FTC-O18

Medium Microcement

PRODUCT DESCRIPTION

High performance hydraulic micromortar made from calcic cements and marble sands of different grain sizes, aside from other additives that, mixed with the above, furnish it with magnificent physical, chemical and aesthetic properties.

It is used to produce highly decorative continuous lining that has a cement and mineral-like appearance; on floors, walls, bathtubs, sinks, and so on.

It is inspired by Tadelakt, an Arabic word that means tight and burnished earth or plaster and refers to the use of the technique/material, employed in North Africa, although its origin and circulation are situated in the Roman Empire.

- Note: mortars or hydraulic linings are those that set when they come into contact with water and atmospheric linings are those that set when in contact with air.

SUGGESTED USES

Wall and floor decoration in hotels, offices, business premises and shopping centres, schools and nurseries, hospitals and museums. The product offers magnificent qualities, including:

- The provision of a continuous lining.
- Fire-resistance (due to its mineral nature).
- Breathability (permeable to molecules of water vapour).
- Due to its crystalline structure, it reflects light and heat radiation.
- Aseptic (high alkalinity of 12.5).
- Anti-static.
- Low allergenic levels.
- Excellent aging, due to the action of the CO_2 it becomes progressively harder.
- High resistance to rubbing/wear.
- High adhesion.
- High flexibility for a mineral lining.
- Low thermal diffusion.
- In its most basic finishing technique, smooth burnishing, it blends the stylistic contrasts well and does not affect the decorations.

- The possibility to use it on combined areas, as we can use the same decoration on floors and walls.
- Clean on-site and not overly complicated procedure, in comparison to other systems/materials.

PHYSICAL LOCATION

Indoors and outdoors, indoors it can even be placed in aggressive environments (bathrooms and kitchens) with the appropriate protection product detailed below. Although MEDIUM MICROCEMENT is very tough, it is absorbent like many marbles and/or stone materials and consequently requires treatment to prevent the penetration of substances that affect its aesthetic.

TECHNICAL INFORMATION

PH: 12.5 ± 0.5

MIXTURE DENSITY: 1.8 ± 0.05 g/cm^3

PRESENTATION:
1 container with Component A, in powder form.
1 container with Component B, in liquid form.

SOLIDS CONTENT AFTER MIXING THE TWO COMPONENTS: 76%

PACKAGING:
Component A, 17 Kg.
Component B, 4.4 Kg.

SHELF LIFE:
Approximately 14 months unopened, in stable atmospheric conditions, + 5 ºC (min.) and + 32 ºC (max.). Keep away from freezing and high temperatures.

LIFE OF THE MIXTURE: From 5 to 6 hours in the container.

TECHNICAL APPLICATION DATA

FINISH:

Matt or high satin finish, depending on the amount of polishing (compacting) of the finish layer with the trowel.

COLOUR:

20 obtained from the TONERS/TINTS from the Colour Range, added to the neutral MEDIUM MICROCEMENT (i.e., as it appears after mixing).

Other colour references that can be used from our Colour Ranges are:

When using indoors:

- From Venetian to Lime Range, the Toners/Tints no. 033, 039, 040, 041, 042, 043, 044, 047, 048, 049, 051, 052.
- Fine Marmorino Range Toner/Tint no. 046.
- Venetian Classic Range Toners/Tints no. 001, 009, 010, 011, 012.
- Venetian Roller Range the Toners/Tints no. 055, 059, 061, 064, 065.

When using outdoors:

- Medium Roman Marmorino Range the Toners/Tints no. 076, 078, 079, 081, 082, 086.

*__Note__: To achieve the colour intensities shown in these Colour Ranges, 3 200ml Toner/Tint containers have to be added to the MICROCEMENT (mixture of Component A + Component B = 21.4 Kg.), as it has to be taken into account that upon application of the chosen protection product, the final tone increases (wet effect), except in the case of the Protector for Stuccos and Mineral Supports.

DISSOLVENT: Water (if water is added, dilute all of the containers by the same amount).

The mixture of Component A + Component B gives a relatively pasty/thick mortar so that it can be applied well to “vertical” areas (walls) and to avoid it detaching, as we can always dilute it with water in other types of applications, for example on floors for a more dynamic application.

To apply a layer by spilling and levelling with a trowel or finishing trowel, dilute with 5% water (approximately 1 litre).

If you choose an intense colour, the MEDIUM MICROCEMENT shall remain sufficiently fluid with the addition of Toner/Tint, and it shall therefore not be necessary to dilute it with water, or use only 3% water if it becomes necessary.

MAXIMUM THICKNESS PER LAYER: 3-4 mm.

TOTAL NECESSARY THICKNESS: From 2.5-3mm, so that the material has the ideal qualities of mechanical resistances and good cohesion, i.e. 2 layers of 1.5mm ± or 3 layers of 1mm.

This condition is obligatorily applicable to floors and façades.

INTERVAL BETWEEN LAYERS:

- "wet on wet" technique:
  This involves applying one layer on top of another when the first layer has set/hardened but is still wet (this is only possible with hydraulic mortars as in this case, or with thick atmospheric mortars). The on-site procedure is easy and quick but the sum of all layers applied provides less thickness overall than the "wet on dry" technique does.
  *The hardening/setting of the material applied on the wall or floor (depending on the absorption of the support and thickness of the layer); can oscillate between 1h 30 min and 2 hours.
- "wet on dry" technique:
  One layer is applied over another once the prior layer has dried, over 20-24h at 20ºC and with a relative humidity of 65%.

DRYING:

48 h (20ºC with a relative humidity of 65%). Progressive hardening due to carbonation, after 30 days it is very hard.

PRIOR PREPARATION:

The supports must be dry (the calculation for plaster and stucco is 1 day of drying per 1-1.5mm of thickness, at 20ºC with a relative humidity of 65%) and free from any impurities such as mildew, algae, lichen, environmental contaminants (grease, soot, etc.) and salts. In other words, they must be free from any visible and invisible substances (waxes, silicones contained in cleaning or construction products, etc.). In addition, it is necessary to adequately consolidate incohesive supports (gritty, dusty, crumbling).

APPLICATION TOOLS

1st layer with trowels, finishing trowels and adequate protection equipment. Intermediate and last coats with stainless steel trowels.

APPLICATION CONDITIONS

Direct supports

- On outdoor walls and interior-exterior floors, **it can only be applied to industrially manufactured mortar renderings and supports and shall fulfil regulations according to use/function to avoid dosing errors during application resulting in shrinkages and detachments.**
- **If the rendering or support is slightly gritty, apply the ULTRA FINE PRIMER (binder) first.**
- **The presence of salts (sulphates, nitrates, chlorides, etc.) and old stains from damp in the support may result from the slow evaporation of water in the construction materials (adverse weather) or due to the continuous or seasonal presence of moisture in the wall (rising damp, leaking pipes – drains and moisture of a capillary nature). The first cause is easy to remedy, the salts are washed away and an anti-salt treatment can optionally be applied. The second cause is a more serious problem that cannot be solved by means of surface treatments, instead requiring the repair of the building. Consequently, if the causes are not resolved, we do not recommend the use of our MEDIUM MICROCEMENT system.**
- In areas where there is moisture due to condensation (though an unbroken thermal bridge) our **MEDIUM MICROCEMENT** system should not be applied.
- If the support has cracks, check whether they are static or dynamic. If it is found that the cracks are unstable or dynamic as a result of structural problems, it is best not to use MEDIUM MICROCEMENT as a finish. If it shows signs of cracking due to mortar shrinkage, calculate the length of time that it has been applied to know if the cracking has stopped.
- Also examine the specific parts of the building that correspond to areas where there is an accumulation of stresses deriving from its construction that could cause the appearance of cracks in the lining, such as: structural dilatation joints, meeting points between different materials (brick and concrete, forgework, pillars, beams, window frame supports, blind boxes, etc.).
- Exposed sharp edges should be duly protected at termination points: flashing, areas where the wall/frame meets the roof/tiles, etc.

- Moisture from inside, i.e., water that penetrates the microcement where it is attached to the support (negative pressure) can cause serious damage to such.
- **On walls, plasterboard panels, perlite plaster and gypsum products carefully clean the dust and generously apply one or two coats of** QUARTZ

PRIMER (if any deterioration of these supports is observed, apply PENETRATING PRIMER before the QUARTZ PRIMER).

- To apply MEDIUM MICROCEMENT on **composite wood products** (medium density chipboard, fibreboard), these must be hydrophobic if possible, and if not, apply the QUARTZ PRIMER, the MULTIUSE PRIMER or the Anti-water stain primer beforehand, in order to prevent stains from the redissolution of certain compounds that can appear with these materials or the detachment or expansion of these composite wood panels.
- On walls over **painted supports** indoors, carry out an adhesion and resistance test before applying the QUARTZ PRIMER and then apply the MEDIUM MICROCEMENT as the moisture of the material can make the paint peel off the support if it is not properly attached.
- Also on inside walls, in cases where, before applying the MEDIUM MICROCEMENT, a popcorn finish, compounded paste or other textures have to be polished or smoothed, use an outdoor putty, as the strength of the stucco could cause less resistant putty to detach. Another option would be to apply the Microcement directly.
- Medium Microcement can be applied to indoor ceramic supports (floors and walls) and those that are well attached to the support. Note the possible "rough edges" on these types of linings that normally tend to appear at the corners of the tiles.
- The wall must be smooth and flat to avoid excessive use of material and cracking due to shrinkage caused by excessive thickness.
- When working outdoors (façades), whilst the MEDIUM MICROCEMENT is being applied, direct exposure to water should be avoided to prevent "bleeding of colour" before the appropriate protection product has been applied.
- To increase and level renderings, use industrially manufactured (well formulated) mortars that fulfil regulations, and that are appropriate for the construction in question in order to avoid shrinkages and other problems, with the correct prescription and on-site procedure, i.e. they have to be moderately flat, dry and joined. In the event of having to use low density levelling pastes, use those that have high adhesion and hardness properties, whether on ceramic or other linings.

Indirect supports

We have attached a series of observations to achieve on-site procedure results within the satisfactory period of time:

- **Structural dilatation joints.**
- **Type of structure, walls, floors, etc., of the building or construction.**
- **Existence of problems; moisture, cracks, etc.**

- **Location and use of the building.**

Working temperature of both the environment and the support (indoor-outdoor)

Minimum of 7ºC and maximum of 32ºC (slightly moisten hot supports with water). Even if the temperature is 7ºC, do not apply the layer of Medium Microcement in adverse weather conditions (sudden drop in temperature) because at this temperature, it takes time to expel the water contained and it can freeze.

General observations

- When plastering bathrooms, there must be good ventilation for the wall to dry quickly and to avoid the fast proliferation of lichen and mildew.
- Before putting the self-adhesive stencil template in place for the creation of decorative motifs or other types of masking, wait until the render has hardened.
- When working outdoors, it is necessary to apply the appropriate protection product (described below) to prevent bleeding of bright colours due to contact with rainwater and rapid tarnishing in certain locations due to environmental pollution.
- If applied to special types of concrete or mortar, be careful with the additives contained and try to find out about these in order to make the right choice (release agents, anti-shrinking agents, anti-freeze, thinning agents, set accelerators, plasticizers, etc.).
- If indoor and outdoor walls and floors have obvious problems (moisture of a capillary nature, moisture due to condensation, moisture due to filtration, movement of the support, etc.), do not apply this material before they have been resolved or the treatment has been applied to solve these problems.
- Respect structural dilatation joints.
- If the functional or decorative quartering is carried out using masking tape, remove it before the Microcement has set, if they are PVC or polypropylene bolted moldings, this is not necessary.
- Intense colours can dilute the mixture.
- They are not suitable for continued immersion in water.
- Floors made with Microcement only permit human traffic/transit.
- When flattening/compacting is carried out on light colours with the trowel, the steel element of the trowel can make them appear “grey”, although it does not hinder its aesthetic characteristics, as the process furnishes it with a cement-like appearance. In any case, this effect can be eliminated partially with abrasion/polishing or by using Fine Microcement, in the same colour, as a finish.
- This material can be refined (remove small imperfections and rough edges) with sandpaper number 320 and polished with number 600-800.

- In the production of bathtubs, sinks, and so on, the basin has to be fitted well; with the prior application of the appropriate mortar and brickwork to avoid leaks.
- In works on floors and walls presenting a large surface area, above all on the last layer, and that cannot be finished in one day, a layout or intentional partitioning shall have to be considered.
- Depending on the way it is applied, as it is an artisan process, the final "drawing" can change.

PROTECTION FOR MEDIUM MICROCEMENT

In certain locations, such as: façades, bathrooms, floors in general, shelves, corridors, etc., to prevent dirt or other contaminants and to prevent bleedings of colour from penetrating, one of our protection systems described below must be applied:

- **ACRYLIC PENETRATION PROTECTION/Floors and Walls.**
- **POLYURETHANE PROTECTION AGAINST WATER/Floors and Walls.**
- **PROTECTOR FOR STUCCOS AND MINERAL SUPPORTS/Floors and Walls.**
- **SILOXANE PROTECTION FOR MINERAL SUPPORTS 1/5-Walls.**
- **POLISHABLE WAX/Floors and Walls.**
- **SELF-POLISHING WAX/Floors and Walls.**
- **SOAP WAX/Walls, in this case indoors and away from direct exposure to water. It can be used to provide greater shine if necessary.**
- **COLOURED COLOURLESS WAX/Walls, with the same determinants as above.**

***Consult the technical descriptions of each protection product in order to use them correctly, study the application techniques and apply them to the correct material.**

If in doubt, consult our technical department.

When fitting sinks, bathtubs and so on, consult our technical department before carrying out the work.

APPLICATION METHODS

Although there are various methods of application with very different finishes, the following describes the on-site method "step-by-step", with photographs:

Preparation of the mixture of Component A + Component B.

1) Pour the liquid, Component B, contained inside the bottle, into the jar, the Toners/Tints can be added at this point (easier to mix) or after making the mixture.

2) The next step is to add the powder, Component A, little by little, mixing it with an electric mixer (at a high speed, if possible), mix the product well so that it has no lumps.

- The resulting mixture, without tinting, is slightly pasty so that when it is applied to the wall (vertical), it does not become detached. However, with some Toners/Tints, or some concentrations of such, it can become diluted and if not we can always add water to it to dilute as necessary.

1)  2)  2) 

Application system used

a) **Apply a first layer of MEDIUM MICROCEMENT with a stainless steel trowel.**

b) Apply a second coat simultaneously (fresh on fresh), i.e., when the 1st layer of Microcement has set/hardened even if it is wet.

c) Apply a 3rd layer (under the same conditions detailed in the point above) and once you have applied approximately 2-4 m^2 (depends very much on the weather conditions), and the microcement has hardened/set but without being dry, go back over it with the clean trowel to compact the grain and finish smoothing with the help of a water spray gun (vaporiser, sulphate sprayer) to gently moisten the surface to be burnished, if necessary, when the Microcement is too dry.

*** However, although here we have described the "wet on wet" process, it is also possible to work "fresh on dry".**

a 

b 

c 

d) **Once all of the layers have dried correctly, according to the data provided previously in the DRYING chapter, in this case we have proceeded with the application of the Polyurethane Protection against Water, using the airless sprayer, although one of the other protection products listed under the PROTECTIONS chapter can be used.**

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Application tips:

- **In the case of walls and floors with large surface areas, it shall have to be carried out by the appropriate teams (group of people) to complete the work without visible seams. Plan the quartering and/or layout of the site, if necessary, in order to avoid visible seams.**
- **When a wall or floor is started, do not interrupt the section, in order to avoid the appearance of visible seams.**
- **The amount of pressure that is applied when smoothing with the trowel determines the brightness of the colour.**
- **If the support is too warm it can be wet slightly with water, to avoid excessively fast absorption when the second layer is applied.**
- **If during smoothing, the material becomes too dry, it can be pulverised with a little water as the trowel is passed over it.**
- **If you are going to use ½ or ¼ of a container, carefully measure Component A and B so that they maintain the correct proportions.**

PERFORMANCE:

It is calculated in stuccos and mortars as 1.5 kg/mm/m^2 of thickness on smooth and flat surfaces, i.e. in the case of two layers of MEDIUM MICROCEMENT with a thickness of 1.5 mm, or in 3 layers of 1mm that could reach 2.5-3mm, the theoretical performance is 3 kg/m^2.

If the wall/surface has pockets (surface defects), or a rough texture, and is highly absorbent, consumption can be higher.

CLEANING OF TOOLS:

This should be carried out with water and, if the material dries on the tool, it should be removed with sandpaper.

TECHNICAL DETAILS REGARDING THE MATERIAL APPLIED AND DRYING

HARDNESS: 140 Shore C Units after 30 days.

RESISTANCE FLEXOTRACTION: (UNE-EN 196-1: 1996)	**TO**	3	N/mm^2 after 1 day.
		7	N/mm^2 after 7 days.
		8	N/mm^2 after 28 days.
RESISTANCE COMPRESSION: (UNE-EN 196-1: 1996)	**TO**	5	N/mm^2 after 1 day.
		12	N/mm^2 after 7 days.
		18	N/mm^2 after 28 days.

ADHESION: **8.5 kg/cm^2**

RESISTANCE TO ABRASION:
Excellent, following a minimum hardening period of 30 days.

PERMEABILITY TO WATER VAPOUR: S_d = 0.30 m (KÜNZEL)

REFRACTION OF LIGHT (WHITE): 80%

EASE OF CLEANING: Excellent after 28 days, but the material is absorbent and as such it is necessary to apply one of the protection products, in order to avoid the penetration of stains and dirt.

PRECAUTIONS: alkaline material, protect eyes and skin.