



PoroMap Deumidificante

**Salt-resistant
dehumidifying render
for renovating masonry
with rising damp**



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 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 "exposed" stone, brick and tuff masonry.

TECHNICAL CHARACTERISTICS

PoroMap Deumidificante is a ready-mixed powdered mortar used to make macroporous and insulating render made from special, Pozzolan-reaction and salt-resistant hydraulic binders, natural sand, lightweight aggregates and special additives with very low emission of volatile organic compounds (EMICODE EC1 Plus) according to a formula developed in MAPEI R&D Laboratories. The product complies with EN 998-1 standards and is classified R: "Renovation mortar. Mortar designed for internal/external render applied on damp masonry walls containing water-soluble salts", Category CS II.

After mixing with water in the hopper of a continuous-mix rendering machine or in a cement mixer, **PoroMap Deumidificante** forms a salt-resistant, macroporous,

dehumidifying rendering mortar with a plastic-thixotropic consistency which is easy to apply by spray or trowel on vertical surfaces and ceilings.

The properties of mortar made from **PoroMap Deumidificante**, such as mechanical strength, modulus of elasticity and porosity, are very similar to those of mortar made from lime, lime-Pozzolan or hydraulic lime originally used in the construction of old buildings, including those of historical interest.

Compared with these types of mortar, however, **PoroMap Deumidificante** also has properties which make it resistant to acid rain, the leaching action of rainwater, alkali-aggregate reactions and soluble salts often present in masonry and in the ground on which it is standing.

Typical values are shown in the Technical Data table (see Application Data and Final Performance sections) which refer to the main characteristics of **PoroMap Deumidificante** at both the wet and hardened states.

RECOMMENDATIONS

- **PoroMap Deumidificante** must be applied in layers at least 20 mm thick.
- Do not use **PoroMap Deumidificante** for pouring into formwork.
- Do not use **PoroMap Deumidificante** to make "reinforced" render.
- Do not use **PoroMap Deumidificante** for skimming surfaces (use **PoroMap Finitura Civile** or **PoroMap Finitura Granello**).
- Never add additives, cement or other binders (lime and gypsum) to **PoroMap Deumidificante**.
- Do not apply coloured paint or thin layers of coating products which could affect the transpiration properties of **PoroMap Deumidificante** and,

PoroMap Deumidificante



Removing the existing render



Application of PoroMap Deumidificante with a rendering machine



Detail of the application phase

therefore, obstruct the evaporation of moisture in the masonry. Use products from the **Silexcolor** or **Silancolor** ranges of lime-based paint, or a water-repellent treatment such as **Antipluvial S** or **Antipluvial W** if you want to maintain the original finish of the render.

- 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** or **Mapestop Cream** before applying the dehumidifying render to reduce ingress of damp into the masonry as much as possible.
- **PoroMap Deumidificante** continues to carry out its function until all the macro-pores inside the render have been completely saturated with salts. Since the time required to completely saturate the macro-pores depends on the amount of soluble salts in the masonry being renovated, it is not possible to foresee the durability of this type of render.
- In case of substrates with poor mechanical resistance or smooth concrete, it is recommended to apply **Poromap Rinzafo Plus** prior to the realisation of the dehumidifying render.
- In case of basements or underground structures where waterproofing with water in counterpressure is realised, (**Mapelastic Foundation**), apply **Poromap Rinzafo Plus** prior to the application of **PoroMap Deumidificante**.
- Do not apply **PoroMap Deumidificante** if the temperature is lower than +5°C.

APPLICATION PROCEDURE

Preparation of the substrate

Completely remove all damaged and deteriorated 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 material which could affect adhesion of **PoroMap Deumidificante** until the substrate is clean, sound and compact. Clean the wall with low-pressure water jets to remove any efflorescence or salts present on the surface. Repeat this operation several times if necessary.

Gaps and uneven areas in the masonry must be repaired by patching or tacking using one of the mortars from the **Mape-Antique** or **MapeWall** ranges and pieces of stone, brick or tuff with characteristics as similar as possible to the original material. Saturate the substrate with water to prevent it drawing off water from the mortar and affecting 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.

On mixed masonry or on masonry out of plumb by more than 4-5 cm, which would lead to the layer of render having an irregular thickness, it is recommended to apply pieces of Ø 2 mm 5 x 5 cm galvanized mesh to the substrate before applying **PoroMap Deumidificante**. Fasten the mesh

to the masonry with nails, plugs or chemical anchors (such as **Mapefix PE Wall** or **Mapefix PE SF**), leaving 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

PoroMap Deumidificante must be prepared in the hopper of a continuous-mix rendering machine if it is to be applied by spray or in a cement mixer if it is to be applied by trowel. Even though this product is suitable for application using hand tools, we recommend using a rendering machine for application on large surfaces to obtain a higher yield. Small amounts of the product may be prepared using an electric drill at low-speed with a mixing attachment. Mixing by hand is not recommended.

Application of the product

Application with a rendering machine

Pour the contents of the bags of **PoroMap Deumidificante** 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 320-340 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 surrounding conditions when the product is applied and the type of rendering machine used.

Application by trowel

After pouring the minimum amount of clean water required into the mixer (approx. 4.4 litres every 20 kg bag of

PoroMap Deumidificante), slowly add the powdered mortar in a continuous flow. Mix for approximately 3 minutes and check that the blend is well mixed, even and lump-free and that any lumps of powder that have stuck to the sides or bottom of the mixer are removed. Add more water if required up to a maximum of 4.8 litres per bag including the water added at the start of mixing.

Then complete mixing of the **PoroMap Deumidificante** by mixing for a further 2-3 minutes, depending on the efficiency of the mixer, to obtain an even, "plastic" and thixotropic mix.

Regardless of the application method chosen, spread a layer at least 20 mm thick of **PoroMap Deumidificante**, starting from the bottom working upwards. If the thickness to be applied is more than 30 mm, **PoroMap Deumidificante** must be applied in several layers. Each layer must be applied without tamping or working the previous one. After applying the mortar, wait a few minutes and level off the surface with 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

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):	2.5
Bulk density (kg/m³):	1,200
EMICODE:	EC1 Plus - very low emission

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

Mixing ratio:	100 parts of PoroMap Deumidificante with 22-24 parts of water (4.4-4.8 litres of water per 20 kg bag of product)
Consistency of mix:	plastic-thixotropic
Bulk density of wet mortar (EN 1015-6) (kg/m³):	1,350
Porosity of wet mortar (EN 1015-7) (%):	> 20
Application temperature:	+5°C to +35°C
Workability time of wet mortar (EN 1015-9):	approx. 60 mins.
Minimum applicable thickness (mm):	20
Maximum applicable thickness (mm):	30

FINAL PERFORMANCE: 23% mixing water; mixed in compliance with EN 1015-2

Performance characteristic	Test method	Requirements according to EN 998-1	Performance of product
Compressive strength after 28 days (N/mm²):	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/mm²):	EN 1015-12	declared value and failure pattern (FP)	≥ 0.30 Failure pattern (FP) = B
Capillary action water absorption (kg/m²):	EN 1015-18	≥ 0.3 (after 24h)	3.0
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	0.35 (P = 50%)
Reaction to fire:	EN 13501-1	Euroclass	A1
Resistance to sulphates:	Anstett test	n/a	high
Saline efflorescence:	/	n/a	absent



Application of PoroMap Deumidificante by trowel



Levelling off PoroMap Deumidificante with a straightedge

PoroMap Deumidificante



they have been used, and fill the gaps with the same product.

Finish off the surface of the render with a plastic, wooden or sponge float a few hours after application, depending on the surrounding temperature and conditions. Never press down on the surface of **PoroMap Deumidificante**, otherwise its porosity could be reduced and, therefore, impede evaporation of the moisture in the masonry.

Even though **PoroMap Deumidificante** 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 to impede the mixing water evaporating off too quickly.

FINISH

If a finer-textured finish than the normal tamped finish of **PoroMap Deumidificante** is required, apply a layer of **Poromap Finitura Civile** or **Poromap Finitura Granello** or one of the skimming mortars from the **Mape-Antique Eco Rasante** range or from the **Mape-Antique FC** range, which is available in various textures. Even though these finishes may be applied on any type of lime-based render, including macroporous dehumidifying render, their fine textured finish tends to slightly reduce the vapour permeability of render. For structures with high levels of capillary rising damp and high concentrations of soluble salts, it is preferable 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 is completely cured before skimming the surface or applying a coloured coating 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, particularly when it will be exposed to rain, it may be protected with a transparent, breathable, water-repellent product such as **Antipluviol S** siloxane resin impregnator in solvent or **Antipluviol W** siloxane resin 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.

CONSUMPTION

11-12 kg/m² (per cm of thickness).

STORAGE

12 months in a dry, covered area in its original, unopened packaging.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the Safety Data Sheet, available from our website www.mapei.com.

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

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



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