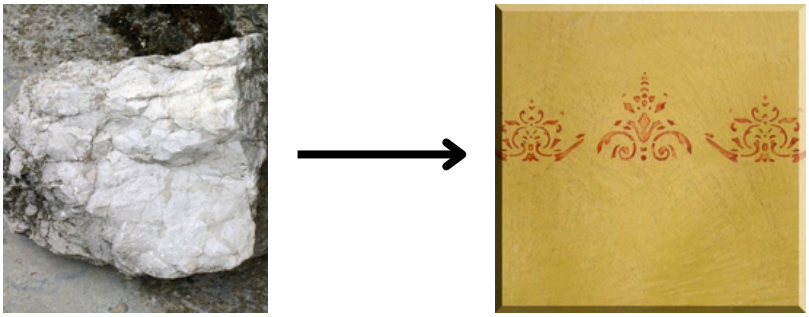
PRODUCT DEFINITION

The Powdered MARMORINO MEDIUM is a classic marmorino stucco with a greasy lime CL90 S UNE-EN459-1:2001 (calcium lime free of impurities) base and marble sands of a maximum granulometry of 0.5 mm, which is used for making decorative plasters.
It is based on the binding action of the greasy lime plaster, obtained by the calcination at 900°C of pure limestone (95% calcium carbonates), releasing carbon dioxide (CO2) in this operation.

Limestone + Heat ⟷ Calcium Oxide + CO^2

When we add water to calcium oxide (slaked lime), we transform it into powder or paste calcium hydroxide, depending on the amount of added water. After mixing the stucco; lime + marble sands and applying it on the surface, when in contact with the atmosphere, it starts recovering the CO^2 that the lime lost in the furnace, turning again into calcium carbonate, the stone from which it once came.



The stuccos differ from the mortars, also the lime ones, mainly in two points:

- The proportion and type of lime, much more paste and grease in stuccos than in mortars.
- Marble sand is always the aggregate type in stuccos.

With this stucco, traditional finishes can be developed, such as: smooth washed, pitted, dry fresh, sgrafitted..., but also other contemporary ones, adapted to new ways of conceiving space and decoration like concrete plaque simulations, two-colour, abstract effects, cortex steel simulators, or metallic finishes. The MARMORINO MEDIUM stucco has not lost its traditional identity by using in its composition greasy lime, marble sand and powder, and adding very low amounts of organic additives (<5%) so as not to lose its mineral identity (89%) but which presents adhesion on unusual surfaces for this type of stucco and new building solutions; cardboard - plaster, sprayed plaster, perlite plaster, additive mortars, wedi panels, painted surfaces and wood shavings post-formed (MD, OSB, and other particle boards).

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SUGGESTED APPLICATIONS

- Wall decoration in hotels, offices, shops and malls, school-nurseries, hospitals, museums, etc.
- To be a continuous mineral finish.
- Flame retardant (due to its mineral nature).
- Breathable (permeable to water vapour molecules).
- Due to its crystalline structure, it reflects the radiations of light and heat.
- Aseptic (high alkalinity, pH 11.5).
- Antistatic.
- Magnificent ageing, as the action of environmental CO^2 hardens it progressively.
- High resistance to rubbing/wear.
- Low thermal spread.
- In its simpler finish technique, the burnished smooth, the stylistic contrasts are well resolved, and decorations are not conditioned.

PHYSICAL LOCATION

Indoor-outdoor, even in aggressive indoor environments (wash rooms and kitchens), with the suitable protections that we indicate later. Although the stucco is very hard, like many marbles, it is also absorbent. Thus, it needs a treatment to avoid the penetration of substances that affect its aesthetics.

TECHNICAL DATA

- PH: 11.5 ± 0.5
- Presentation: Single-component powder product to which water must be added and mechanically removed until it is completely homogenised.
- Bulk density of the powder: 1 ± 0.05 g/cm^3.
- Density of the mix with water (previously mixed): 1.75 ± 0.05 g/cm^3.
- Standard packaging: 14 KG containers.
- Mix (mixing powder + water): 14 KG of MARMORINO MEDIUM are prepared with 6-6.2 L of water. Pour in the necessary water first, then the chosen toner dye and finally the powder, homogenise-knead the mix using an electric mixer.
- Life span of the mix: 7 days, if it thickens as days go by, it can be corrected.
- Life span in container: approximately 14 months in stable environmental conditions +5°C (min.) and + 32°C (max.) without opening the tin or the bag containing the marmorino. Avoid frost and high temperatures.

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APPLICATION TECHNICAL DATA

- Finish: matt or high glossy, depending on the polishing (compacting) degree with the trowel in the finishing coat, for the traditional plastered technique. Other techniques may have different gloss levels.
- Colours: obtained from the colour chart dye toners, added to the neutral stucco (i.e. just as it appears on the container). Outdoors: only use the dyes/toners referenced in the colour charts as outdoors. For production of special colours, contact the technical-commercial department. For special façade colours (much more problematic with the colour difference between batches due to the difficulty for finding clear cuts on it when compared to indoors), calculate the material performance well (kg/m^2) so that the wall does not show two different batches in which there may be small differences in intensity and tint. In this event, it is best to find a clear cut to start on with the other batch and / or mix with the excess from the first (don't use up all of the first batch).
- Maximum thickness per coat: 1.5 - 1.7 mm.
- Interval between coats: 16 to 18 hours under 20°C and 55% relative humidity conditions. Do not let more than 5 or 6 days to pass by between coats.
- Drying: 48 hours until completely dry (20°C and 55% relative humidity). Progressive hardening by carbonation, after 30 days it presents a considerable hardness.
- Application tools: suitable trowel and spraying equipment. For large and fast works, the first coat of stucco can be applied using the roller, fresh smoothing with the trowel, for this application dilute 7-10% in water.
- Protections for the MEDIUM MARMORINO paste: in order to prevent penetration of dirt or other contaminants in certain locations, such as façades, bathrooms, transit areas, etc., it is necessary to apply any of our protective systems listed below:
  - STUCCO WAX: indoors
  - SINGLE-COMPONENT WATER-BASED VARNISH: indoors and outdoors
- Check the technical data sheets of each protection to place them correctly, learn the application techniques, and to use suitable materials.
- If you have any questions, please contact the technical-commercial department.

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APPLICATION CONDITIONS

- Previous preparations: surfaces must be dry, firm/set up, well adhered, free of salts, free of any biological contamination such as mould, algae, lichens, free of environmental contamination (grease stains, soot, substances of unknown nature, etc.); i.e., free of any visible or invisible substance or contaminant that prevents the perfect attachment and finish of the Marmorino or its previous primers, if any.
  - Indoor ceramic surfaces: apply GRIP PRIMER. Apply UNI REPO, then CEMENT PRIMER, and then MARMORINO MEDIUM.
  - Cement, lime or mixed wall plasters: clean the dust and be sure that surface is not gritty and is set up, apply 1 or 2 coats of PRIMER FINE QUART before applying MARMORINO MEDIUM.
  - Concrete, special mortars: it is necessary to be careful with the additives it contains and try to learn about its nature to make a good prescription (release agents, anti-retraction agents, antifreeze, plasticising admixtures, setting accelerants, plasticisers ...).
  - Cardboard/water-resistant plaster, normal and flame retardant: apply 1 or 2 coats of PRIMER FINE QUART, let dry and apply MARMORINO MEDIUM.
  - Emulsion paints (matte or satin latex paints) (on these surfaces the application can only be performed indoors): verify that they are well adhered and do not have any problems. Apply 2 undiluted coats of ISOLATING PRIMER, leave to dry and apply MARMORINO MEDIUM.
  - Synthetic enamels, polyurethanes (on these surfaces the application can only be performed indoors): verify they are well-adhered, that there are no problems, and that at least 1 month has passed: clean in depth, apply 2 coats of PRIMER FINE QUART, and then apply MARMORINO MEDIUM.
  - Granites-marbles: apply 2 coats of PRIMER FINE QUART and then MARMORINO MEDIUM.
  - Ceramic vitreous tile (glass tiles with joints): apply GRIP PRIMER. Apply UNI REPO, then CEMENT PRIMER, and then MARMORINO MEDIUM.
  - Sprayed plaster and perlite plaster without fine plaster finish: clean the dust and be sure that the surface is not gritty and is set up, carefully checking that no other problems are present. Apply INSULATING PRIMER, if necessary, before PRIMER FINE QUART. Let dry and proceed with MARMORINO MEDIUM.
  - Plasters with fine plaster finish: the same as the previous case.
  - Wood shavings boards (waterproof MDF): apply 2 coats of undiluted ISOLATING PRIMER, leave to dry and apply the MARMORINO MEDIUM.

GENERAL OBSERVATIONS

- Working temperature, both ambient and surface (outdoor-indoor): 7°C minimum and 32°C maximum (in reheated surfaces, slightly moisten with water), even if the temperature is 7°C in adverse weather conditions (abrupt temperature drop) do not apply the MARMORINO MEDIUM, because at this temperature it takes time to expel the contained water and it may freeze.
- It is advisable to provide adequate protection outdoors, in order to prevent pigment bleeding in high-toned colours when in contact with the rain, and also because of atmospheric pollution, in order to avoid fast dirtying in certain locations.

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- Outdoors, it can only be applied on parge coats of industrially produced mixed mortars, with no retractions, fissures, cracks, other defects that show any problem, and that have not received any final treatment or finish. Keep in mind that mortars made on-site using sand or Portland cement can present retractions for at least for 6 months. If the parge coat is slightly gritty, apply the CEMENT PRIMER beforehand, and if there are significant differences in the trowelled or smoothing (to avoid irregular absorptions) apply two coats of PRIMER FINE QUART.
- While the stucco is being applied outdoors (on façades), it must be protected from the direct action of water to avoid bad hardening of the coat or if the coat is hard, "colour bleeding" before being able to apply appropriate protection.
- In areas where there is moisture due to condensation (there is no break in the thermal bridge) our PRIMER FINE QUART and MARMORINO MEDIUM system should not be applied.
- Moisture coming from the interior, i.e. the water that the stucco can receive through the part where it adheres to the surface, can be a cause of its destruction.
- The presence of salts (sulphates, nitrates, chlorides, etc.) in the surface can be caused by the slow evaporation of water in the building materials (adverse weather) or can be due to the continuous presence of moisture in the wall (meteoric filtration, leakage in conduits - drainage and moisture due to rising damp). The first cause does not present any complications, the salts are washed and an optional anti-salt treatment can be applied with the subsequent application of our PRIMER FINE QUART and MEDIUM MARMORINO system. The second cause is a more serious problem that cannot be solved with surface treatments but with construction repair procedures. Therefore, if the causes are not repaired, we recommend that you do not use our MARMORINO MEDIUM stucco system.
- The MARMORINO MEDIUM can be reinforced with fibreglass mesh.
- Architectures of unprotected sharp edges must be adequately protected at the ending points: rain gutter, wall/roof-terrace joints...
- Also indoors, when before applying the stucco it is necessary to plaster or smooth gotelé, stippling paste or other textures, use an outdoor spackling because the strength of the stucco can detach a less resistant spackling.
- The facing must be very flat to avoid using excess material and prevent retraction cracking due to excessive coats.
- Avoid application outdoors, on horizontal surfaces, or inclined planes.
- When stuccoing wash rooms, rapid drying of the wall must be ensured by using good ventilation. This is essential to avoid rapid growth of lichens and mould.
- If small bubbles appear when burnishing, do not keep on pressing, continue and return when the area has hardened more.
- Before placing self-adhesive stencil templates to add decorative patterns or other types of masking, you should wait 48 hours for the stucco to harden.
- Once you have started a wall, don't interrupt the section to avoid joints.
- The resulting colour will be more or less intense depending on the amount of pressure applied to the trowel.
- Depending on the applicator, and as it is a handmade process, the final "drawing" may vary.

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- Large work surfaces should be carried out without joints. It is therefore necessary to carry out this work using teams with a sufficient amount of people, or, if applicable, planning the necessary quarterings.
- WIJS BV is exempt from responsibilities for damage and problems in regards to stains, detachment, lack of cohesion, exposures, produced by deficiencies of the direct surface or structure.

APPLICATION METHODS

There are many application methods with very different finishes. The technique used to develop our colour chart is described below. Once the surface is well prepared with the above indications we will move on to the application:

1. Apply an initial coat of MARMORINO MEDIUM using a stainless steel trowel. Leave to dry for 16-18 hours (20°C and 55% relative humidity).
2. Apply a second and third coat at the same time (fresh on fresh), i.e., as the stucco tightens (hardens) quickly, apply again on the last 1m2 approximately, using a small amount of fresh stucco to finish smoothing.
3. When approximately 12-14m^2 have been completed (it depends greatly on weather conditions), and the stucco has lost almost all the water, go back to the beginning and, using a clean trowel, embed the sands and finish smoothing, with the aid of a water spray gun (vaporiser, sulphating machine), slightly wetting the surface to be burnished, if necessary, when the stucco is too dry.

- Cleaning of tools: water. Dry material residue on the tool will be removed using sandpaper.
- Washability: excellent after 28 days, but as the material is absorbent, it becomes necessary to apply some of our protective systems.
- Precautions: as it is alkaline material, protect skin and eyes.
- Theoretical performance: depending on the product's roughness, planimetry and absorption.

Product	Square metres	Number of coats
2.2 - 2.4 KG	1	2





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TECHNICAL DATA OF THE APPLIED AND DRY MATERIAL

- Hardness: 116 Shore C units after 30 days.
- Resistance to flexo-traction (UNE-EN 196-1:1996):
  - 2.4 N/mm^2 after 1 day
  - 4.9 N/mm^2 after 7 days
  - 7.9 N/mm^2 after 28 days
- Resistance to compression (UNE-EN 196-1:1996):
  - 4.4 N/mm^2 after 1 day
  - 8.4 N/mm^2 after 7 days
  - 13.6 N/mm^2 after 28 days
- Adhesion: 5.8 KG/cm^2
- Resistance to abrasion: excellent after 30 days
- Water vapour permeability: Sd = 0.34 m (KNUDSEN)
- Refraction to light in white colour: 81%

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