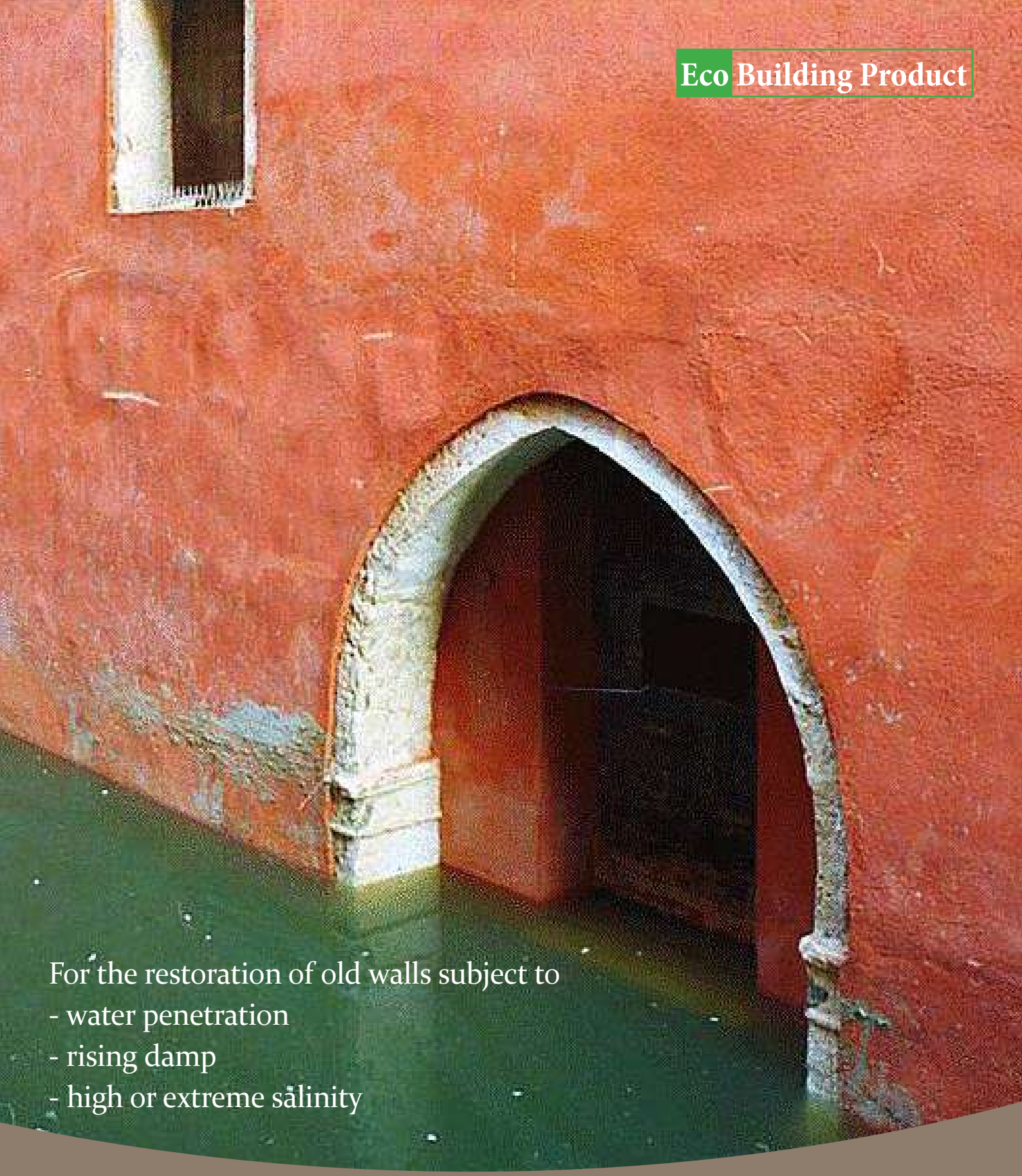


Eco Building Product

For the restoration of old walls subject to
- water penetration
- rising damp
- high or extreme salinity

MGN®

# Roman Waterproofing Lime Base Coat

# What is it?

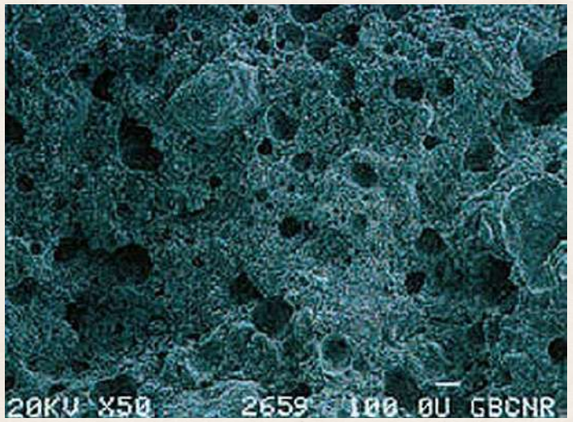
The Rinzaffo MGN salt-resistant waterproofing lime plaster has been developed near Venice in 1980 as a specialized solution to the problem of rising damp and salts in old masonry, however the origins of this technology stretch back to ancient Roman times.

Rinzaffo MGN is a **traditional pozzolanic lime mortar**, with high bonding power to wet surfaces. It guarantees a strong bond even on most difficult surfaces, consolidating the friable and degraded masonry.

Due to its unique pore structure it is **fully waterproof *yet* breathable**.

Being able to withstand all salts, it also **acts as a breathable salt-barrier**, keeping all salts in a semi-liquid state, preventing salt crystallization—a frequent cause of plaster detachment and deterioration of old masonry.

As a result it performs extremely well in very damp and salty environments (*cellars*, *basements*, *floors*, *facades*, *chimney areas* etc.) without breaking down. The surface of the plaster stays intact and dry **for decades**, and the appearance of the interior remains aesthetically pleasing.




Scanning electron microscope image of the Rinzaffo MGN base coat showing its unique micropore structure

Since its inception in 1980 it has been used extensively in the Venice lagoons withstanding very wet conditions and extreme saline aggression. **After 40 years of service**, it still performs extremely well without breakdown or structural damage despite of being periodically submerged into the "high waters" of the Venetian tides.

The performance of the plaster is still being actively monitored today in order to assess its aging and to make continuous improvements to the product.

### Ecological

Fully breathable. Made from natural raw materials with no added chemicals or cement. It does not require the use of salt neutralizing (anti-sulphate or anti-nitrate) chemicals.

### Long lasting

Because it can withstand the effects of salts and dampness for a long time without breaking down.

Typical application example of the Rinzaffo MGN lime plaster in Venice: degraded, salty masonry in direct contact with water

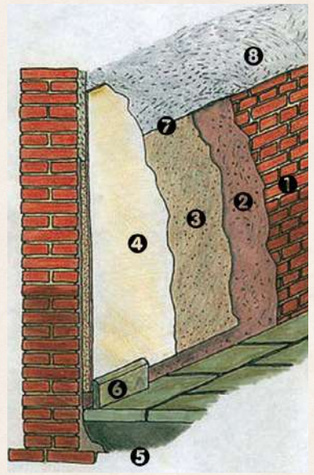
### Does not create static stress

Because it regulates the evaporation of humidity from those old walls that over the centuries have reached a static equilibrium. The controlled evaporation ***gradually*** lowers the moisture level of the walls until a new equilibrium is reached.

# Areas of Application

Because the plaster is **both waterproof and breathable**, it is suitable for **specialist applications** such as:

- **A base coat** for replastering after *rising or penetrating damp*
- **A render** against *driving rain*
- **A lime-based "tanking slurry"** to make *basements or cellars waterproof*
- **A plaster** against the damp patches or the crystallization of salts around *old fireplaces and chimney stacks*, a frequent problem in old buildings
- **A waterproof floor base** to prevent flooding in *pressure water* or *high water table* situations




1. Wall with tide mark
2. Rinzaffo scratch coat
3. Main coat
4. Skim coat
5. Rinzaffo MGN applied under the floor
6. Plaster raised from ground
7. Height of application: 1m above the tide mark
8. Existing good plaster, or in need for reconstruction

# How to Apply it?

### 1. Preparation of the wall fabric

Remove any loose, damaged or salty plaster. Clean the masonry (e.g. by using a pressure washer) to remove any salts, powders and oils. Before application, make sure that the masonry is sufficiently wet to ensure a uniform grip.

### 2. Application

Pour the contents of the package into a bucket or mixer adding **clean water only**. Do not add any other materials or additives. Mix it for about 3-5 minutes until a homogeneous, creamy paste is obtained.

On freestanding walls apply a 8-10 mm coat (not less than 5 mm), covering the whole surface, **leaving no gaps**. For undeground areas with earth-toucing walls apply 2 coats toalling about 15 mm, with a fiberglass mesh in-between. Wait 24 - 48 hrs between subsequent coats.

**Darker spots** of the first coat indicate areas of insufficient thickness for the plaster. Patch them up with additonal Rinzaffo before applying the next coat.

Dark patches indicate areas of insufficient thickness

Uniform color indicates good coverage

### 3. Applying the subsequent Main Coat

After the Rinzaffo scratch coat has dried, apply a first coat of traditional macroporous lime plaster (such as **Calcina Bianca**, **Sanacolor 2000**). Apply the first layer and level the surface. Wait to dry then apply a second coat and level the surface. Leave enough time between the application of each layer. (24-48 hrs)

For a smooth finish apply a finishing plaster (such as **Calcina Fine MGN** or **Intonachino Arenino MGN** colored finish) and use breathable mineral paints.

1. Plaster damaged by water and salts. Analyze the causes and assess the extent of the problem.

2. Remove the damaged plaster to about 1 meter above the affected areas. Remove all loose materials. Replace crumbly or degraded bricks.

3. Wash or pressure wash the affected surfaces to remove loose bits, grease and salt residues from the surface.

4. After the surface has been adequately wetted apply the RINZAFFO MGN scratch coat onto the entire surface in a 10 mm layer (min 5 mm).

5. Brush the plaster with a trowel to **close all gaps even small ones**. Then scratch the plaster to facilitate the adhesion of next layer.

6. Allow the RINZAFFO MGN scratch coat to dry. For wet areas repeat the process.

### Errors that can compromise the workability of the base coat

- Adding to the contents of the bags anything else than **just clean water**.
- **Not throroughly wetting the masonry** (as well as **subsequent coats**) before application.
- **Leaving any gaps or uncovered areas**, impairing its waterproofing or salt-blocking effectiveness.
- Applying a **too thin** Rinzaffo MGN base coat, less than 8-10 mm.
- Not applying the base coat directly onto the wall fabric but on top of an another coat.
- Applying on it non-breathable main plasters or finishes (with a breathability ratio lower than 230 g/m$^2$ in 24 h).

# Composition

- **Natural hydraulic lime** NHL 3.5, certified to EN 459-1 standard
- **Natural volcanic pozzolans** certified to EN 197-1 standard
- **Marble powders** certified to EN 12620 standard
- **Washed river sands**, free of salts and impurities, with controlled grain size, certified to EN 139139 standard
- **Traditional additives** (e.g. fats, proteins etc.)


# Specifications

- **Supply**: premixed mortar in powder form
- **Packaging**: in 25 kg paper bags
- **Composition**: natural hydraulic lime, pozzolanic hydraulic binders, marble powders, silica sand, natural organic additives
- **Color**: dark brown
- **Water ratio** (indicative): 4.5 – 5.5 liter per bag for when mixing in a mixer.
- **Application temperature**: between 5 – 30 °C.
- **Storage**: the product can be stored for 6 months in a dry environment.
- **Precautions**: strictly comply with the indications contained in this technical data sheet. If in doubt consult our technical service.
- **Safety**: due its natural lime content, the components are alkaline materials. The use of a mask and gloves during its use is recommended. In case of accidental contact with eyes, wash abundantly with water and consult a doctor.

# Technical Data

- **Granular size**: 0 - 5 mm
- **Cement content**: none
- **Chemical additives**: none
- **Bulk density**: 1,780 Kg / m$^3$
- **Total porosity**: 28.6%
- **pH**: 10.5
- **Vapor diffusion resistance** μ: 14
- **Thermal conductivity** λ: 0.92
- **Flexural strength**: 2.0 N / mm$^2$
- **Adhesion**: 0.4 N / mm$^2$
- **Capillary water absorption**: W1
- **Fire resistance classification**: Class A1

### Consumption

- Approx 16.0 kg/m$^2$ (per cm)

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