



# MAPEI



# Mape-Antique MC



**Macroporous, salt-resistant de-humidifying render, based on lime and Eco-Pozzolan, for restoring old masonry, including on buildings of historical interest**



## WHERE TO USE

Repairs to old masonry deteriorated by the presence of capillary rising damp, including on buildings of historical and artistic interest.

Repairs to masonry deteriorated by the disintegrating action of concentrated salts.

Rebuilding lime-based render deteriorated by the action of atmospheric agents and environmental conditions or by ageing.

## Some application examples

- Internal and/or external macro-porous, de-humidifying render on old walls with capillary rising damp.
- Internal and/or external macro-porous, de-humidifying render on old stone, brick, tuff or mixed masonry with saline efflorescence.
- De-humidifying render on masonry in lagoon areas or close to the sea.
- New de-humidifying render or reconstructing old lime-based render on stone, brick, tuff and mixed masonry, including on buildings of historical and artistic interest with a conservation order or under the protection of the National Trust.
- Touching-up and plumbing facing walls with gaps and uneven surfaces.
- Pointing between layers of stone, brick and tuff on masonry with a "natural finish".

## TECHNICAL CHARACTERISTICS

**Mape-Antique MC** is a pre-blended, cement-free mortar in powder form for de-humidifying render made from lime, Eco-Pozzolan, natural sand, special additives and micro-fibres with very low emission level of volatile organic compounds (EMICODE EC1 R Plus), according

to a formulation developed in MAPEI's research 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 a cement mixer, **Mape-Antique MC** forms a salt-resistant, macro-porous, de-humidifying rendering mortar with a plastic-thixotropic consistency which is easy to apply by trowel on both vertical surfaces and on ceilings.

The properties of mortar made using **Mape-Antique MC**, such as mechanical strength, modulus of elasticity and porosity, are very similar to mortar made using lime, lime-pozzolan or hydraulic lime originally used in the construction of old buildings.

Compared with these types of mortar, however, **Mape-Antique MC** also has properties which make the product resistant to various chemical-physical aggressive phenomena, such as the presence of soluble salts, freeze-thaw cycles, the leaching action of rainwater, alkali-aggregate reactions and the formation of cracks caused by plastic shrinkage.

When working on particularly damp internal walls or in cold weather, the setting and hardening times of **Mape-Antique MC** are considerably longer and much more time than usual must be allowed for the product to cure. The product may give off a different odour for a while when curing under such conditions and may turn green in some areas. The odour and green colour will gradually disappear as the product and wall dry out until it takes on its characteristic light colour.

Typical values are shown in the Technical Data table (see Application Data and Final Performance sections)

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which refer to the main characteristics of **Mape-Antique MC** at both fresh and hardened states.

## RECOMMENDATIONS

- In the presence of capillary rising damp and soluble salts, only apply **Mape-Antique MC** after applying a layer of **Mape-Antique Rinzafo** approximately 5 mm thick.
- **Mape-Antique MC** must be applied in layers at least 20 mm thick.
- Do not use **Mape-Antique MC** for casting into formwork (**Mape-Antique LC** mixed with aggregates with a suitable grain size).
- Do not use **Mape-Antique MC** to make consolidating slurry for injection into structures (use **Mape-Antique I** or **Mape-Antique F21**).
- Do not use **Mape-Antique MC** for “reinforced” render (use **Mape-Antique Strutturale NHL**).
- Do not use **Mape-Antique MC** for skimming (use **Mape-Antique FC Ultrafine**, **Mape-Antique FC Civile** or **Mape-Antique FC Grosso**).
- Never add additives, cement or other binders (lime and gypsum) to **Mape-Antique MC**.
- Do not apply thin coats of paint or coloured coating which could have a significant impact on the transpiration properties and porosity of **Mape-Antique MC** and, therefore, obstruct the evaporation of the damp in the masonry. Use products from the **Silexcolor** or **Silancolor** ranges, lime-based paint and water-repelling products such as **Antipluviol S** or **Antipluviol W**.
- If the structures to be restored suffer from intense capillary rising damp and high concentrations of soluble salts, we recommend forming a horizontal chemical barrier (such as with **Mapestop**) before applying the de-humidifying render to reduce the ingress of damp into the masonry as much as possible.
- We recommend analysing the walls before applying the product to determine the concentration level of salts in the walls.
- Do not apply **Mape-Antique MC** if the temperature is lower than +5°C.



Applying Mape-Antique MC over Mape-Antique Rinzafo



Levelling the surface of Mape-Antique MC with a straight edge



Levelling the surface of Mape-Antique MC

**Strutturale NHL** in combination with pieces of stone, brick or tuff with characteristics as similar as possible to the original material. Saturate the substrate with water to prevent it from absorbing 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. 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 dampened to allow the mortar to bond correctly. If there is capillary rising damp, before spreading on the **Mape-Antique MC**, apply a layer of **Mape-Antique Rinzafo** approximately 5 mm thick to completely cover the substrate to improve the bond, even out the absorption of the substrate and slow down the transfer of the 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 Ø 2 mm zinc-plated metallic mesh with a mesh size of 5 x 5 cm before applying the **Mape-Antique Rinzafo**. The mesh must be fixed in place to the wall with nails, chemical anchoring (such as **Mapefix PE SF**) and plugs with a small gap between the wall so that it becomes embedded in the middle of the layer of render. Form levelling strips with **Mape-Antique MC** or place vertical guides in position to define the correct planarity and thickness of the render.

## Preparation of the product

Prepare **Mape-Antique MC** with a vertical cement mixer. Small amounts of the product may be prepared using a low-speed electric drill with a mixing attachment. Mixing the product by hand is not recommended. After pouring the minimum amount of clean water required into the mixer (3.5 litres per 25 kg bag of **Mape-Antique MC**), slowly add the powdered mortar in a continuous flow. Mix for approximately 3 minutes and check that the blend is well mixed, even and free of lumps and ensure that no material has stuck to the sides and bottom of the mixer. Add a further amount of water if required up to a total of 4 litres per bag, including the water added at the start of mixing. Then mix the **Mape-Antique MC** again for a further 2-3 minutes to obtain an even, “plastic” and thixotropic blend.

## Application of the product

If a layer of **Mape-Antique Rinzafo** has been applied, for example on masonry with capillary rising damp and soluble salts, wait until this layer has “set” and then apply a layer of **Mape-Antique MC** at least 20 mm thick with a trowel, starting from the bottom of the wall. If the thickness to be built up is thicker than 30 mm, **Mape-Antique MC** must be applied in several layers. Each layer must be applied without tamping the previous layer. After applying the mortar, wait a few minutes and level off using an aluminium H-type or blade-type straight edge by passing over the surface horizontally and vertically until it is flat. Remove the vertical

## APPLICATION PROCEDURE

### Preparation of the substrate

On masonry with capillary rising damp and soluble salts, completely remove the deteriorated render either manually or with mechanical means to a height of approximately 50 centimetres above the deteriorated area, and in all cases to a height of at least twice the thickness of the wall. Remove all traces of loose or crumbly material, dust, mould and any other element which could compromise the bond of the de-humidifying cycle of **Mape-Antique Rinzafo** and **Mape-Antique MC** until the substrate is clean, sound and compact. Then clean the wall with low-pressure water jets to remove any efflorescence or soluble 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 with **Mape-Antique MC**, **Mape-Antique Allettamento** or **Mape-Antique**



## TECHNICAL DATA (typical values)

### PRODUCT IDENTITY

<b>Type of mortar (EN 998-1):</b>	R: "Renovation mortar. Mortar designed for internal/ external render applied on damp masonry walls containing water-soluble salts"
<b>Consistency:</b>	powder
<b>Colour:</b>	white
<b>Maximum size of aggregate (EN 1015-1) (mm):</b>	2.5
<b>Bulk density (kg/m<sup>3</sup>):</b>	1,500
<b>EMICODE:</b>	EC1 R Plus - very low emission level

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

<b>Mixing ratio:</b>	100 parts of <b>Mape-Antique MC</b> with 14-16 parts of water (3.5-4 litres of water per 25 kg bag of product)
<b>Consistency of blend:</b>	plastic-thixotropic
<b>Consistency of fresh mortar (EN 1015-3) (mm):</b>	170
<b>Bulk density of fresh mortar (EN 1015-6) (kg/m<sup>3</sup>):</b>	1,700
<b>Porosity of the mortar while still fresh (EN 1015-7) (%):</b>	> 20
<b>Application temperature range:</b>	from +5°C to +35°C
<b>Workability time of fresh mortar (EN 1015-9):</b>	approx. 60 minutes
<b>Minimum applicable thickness (mm):</b>	20
<b>Maximum applicable thickness per layer (mm):</b>	30

### FINAL PERFORMANCE (15% mixing water)

Performance characteristic	Test method	Requirements according to EN 998-1	Performance of product
<b>Compressive strength after 28 days (N/mm<sup>2</sup>):</b>	EN 1015-11	CS I (from 0.4 to 2.5)	Category CS II
		CS II (from 1.5 to 5.0)	
		CS III (from 3.5 to 7.5)	
		CS IV (≥ 6)	
<b>Bond strength to substrate (N/mm<sup>2</sup>):</b>	EN 1015-12	declared value and failure mode (FP)	≥ 0.4 failure mode (FP) = B
<b>Capillary action water absorption (kg/m<sup>2</sup>):</b>	EN 1015-18	≥ 0.3 (after 24 h)	3.5
<b>Coefficient of permeability to water vapour (μ)</b>	EN 1015-19	≤ 15	≤ 10
<b>Thermal conductivity (λ<sub>10,dry</sub>) (W/m-K):</b>	EN 1745	tabulated value	0.61
<b>Reaction to fire:</b>	EN 13501-1	value declared by manufacturer	Class A1
<b>Resistance to sulphates:</b>	Anstett test	not required	high
<b>Saline efflorescence (after semi-immersion in water):</b>	/	not required	absent



*Finishing mortared joints pointed with Mape-Antique MC*

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guides, if they have been used, and fill the gaps with **Mape-Antique MC**.

Finish off the surface of the render with a plastic, wooden or sponge float a few hours after application, according to the surrounding temperature and conditions. Never press down on the surface of the **Mape-Antique MC** otherwise the porosity of the render would reduce and, as a result, evaporation of the damp in the masonry would be obstructed.

Even though **Mape-Antique MC** contains products which constrict the formation of micro-cracks, 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 prevent the mixing water evaporating off too quickly.

## FINISHING COAT

If a finer-grained surface finish than the normal tamped finish of **Mape-Antique MC** is required, apply a layer of **Mape-Antique FC Ultrafine**, **Mape-Antique FC Civile** or **Mape-Antique FC Grosso** skimming compounds with different grain sizes. Even though **Mape-Antique FC Ultrafine** and **Mape-Antique FC Civile** may be applied on any type of lime-based render, including macro-porous de-humidifying render, the fine grain structure of these skimming compounds tends to slightly reduce the vapour permeability of the render. In such cases, it is better to use **Mape-Antique FC Grosso** which has a thick finishing or 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. Paint the surface with **Silexcolor Paint** or **Silancolor Paint** after applying their corresponding primers. For constructions particularly exposed to rain, if the render does not require any coating, it may be protected with a transparent water-repellent product such as **Antipluviol S** siloxane resin impregnator in solvent or **Antipluviol W** siloxane resin impregnator in water dispersion.

## Cleaning

Mortar may be removed from tools with water before it hardens. Once hardened, cleaning is difficult and must be carried out mechanically.

## PACKAGING

25 kg bags.

## COLOUR

White.

## CONSUMPTION

15 kg/m<sup>2</sup> (per cm of thickness).

## STORAGE

Store **Mape-Antique MC** up to 12 months in a dry, covered environment in its original, unopened packaging.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Mape-Antique MC** contains special hydraulic binders, that when in contact with sweat or other body fluids cause corrosion and damage to eyes. It is recommended to wear protective gloves and goggles and to take the usual precautions for handling of chemicals. If the product comes in contact with the eyes or the 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](http://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](http://www.mapei.com)**



BUILDING THE FUTURE