MAPE-ANTIQUE NHL ECO INTONACO

Breathable, cement-free base render made from pure natural hydraulic lime and recycled material, for application on existing masonry work, including those of historical interest, and on new constructions

CO_2 FULLY OFFSET PRODUCTS

Mape-Antique NHL Eco Intonaco is part of the *CO_2 Fully Offset in the Entire Life Cycle* line of products. CO_2 emissions measured throughout the life cycle of products from the Zero line in 2024 using Life Cycle Assessment (LCA) methodology, have been offset through the acquisition of certified carbon credits in support of forestry protection projects. A commitment to the planet, to people and to biodiversity. For more details on how emissions are calculated and on climate mitigation projects financed through certified carbon credits, visit the webpage zero.mapei.com.

WHERE TO USE

Rendering old stone, brick, tuff and mixed walls using a rendering machine or trowel, including decorative walls and those of historical interest, before applying paint or thin layers of coloured coating.
Rendering down to the level of the stone on walls not subject to capillary rising damp.
Rebuilding old lime-based render deteriorated by the action of atmospheric agents and environmental conditions or by ageing.

Some application examples

- New layers of internal and external transpirant render applied with a rendering machine or by trowel on stone, brick, tuff and mixed walls without capillary rising damp.
- New render or rebuilding old lime-based and/or weak render on stone, brick, tuff and mixed walls, including those of historical and architectural interest and listed buildings.

TECHNICAL CHARACTERISTICS

Mape-Antique NHL Eco Intonaco is a cement-free, pre-blended mortar in powder form for breathable render, containing recycled material, selected lime sands, special admixtures and micro-fibres, with very low emission of volatile organic compounds (EMICODE EC1 Plus) according to a formulation developed in MAPEI's research laboratories. This product is classified as GP according to EN 998-1 Standards: "*General purpose mortar for internal/external render*", Category CS II.
When **Mape-Antique NHL Eco Intonaco** is mixed with water using a continuous mixing rendering machine or a cement mixer, it forms a transpirant rendering or masonry mortar with a plastic-thixotropic consistency which is easy to apply by spraying or with a trowel on both vertical surfaces and on ceilings.
The properties of mortar made using **Mape-Antique NHL Eco Intonaco**, such as mechanical strength, modulus of elasticity and porosity, are very similar to the ones of a mortar made using lime, lime-pozzolan and hydraulic lime originally used in the construction of buildings. Compared with these types of mortar, however,

Mape-Antique NHL Eco Intonaco also contains properties which make the product resistant to various aggressive chemical-physical phenomena, such as freeze-thaw cycles, the leaching action of rainwater, alkali-aggregate reactions and the formation of cracks caused by plastic shrinkage.
Typical values are shown in the Technical Data table (see Application Data and Final Performance sections) which refer to the main characteristics of **Mape-Antique NHL Eco Intonaco** at both the fresh and hardened states.

RECOMMENDATIONS

- If capillary rising damp or sulphate salts are present, apply **Mape-Antique NHL Eco Risana** or the dehumidifying system for aggressive environments comprising **Mape-Antique Rinzaffo** and **Mape-Antique MC** or **Mape-Antique LC** mixed with aggregates with a suitable grain size.
- If it is difficult to thoroughly clean the masonry (internal walls for example) or if applied on mixed walls, wet the surface and apply a layer of **Mape-Antique NHL Eco Rinzaffo** or of **Mape-Antique Rinzaffo** before applying **Mape-Antique NHL Eco Intonaco** to guarantee a good bond of the render.
- **Mape-Antique NHL Eco Intonaco** must be applied in layers at least 10 mm thick.
- Do not use **Mape-Antique NHL Eco Intonaco** for casting into formwork (in such cases use **Mape-Antique Colabile** or **Mape-Antique LC** mixed with aggregates with a suitable grain size).
- Do not use **Mape-Antique NHL Eco Intonaco** to make consolidating grout for injection into the structure (in such cases use **Mape-Antique I** or **Mape-Antique I-15** or **Mape-Antique F21**).
- Do not use **Mape-Antique NHL Eco Intonaco** for "reinforced" or installation render (use **Mape-Antique NHL Eco Strutturale** or **Mape-Antique NHL Eco Strutturale 10**).
- Do not use **Mape-Antique NHL Eco Intonaco** as installation mortar (use **Mape-Antique Allettamento** or **Mape-Antique NHL Eco Strutturale** or **Mape-Antique NHL Eco Strutturale 10**).
- Never mix admixtures, cement or other binders (lime and gypsum) to **Mape-Antique NHL Eco Intonaco**.
- Do not apply paint or thin layers of coloured coating products, the transpiration properties of **Mape-Antique NHL Eco Intonaco** could be compromised. Use products from the **Silexcolor** or **Silancolor** ranges, lime-based paint and water-repelling products such as **Antipluviol S** or **Antipluviol W**.
- Do not apply **Mape-Antique NHL Eco Intonaco** if the temperature is lower than +5°C.

APPLICATION PROCEDURE

TECHNICAL INFORMATION FOR THE APPLICATION	
Composition of the mix:	100 kg of **Mape-Antique NHL Eco Intonaco** 19-21 kg of water
Minimum applicable thickness:	10 mm
Maximum applicable thickness per coat:	30 mm
Recommended application temperature range:	surrounding and substrate temperature from +5°C to +35°C
Pot life of mix:	approx. 1 h

Preparation of the substrate

Mape-Antique NHL Eco Intonaco may be applied directly on old walls, including those of historical and artistic interest, or new stone, brick, tuff and mixed constructions as long as they are clean and solid and free of loose parts, dust, dirt, mould and soluble salts. If not, remove all loose parts and foreign bodies which could compromise the bond of **Mape-Antique NHL Eco Intonaco** either manually or mechanically. Then 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.
If weak substrates need to be consolidated, apply a number of coats of **Primer 3296** or **Consolidante ETS** or **Consolidante 8020** (refer to the relevant Technical Data Sheets).
Voids and uneven areas in the masonry must be repaired by patching or tacking with **Mape-Antique NHL Eco Strutturale** or **Mape-Antique NHL ECO Strutturale 10** or **Mape-Antique Allettamento** or **Mape-Antique NHL Eco Restaura**, as a base mortar, with pieces of stone, brick or tuff with similar characteristics as possible to the original material.
In the case of particularly difficult walls, such as stone and mixed or porous or mechanically weak walls, we recommend applying an initial 5 mm thick layer of **Mape-Antique NHL Eco Rinzaffo** or **Mape-Antique Rinzaffo** in order to even out the absorbency of the substrate and improve the bond of the render.

If large surfaces need to be rendered, we recommend applying the product with a continuous-feed rendering machine and to place vertical shims on the walls to check that the render is even and flat.
On masonry work where rebuilding work is required, the substrate must be wetted with water before applying **Mape-Antique NHL Eco Intonaco**, while old walls must be saturated to avoid particularly absorbent substrates drawing water from the render 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 it is not possible to saturate the substrate with water, we recommend that it is dampened in all cases to permit **Mape-Antique NHL Eco Intonaco** to bond correctly.
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. The mesh must be fixed in place to the wall with nails, chemical anchoring (such as **Mapefix VE SF**) or plugs with a small gap between the wall so that it becomes embedded in the middle of the layer of render.

Preparation of the product

Mape-Antique NHL Eco Intonaco must be prepared in a cement mixer if it is to be applied by trowel or in a continuous-feed rendering machine if mechanical application is preferred. The product is also suitable for application using manual techniques, but we recommend using a rendering machine to apply the product on large surfaces to obtain a better yield. Small amounts of the product may be prepared using a low-speed electric drill with a mixing attachment. Mixing by hand of the product is not recommended.
The instructions for the preparation of the render to be used for the creation of concrete samples for laboratory tests are reported in the TECHNICAL DATA table.

Application of the product

Application with rendering machine

Pour the contents of the bags of **Mape-Antique NHL Eco Intonaco** into the hopper of a continuous-mix rendering machine and set the water flow-rate at approximately 330 l/h, depending on the type of mixer (rotor/stator) used, until a “plastic” consistency is obtained.
The render may be applied with single-phase or three-phase continuous rendering machines equipped with a mixer (rotor/stator) that is suitable to the maximum nominal diameter of the aggregates in the render, which is mentioned in the product's TDS.
Note: differences may arise compared to the figures in the TECHNICAL DATA (typical values) table included in this TDS, according to the conditions at the time of product application and the rendering machine used.
If an initial 5 mm thick layer of **Mape-Antique NHL Eco Rinzaffo** or **Mape-Antique Rinzaffo** has been applied, wait until the product starts to set and then apply a single layer of **Mape-Antique NHL Eco Intonaco** (max 30 mm) starting from the lower part of the wall and working upwards.
If the thickness required is more than 30 mm, **Mape-Antique NHL Eco Intonaco** must be applied in several layers. Each layer must be applied without tamping the previous layer.
We recommend applying the render from a distance of approximately 20 cm so that the product is applied evenly. 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 shims which were previously attached to the wall and fill the spaces with the same mortar.
Finish off the surface of **Mape-Antique NHL Eco Intonaco** with a plastic, wooden or sponge float a few hours after application, according to the surrounding temperature and conditions.
Even though **Mape-Antique NHL Eco Intonaco** 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 mortar, 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.

Application by trowel

The product is particularly recommended for mixing and application using a rendering machine, although it may also be mixed in a cement mixer and applied by trowel. In this case, it is more difficult to apply the mortar because of the cohesive nature of the mix.
After pouring a minimum amount of water in the mixer (approximately 4.75 litres per 25 kg bag of **Mape-Antique NHL Eco Intonaco**), slowly pour the powder in a continuous flow. Mix for approximately 2 minutes and check that the blend is well mixed, even and free of lumps and remove all the material which has stuck to the walls of the mixer. Add a further amount of water if required up to a maximum total of 5.25 litres per bag of product, including the water added at the start of mixing. Then complete preparation of **Mape-Antique NHL Eco Intonaco** by mixing for a further 1-2 minutes, according to the efficiency of the mixer, to obtain an even, "plastic" and thixotropic mix.
Apply **Mape-Antique NHL Eco Intonaco** in layers of up to 30 mm thick per layer, starting from the lower part of the wall.

Squaring the render

Levelling the render

FINISHING

If a finer-grained surface finish than the normal tamped finish of **Mape-Antique NHL Eco Intonaco** is required, apply a layer of **Mape-Antique NHL Eco Restaura** or a smoothing compound from the **Mape-Antique NHL Eco Rasante** or **Mape-Antique FC** ranges, cement-free smoothing and levelling mortars of different grain sizes. If the surface of the render is to be smoothed off and then decorated or protected, use thin layers of a coloured coating product such as **Silexcolor Tonachino** silicate finish or **Silancolor Tonachino** siloxane finish after priming the surface with a primer from the corresponding ranges of products (**Silexcolor Primer** or **Silancolor Primer**).
As an alternative to the products mentioned above, if the surface of the render is to be painted, use **Silexcolor Paint** or **Silancolor Paint** after applying their corresponding primers.
Always wait until the render is completely cured, usually approximately 7 days per cm of thickness, before applying any type of thin-layered coloured coating product or paint.
If the render is not going to be painted or coated, especially 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

Mortar which has not yet hardened may be washed from tools using water. Once hardened, cleaning is much more difficult, and must be carried out mechanically.

PACKAGING

25 kg bags.

CONSUMPTION

Approx. 14.5 kg/m² (per cm of thickness).

STORAGE

12 months in its original sealed packaging.
Mape-Antique NHL Eco Intonaco is available in special vacuum-packed polyethylene sacks which may be stored outside for the entire construction phase of the site. Rain has no effect on its characteristics.

SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

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.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY	
Definition according to EN 998-1:	GP
Appearance:	powder
Colour:	light hazel
Maximum size of aggregate (EN 1015-1):	1.4 mm
EMICODE:	EC1 Plus - very low emission

TECHNICAL INFORMATION FOR THE PREPARATION OF THE PRODUCT	
Mixing ratio:	100 parts by weight of **Mape-Antique NHL Eco Intonaco** with 20% of water
Preparation of the mix:	mix the product in compliance with the standard EN 1015-2

CHARACTERISTICS OF THE FRESH MIX (at +20 °C and 50% R.H.)	
Colour of mix:	light hazel
Consistency of mix:	thixotropic
Bulk density of mix:	1750 kg/m³

FINAL PERFORMANCE
In accordance with curing defined in test methods

Performance characteristic	Test method	Requirements according to EN 998-1 GP – CS II	Product performance
Compressive strength:	EN 1015-11	CS I (from 0.4 to 2.5 MPa) CS II (from 1.5 to 5.0 MPa) CS III (from 3.5 to 7.5 MPa) CS IV (≥ 6 MPa)	**Category CS II**
Bond strength to substrate:	EN 1015-12	declared value and failure pattern (FP)	**≥ 0.3 MPa** **Failure pattern (FP) = B**

Capillary absorption:	EN 1015-18	W_C 0 not specified W_C 1 ≤ 0.40 kg/(m²·min^{0,5}) W_C 2 ≤ 0.20 kg/(m²·min^{0,5})	**Category W_C 0**
Coefficient of permeability to water vapour (μ):	EN 1015-19	declared value	**μ ≤ 12**
Thermal conductivity ($\lambda_{10,dry}$):	EN 1745	chart value	**0.53 W/m·K (P = 50%)**
Reaction to fire:	EN 13501-1	Euroclass	A1

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.
The values declared in the TECHNICAL DATA table (typical values) were obtained in compliance with test methods and curing cycles defined in the technical standards referenced therein. Therefore, please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.
Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation. The most up-to-date TDS can be downloaded from our website www.mapei.com.
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