MANTI® ceramic

MANTI® CERAMIC
Application Manual

MŰSZER AUTOMATIKA

manti.hu

MANTI Primer Fix Adhesion Improving Concentrate

General properties:

MANTI Primer Fix Adhesion Concentrate is a water-based, solvent-free, thin-coat, stable, deep primer and adhesion promoter. It can be used as an adhesion bridge on various exterior and interior absorbent surfaces (plasterboard, plaster, brick, tile, concrete, etc.). It increases the strength of the absorbent surface, thus improving the adhesion of paints, adhesives and plasters. It is air and vapour permeable, equalises the different absorption of the surfaces, thus preventing staining during painting and ensuring uniform adhesion between coats.

Fields of application:

Surface preparation. The surface should be inspected, cleaned if necessary, loose, scaly coatings removed by brushing, spackling, sanding. Large surface depressions and cracks should be repaired by multiple coats of smoothing or patching. After drying, repair any sanding or patching defects by sanding or re-sanding or patching.

Product preparation. Mix the contents of the can with an appropriate quantity of water in a suitable container and mix thoroughly.

Use of the product:

The concentrate can be applied by brush, roller or spray. The deep primer should be fully absorbed into the pores and not form a shiny layer on the surface. The drying time of the surface is usually 2 - 4 hours, depending on the surface and the weather. Do not work in temperatures below +5°C, in rain or in hot summer sun! Clean tools and equipment thoroughly with water immediately after use!

Yield: 6 - 8 m^2 / liters (at 1:5 dilution)

MANTI Ceramic Architectural High Density

Thermal Protective Coating

General properties:

MANTI Ceramic Architectural High Density Thermal Barrier Coating is a ready-to-use, solvent-free, water-based adhesive that can be applied easily and efficiently using traditional gluing and spraying techniques. It forms a stable, well-adhered coating containing micron-sized vacuum ceramic spheres that provide excellent thermal protective properties.

It forms an air and vapour permeable, uniform coating, provides good adhesion on different surfaces, promotes natural ventilation of the building, reduces thermal bridges and thus reduces the possibility of mould growth. When applied in a thin layer, it can save heating and cooling costs while improving comfort. It is environmentally friendly and produces no hazardous waste.

Areas of application: residential, public and industrial buildings (halls), monuments, livestock and crop buildings, natural stone, concrete, brick, plaster and cement render, etc.

It can be used to create a smooth surface, on smooth base plaster, to smooth out unevenness in the plaster before painting, to repair small holes, cracks, joints and façade decorations. Recommended layer thickness 2 - 6 mm.

Surface preparation: The substrate should be inspected, cleaned if necessary, and loose, scaly layers removed by brushing, spackling or sanding. Deeper cracks should be filled with a flexible crack sealant and sanded after drying. Areas of the surface with different absorbency may stain after application of the coating, so prime the surface with solvent-free, air and vapour permeable **MANTI Primer Fixed Deep Penetrating Primer.**

Product preparation:

The contents of the bucket should be thoroughly mixed with a mortar mixer at low speed (100 - 150 rpm) until a completely homogeneous dispersion is obtained. The mixing time is usually 2 - 3 minutes, depending on the power and speed of the mixer.

Use of Product:

Starting from one corner, work towards the other corner. The first layer of glue is applied with a glue trowel with a maximum 3 - 4 mm tine, tilting the vertical surface at about 15°, working from the bottom upwards.

Allow the glued surface to dry, then remove any excess glue with a trowel of the same width as the applied layer. Smooth the second layer of glue into the first notched layer, using a smooth, notched trowel. Smooth the reinforcing mesh (plastic, glass fibre, glass veil, etc.) over the surface thus formed and smooth over with a thin layer of glue. Smooth out any unevenness with a sponge roller.

To build the next layer on the dried layer, use a smooth, toothless glue iron and apply the glue layer from the bottom up, smoothing it horizontally. Then, using the glue iron, smooth the surface in a circular motion until the desired result is achieved. If there are still holes, dents or scratches, correct them with a little glue and sand over after drying.

Sanding should be done with a sanding cloth and a hand or machine sander. Take great care to press the sanding cloth evenly onto the surface so that the surface is completely smooth. As a lot of dust will be generated, the wall should be thoroughly cleaned after sanding with a brush, damp cloth or sponge to keep as little dust as possible.

As a final finish, MANTI Ceramic Architectural Medium Density Heat Protective Thin Film Coating should be applied.

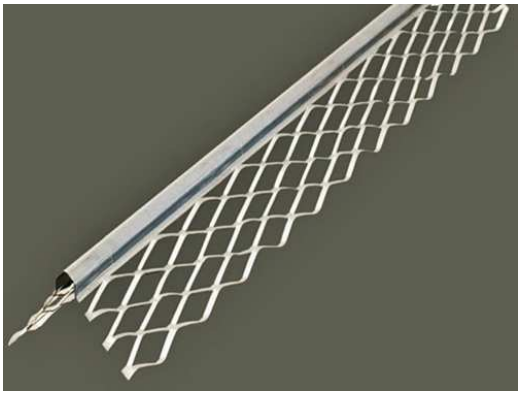
Yield: 1,0 - 1,2 liters / m^2

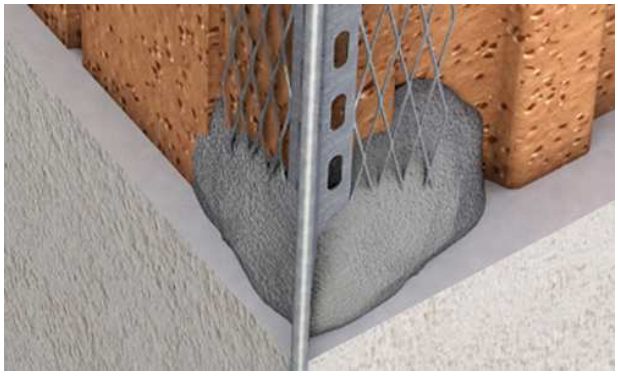
The tools needed for the implementation:

- masking tape
- mortar mixer
- notched or smooth glue iron
- iron with a suitable width (butterfly)
- spatula- sponge paint roller (smoothing roller)
- crown brush
- scrubbing brush
- sanding cloth
- hand or machine sander
- washing bucket
- washing sponge, brush
- edge protectors
- masking tape (self-adhesive paper or fibreglass reinforced)
- water

Protection of corners and edges: in places where corners and edges are likely to be damaged, it is advisable to prevent this by incorporating reinforcing pads to minimise damage.

Such corners should generally be made more protective by the installation of various plastic or, for greater protection, steel or aluminium corner reinforcements, either during the construction of the masonry or subsequently, before painting. For reinforcing corners, steel profiled plaster corner protectors with steel mesh at the edges, which can be embedded in plaster or render, are generally used. The edge protection of the corner is provided by a gently rounded steel plate, and the element is secured by embedding the mesh part of the edge in the plaster or render.

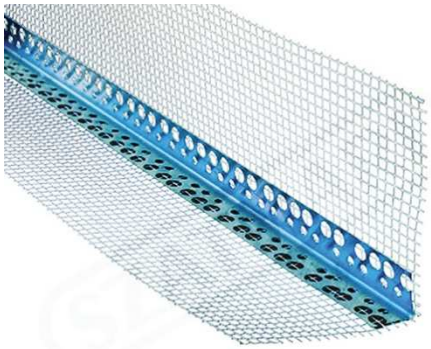




For plasterboard cladding, aluminium or plastic edge protectors can be used to great advantage to create the ideal corners, ensuring both correct and straight lines. They are also available in versions suitable for curved corners to facilitate the creation of unbroken and continuous curved edges.

Placement of Edge Protectors:

Edge protectors can be fitted on positive corners using aluminium, plastic or mesh reinforced ones to achieve straighter corners. For plasterboard surfaces, this is essential. Apply the edge protectors embedded in glue, work them properly and they will not be visible afterwards, they will be covered by paint or wallpaper.



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The edges of curved plasterboard surfaces can be made into unbreakable edges by incorporating bendable edge protectors.

Textured surfaces can also be created with special patterning rollers. Plaster is spread evenly over the wall with a wide dragging iron, and the desired pattern can be created by running the roller from the bottom up or transversely, pressing the roller evenly against the wall. Such textured walls require creativity and patience, considerable extra work for large surfaces, and success can only be assured with the right routine. If you want to experiment, try on a smaller surface first.

Product preparation: The contents of the bucket should be thoroughly mixed with a plaster mixer at low speed (maximum 200 rpm) until a completely homogeneous dispersion is obtained. The mixing time is usually 2-3 minutes, depending on the power and speed of the mixer. Take care that no air bubbles are formed in the product during mixing. If air bubbles are formed, reduce the mixer speed. The product can be diluted with up to 2 % deionised or distilled water if necessary.

Application by spraying: After proper preparation of the base surface and surfaces not to be painted with masking film or masking paper, the coating material can be applied. The coating material is applied by longitudinal and transversal spraying at a pressure of 150 - 180 bar with a nozzle 539 or larger. When spraying the coating, the spray gun is held perpendicular to the surface and moved horizontally back and forth and then vertically up and down in a uniform motion over the surface. The coating is then smoothed evenly over the resulting layer with a trowel of the appropriate size and, after the coating has dried, the subsequent layers are formed as described for manual application.

Recommended spray gun: Titan PowrTwin PLUS DI 6900

MANTI Ceramic Architectural Medium Density Heat Protective Thin Layer Coating

General properties:

MANTI Ceramic Architectural Medium Density Thermal Barrier Thin Layer Coating is a water-based, solvent-free, paint-like thin film coating containing micron-sized vacuum ceramic spheres that form a stable coating. Coated surface formation significantly reduces the thermal load from solar radiation, primarily due to the reflective and infrared emissivity properties.

It forms a uniform decorative, aesthetic coating that is air and vapour permeable, water repellent, provides excellent adhesion to a variety of surfaces, promotes natural ventilation of the building, reduces thermal bridges, thereby reducing the potential for mould growth. When applied in a thin layer, savings can be made on heating and cooling costs, while improving comfort. It is environmentally friendly and produces no hazardous waste.

Areas of use: Residential, public and industrial buildings (halls), monuments, livestock and crop buildings, natural stone, concrete, brickwork, plaster and cement render, wood, primed metal, plastic, etc., on exterior and interior surfaces.

Surface preparation: The surface should be inspected, cleaned if necessary, loose, scaly layers removed by brushing, spackling, sanding. Large surface depressions and cracks should be repaired by multiple coats of smoothing or patching. After drying, repair any sanding or patching defects by sanding or re-sanding or patching. Areas of the surface with different absorbency may stain after application of the coating, therefore, to even out the absorbency, prime the surface with solvent-free air and vapour permeable **MANTI Primer Fix Deep Penetrating Primer**.

Product preparation:

The contents of the bucket should be thoroughly mixed with a paint mixer at low speed (maximum 200 rpm) until a completely homogeneous dispersion is obtained. The mixing time is usually 2 - 3 minutes, depending on the power and speed of the mixer. Take care that no air bubbles are formed in the product during mixing. If air bubbles are formed, reduce the mixer speed. The product can be diluted with up to 5 % deionised or distilled water if necessary.

Use of the product:

An improperly applied coating will form an uneven, discontinuous layer, the thermal properties of which may significantly reduce the performance of the coating. The coating is applied in several coats to the surface using a special airless spraying system, by technicians participating in the training programme of Műszer Automatika Ltd., until the desired final coating thickness (1,0 - 1,5 mm) is achieved. The advantage of the spraying technique is that it provides uniform coverage even in hard-to-reach areas, at the bottom of corners, edges and cornices, thus reducing the risk of thermal bridging.

If the necessary work is not carried out by technicians trained by Műszer Automatika Ltd., it is necessary to ensure that the contractor has the appropriate machinery, tools and professionalism.

Recommended spray guns: Graco UltraMax II 1095

Titan PowrTwin PLUS DI 6900

It is important to always use appropriate safety equipment when working and to comply with the relevant health and safety regulations!

For outdoor applications, increased emphasis should be placed on repairing faults in the façade, as damage to the façade cladding of a building can occur during normal use or unplanned use. The repair of these is important because, depending on the extent of the defect, they can affect the usability of a building, reduce its durability or significantly increase its energy consumption.

The first step is to identify the type and condition of the existing materials, as only then can the repair material be selected.

In general, for load-bearing structures, the slightest failure or damage can have serious consequences if the problem is not properly identified. In some cases, structural defects in buildings - unplanned defects at the time of construction, such as splitting or shrinkage - must be taken into account. In most cases, structural defects are invisible, hidden or concealed and are only discovered during use or when the building is being renovated.

Before plastering and repairing concrete, make sure that the surface is sufficiently dry and that the temperature is at least +5°C. Inadequate conditions will slow down the curing time and negatively affect the final strength.

GRACO UltraMax II 1095 spray painting equipment:

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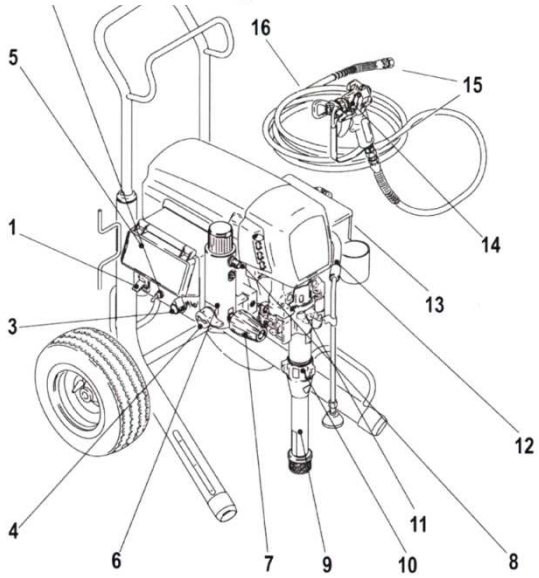
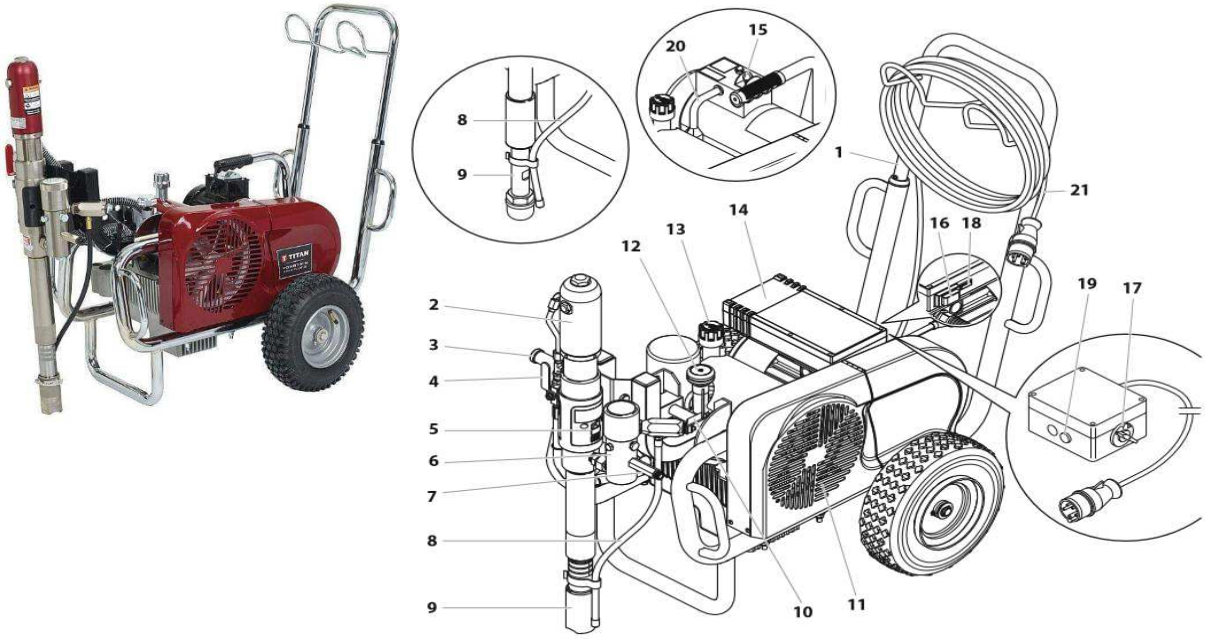


1	főkapcsoló	**9**	szívócsonk
2	biztonsági kapcsoló	**10**	pumpa
3	nyomásszabályzó	**11**	olajzó felület
4	váltószelep	**12**	túlfolyócső
5	kijelző	**13**	tároló
6	szűrőház	**14**	szórópisztoly
7	tisztító csatlakozó	**15**	tömlőcsatlakozók
8	tömlőcsatlakozó	**16**	tömlő

1	**main switch**	**9**	**suction stump**
2	**safety switch**	**10**	**pump**
3	**pressure controller**	**11**	**oiling surface**
4	**selector valve**	**12**	**overflow pipe**
5	**display**	**13**	**store**
6	**filter box**	**14**	**spray gun**
7	**cleaning connector**	**15**	**hose connectors**
8	**hose connector**	**16**	**hose**

Titan PowrTwin PLUS DI 6900 paint spraying equipment:



1	Pull-out handle	**12**	Pressure control knob
2	Hydraulic actuator	**13**	Oil level dipstick
3	Handle for turning the material pump	**14**	Electric motor (120/230/400 V)
4	Ball valve: - horizontal position: hydraulic actuator off - Vertical position: hydraulic actuation on	**15**	Main switch (400 V)
5	Oil separator	**16**	Main switch (230 V))
6	High pressure filter	**17**	Main switch (400 V)
7	High pressure hose outlet	**18**	Operation indicator light (230 V)
8	Venting hose	**19**	Operation indicator light (400 V)
9	Suction hose	**20**	Power cable (120 V)
10	Selector valve: - counter-clockwise: circulation - right-hand rotation: sprayout	**21**	Power cable (230/400 V)
11	V-belt (under cover)		

The working, servicing and safety instructions for the equipment can be found in the machine manuals!

Preparations and commissioning:

- After the bucket is opened, the material deposited on the sides is pulled into the material with a spatula.

- After opening, special care must be taken to avoid getting dirt into the bucket.

- Mixing is carried out with a paint mixer at a maximum speed of 200 rpm for about 2-3 minutes until the material is uniform and homogeneous. Be careful not to mix air into the material, do not foam it!

- Place the already mixed material under the suction nozzle of the spraying device. When preparing the machine, check the condition of the spreader hose. Then check the condition of the spray gun!

- When checking the electric cable of the machine, pay particular attention that the cable is undamaged, not torn, broken or wet!

- The pressure regulator must always be in position 0 when starting up!

- Check the status of the change-over valve so that it is always in the vertical position when starting up, so that when the spreader is started, the material to be spread is discharged into the bucket through the overflow pipe in the circulation branch.

- Turn on the main switch and, with the change-over valve in the vertical position, recirculate the material back into the bucket through the overflow pipe by gradually winding up the pressure regulator.

- Once the recirculated material is in the bucket, turn the pressure regulator to position 0, turn the change-over valve to the horizontal position and produce the desired spray pressure by turning the pressure regulator valve up with the spray gun closed. The pressure is then applied to the hose and, after the correct pressure has been set, the material can be dispensed by releasing the safety lock of the spray gun in accordance with the spray pattern previously established by the nozzle in the butterfly.

- At stops of more than 20 minutes between spraying operations, the nozzle of the spraying equipment shall be lifted out of the material to be sprayed and placed in a bucket containing water to avoid drying. Snap the top back onto the bucket containing the material to be sprayed.

Forming the coating: after the base surface and the surfaces not to be painted have been properly prepared with masking foil or masking paper, the coating material can be applied. The coating material is applied by longitudinal and transverse spraying in several layers at a pressure of 120 - 140 bar. The application of one coat is defined as an application cycle in which the spray gun is moved horizontally back and forth and then vertically up and down in an uniform motion over the surface.

The coating should spread evenly over the resulting layer, with no flow or drying. The coating applied to the wall surface in this way should be uniform in colour and drying, and should not show any visible cracks during drying. After the coating layer has dried, the next layer can be applied without any problems, giving a solid, uniform coating.

When spraying, always make sure that the spray gun is held perpendicular to the surface to be sprayed, at the distance defined by the nozzle, and that the spraying equipment maintains the operating pressure and spray profile without disturbance, as this is the only way to achieve a proper spray pattern. The spray radius must be uniform. If streaks appear in the spreading radius, the spreading pressure is too low. In this case, the pressure should be increased.

Always use appropriate protective equipment for work; disposable paper protective clothing, safety boots, gloves, goggles, respirator, mask!

MANTI Ceramic Technological Pore-locked Thermal Protective Coating

MANTI ceramic TECHNOLOGICAL

General properties:

MANTI Ceramic Technological M is a water-based, solvent-free, thin-coat coating containing micro-sized vacuum ceramic spheres that form a stable coating that can be applied as a thin layer like a paint. The surface formation of the coating reduces the thermal stress to solar radiation, primarily due to its reflectance and infrared emissivity. It is waterproof, provides extremely good adhesion to various surfaces, reduces thermal bridges. When applied in a thin layer, savings in heating and cooling costs can be achieved.

Application fields:

As a thermal barrier coating on metal surfaces for their thermal insulation. It can also be used to coat natural stone, concrete, brickwork, plaster and cement render, wood, etc.

Surface preparation:

The surface must be dry, dust-free, clean and free of oil, grease and other contaminants.
The surface should be inspected, cleaned if necessary, and loose, scaly layers removed by brushing, spackling, sanding. Any unevenness should be corrected by patching and sanding. When used on carbon steel equipment, a corrosion inhibiting primer is required.

Product preparation:

The contents of the bucket should be thoroughly mixed with a paint mixer at low speed (maximum 200 rpm) until a completely homogeneous dispersion is obtained. The mixing time is usually 2-3 minutes, depending on the power and speed of the mixer. Take care that no air bubbles are formed in the product during mixing. If air bubbles are formed, reduce the mixer speed. The product can be diluted with up to 2 % deionised or distilled water if necessary.

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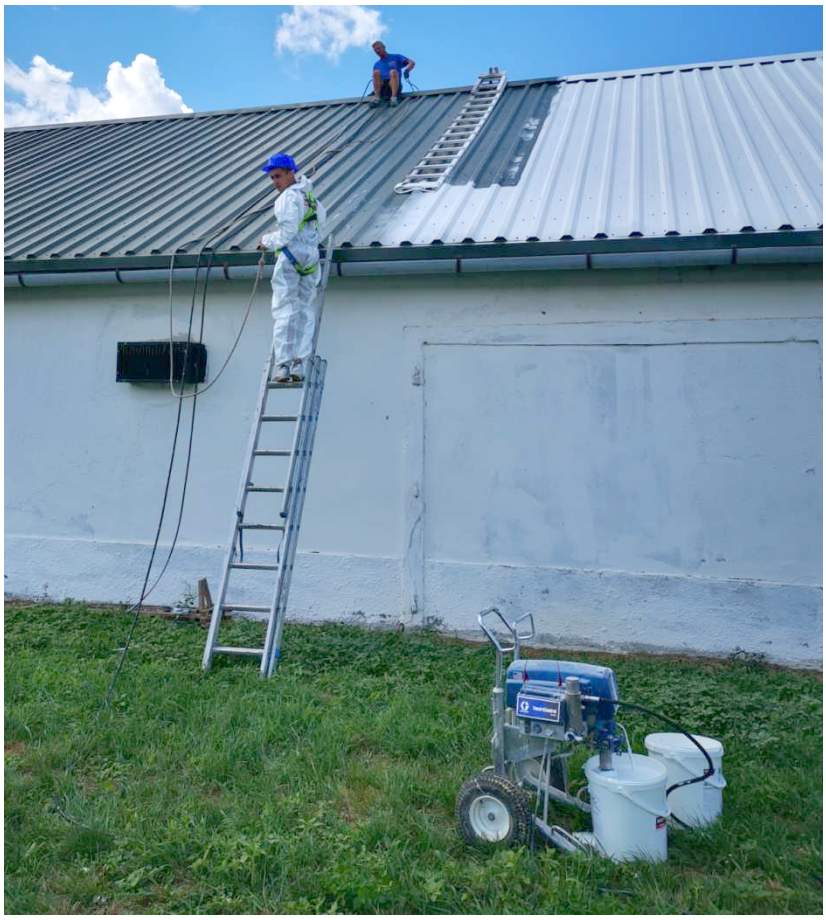

Application of the product:

The coating is applied to the surface in several coats by professionals participating in the training programme of Műszer Automatika Ltd. using special airless spraying equipment until the desired final coating thickness (0,6 – 1,0 mm) is reached (recommended spray gun: Graco UltraMax II 1095, Titan PowrTwin PLUS DI 6900).

The application technique is identical to that described for MANTI Ceramic Architectural Medium Density.