TECHNICAL DATA SHEET

MANTI Ceramic Architectural High Density heat protective thin-layer coating

Composition: Water-based dispersion binders, pigments, vacuum ceramic spheres, fillers and other additives, preservatives

Colour range: white

Packaging: 20 litres

General properties: The MANTI Ceramic Architectural High Density heat-protective thin-layer coating is a ready-to-use, solvent-free, water-based plaster that can be easily and effectively applied using conventional plastering and spraying techniques. Forms a stable, well-adherent coating containing microscale vacuum spheres with excellent thermal protection properties.

Applications: Residential, public and industrial buildings (halls), monuments and livestock and crop production buildings made of natural stone, concrete, brick walls, gypsum and cement plaster, etc. surfaces.

For making a smooth surface on a smooth base plaster, to remove unevenness before painting. It is also suitable for repairing smaller holes, cracks, joints and facade decorations.

Breathable and vapour-permeable, it provides a uniform coating, provides good adhesion to various surfaces, promotes natural ventilation of the building, and moderates thermal bridges, thereby reducing the possibility of mould formation. When applied in a thin layer, heating and cooling costs can be reduced while improving comfort. It is an environmentally friendly product and does not generate hazardous waste.

Quality characteristics:

Appearance:	easy-to-mix white dispersion
pH value:	9.0 – 9.5
Density (at 20°C):	0.7 – 0.8 g/cm^3
Drying time (at 23°C):	
Degree 1:	max. 2 hours *
Degree 5:	max. 24 hours *
Appearance of coated surface:	crack-free, structured white matt surface
Recoatability (at 23°C):	min. 2 hours
Coverage:	1.0 – 1.2 m^2/litre
Recommended number of layers:	2 – 6 mm
Solar Reflectance Index (SRI)	108
Thermal conductivity coefficient (ƛ)**	0.00106 W(mK)$^{-1}$

* Drying time can be extended by several hours due to the high humidity of the application environment!
** In accordance with our DoP and TÜV certification. Please observe our recommendations for practical application in a separate section of this document.

Storage, shelf life: Store in unopened packaging at a temperature between +5 and + 40°C in a well-ventilated, cool, dry place. Avoid heat and direct sunlight. Frost hazard! In case of unopened packaging, the manufacturer guarantees a shelf life of 2 years from the date of manufacture.

General recommendations for practical thermal calculations:

With reference to the thermal performance of the MANTI Ceramic High Density product, we would like to formalise the technical rationale underlying the variation of the equivalent thermal conductivity (λ) as a function of thickness, as opposed to using a "fixed lambda" irrespective of thickness. The product thickness utilised for the certification measurements was 0.25 mm.

As thickness increases, the equivalent thermal conductivity of the MANTI product varies proportionally, considering that the thermal reflectance effect — predominantly a surface-related phenomenon — is maximised at minimal thicknesses and progressively decreases in relative contribution as overall thickness increases.

Based on multiple real-life experiments carried out by our company and independent third parties, we recommend the following adaptations for heat transfer calculations:

Thickness (d) [mm]	Corresponding thermal conductivity coefficient (λ̃) [W(mk)$^{-1}$]	Heat transfer coefficient (U-value) [W(m^{2}K)$^{-1}$]	Thermal resistance (R-value) [(m^{2}K)W^{-1}]
1	0.0012	1.200	0.833
2	0.0013	0.650	1.538
3	0.0014	0.467	2.143
4	0.0015	0.375	2.667
5	0.0016	0.320	3.125
6	0.0017	0.283	3.529
7	0.0018	0.257	3.889
8	0.0019	0.238	4.211
9	0.0020	0.222	4.500
10	0.0021	0.210	4.762

Preparation of the substrate: The substrate must be homogeneous, solid, load-bearing, dry, absorbent, free from motion and shrinkage, and free from oil, grease, and other impurities. Inspect the substrate to be cleaned; clean if necessary; if loose, snarling layers are present, remove them with a brush, spatula, and sanding. Fill deeper cracks with a flexible crack-bridging material, then sand after drying. Different absorbent areas of the surface can cause stains after application, so priming the surface with a solvent-free, air- and vapour-permeable **MANTI Primer fix** concentrate is required to even out absorbency. **MANTI Ceramic Architectural Medium Density** is required as a final coating.

Product preparation: The contents of the bucket should be thoroughly mixed until a completely homogeneous dispersion is obtained. The product may be diluted with up to 5% deionised or distilled water as required.

Use of the product: The plaster material is applied to the surface in the first layer using a plastering iron with teeth of 3-4 mm. Allow the plastered surface to dry, then remove the excess formed on the surface of the layer with a plastering iron of a size corresponding to the width of the applied layer. Smooth the second layer into the first formed toothed layer with a smooth, toothless plastering iron. Smooth the stiffening net on the surface thus formed, then smooth it with a thin layer of plaster. Smooth out any unevenness by rolling with a sponge paint roller. Use a toothless plastering iron to form the next layer. Finally, smooth the formed surface with the plastering iron in a circular motion until the desired result is achieved. An average drying time of 6-8 hours should be expected between the applied layers under warm, dry conditions. The total drying time of the coating is 24 hours. If we still find defects in our work, we should patch them with a little plaster and then sand them after it dries. Do not work in rain or scorching sunlight at sub-surface or air

temperatures below +5 °C.

Cleaning of tools after immediate use: with water

Hazard classification: Not hazardous for health and the environment. Wear personal protective equipment as specified in the safety data sheet.

EU limit value for this product (A / c): 40 g/l (2010).
This product contains up to 40 g/l VOC.

Supplemental label elements:

EUH208 Contains the reaction mass of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one 3:1 ratio. May produce an allergic reaction.

EUH210 Safety data sheet available on request.

Safety instructions: Not flammable! Frost hazard!

Date of manufacturing: Indicated on the packaging.

Quality assurance and testing: The first type test classification of the product was performed by the KERMI Department of the Central Laboratory of ÉMI TÜV SÜD Kft. according to the standard MSZ EN 15824: 2009. Protocol No.: R-1072744.

Producer: **Műszer Automatika Vegyesipari Kereskedelmi és Szolgáltató Kft.**
H-2040 Budaörs, Komáromi utca 22.
Tel: +36-23-365-280; e-mail: mautom@muszerautomatika.hu