 Rinzafo 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.

Form levelling strips with **PoroMap Intonaco Macchina** or place vertical guides in position to define the correct planarity and thickness of the render.

Preparation of the product

Pour the contents of the bags of **PoroMap Intonaco 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 320-360 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

Wait until the layer of **PoroMap Rinzafo Macchina** starts to set then apply a layer at least 20 mm thick of **PoroMap Intonaco Macchina** with a rendering machine, starting from the bottom working upwards. If the area to be integrated is thicker than 30 mm, **PoroMap Intonaco Macchina** must be applied in several layers. Each layer must be applied without floating the previous layer. After applying the render, wait a few minutes and level off the surface using an aluminium “H-type” or “blade-type” straight edge by going over the surface horizontally and vertically until it is flat. Remove the vertical guides (if they have been used), and fill the gaps with **PoroMap Intonaco Macchina**. Finish off the surface of the render with a plastic, wooden or sponge float a few hours after application, depending on the environmental the temperature and conditions.

Never press down on the surface of **PoroMap Intonaco Macchina**, otherwise the porosity of the render would be reduced and, as a result, evaporation of the moisture in the masonry would be obstructed.

Even though **PoroMap Intonaco 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 render, especially during the first 36-48 hours. Spray water on the surface or employ other systems

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Type of mortar (EN 998-1):	R - Renovation mortar. Mortar designed for internal/external render applied on damp masonry walls containing water-soluble salts"
Consistency:	powder
Colour:	light grey
Maximum size of aggregate (EN 1015-1) (mm):	1
Bulk density (kg/m ³):	1.200
EMICODE:	EC1 R Plus - very low emission

APPLICATION DATA (at +20°C - 50% R.H.)

Mixing ratio:	100 parts of PoroMap Intonaco Macchina with 21.5-23.5 parts of water (4.25-4.75 litres of water per 20 kg bag of product)
Consistency of mix:	plastic-thixotropic
Density of wet mortar (EN 1015-6) (kg/m ³):	1,200
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.
Minimum applicable thickness (mm):	20
Maximum applicable thickness per layer (mm):	30

FINAL PERFORMANCE: 22.5% 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)	2.5 (Category CS II)
		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)	≥ 0.4 Failure mode (FP) = B
Capillary action water absorption (kg/m ²):	EN 1015-18	≥ 0.3 (after 24 hours)	2.5
Coefficient of permeability to water vapour (μ):	EN 1015-19	declared value	≤ 10
Thermal conductivity (λ _{10, dry}) (W/m·K):	EN 1745	chart value	0.30 (P = 50%)
Reaction to fire:	EN 13501-1	value declared by manufacturer	Class A1
Resistance to sulphates:	Anstett test	not required	high
Saline efflorescence (after semi-immersion in water):	/	not required	absent



Levelling off the surface with a straight-edge PoroMap Intonaco Macchina



Levelling off the surface with a straight-edge PoroMap Intonaco Macchina

Poromap Intonaco Macchina



to prevent the mixing water evaporating off too quickly.

Finishing the surface

If a finer-textured surface finish than the normal floated finish of **Poromap Intonaco Macchina** is required, apply a layer of **Poromap Finitura**. We advise against using this product, however, on structures with a high level of capillary rising damp or with high concentrations of soluble salts; it tends to reduce the porosity of the surface of the dehumidifying render slightly and it is important that the levels of transpiration and porosity remain high. In such cases it is better to use silicate-based **Silexcolor Tonachino** or siloxane-based **Silancolor Tonachino**, coloured coating products applied in thin coats after applying their corresponding *primers* (**Silexcolor Primer** and **Silancolor Primer**).

Always wait until the render and skimming layer, if applied, are completely cured before painting the surface or applying any other type of finishing product. If the surface requires painting, use **Silexcolor Paint** or **Silancolor Paint** after applying their aforementioned corresponding *primers*. If the render is not going to be painted or coated, especially on constructions particularly exposed to rain, the surface may be protected with a transparent, transpirant, water-repellent product such as **Antipluviol S** siloxane resin-based impregnator in solvent or **Antipluviol W** siloxane resin-based impregnator in water dispersion.

Cleaning

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

PACKAGING

20 kg bags.

COLOUR

Light grey

CONSUMPTION

11.5-13 kg/m² (per cm of thickness).

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 Intonaco 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.

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 (Gesellschaft 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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